Emission Sources - Maximum Allowable Emission Rates

Permit Numbers 6056, PSDTX1062M2 and GHGPSDTX121

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)	FIN	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
				lbs/hour	TPY (4)
FCOKE2	COKE 2FE	DCU Coke Handling (5)	PM	0.01	0.01
			PM_{10}	0.01	0.01
			$PM_{2.5}$	0.01	0.01
FCOKEX	COKE X FE	Coke Stockpile Surge Pad (5)	PM	0.33	1.45
			PM_{10}	0.17	0.72
			$PM_{2.5}$	0.17	0.72
FKCRU5 FE	CRU5 FE	#5 CRU Cooling Tower	VOC	2.31	4.34
			Benzene	0.01	0.01
			Cl_2	0.28	1.25
FKDCU2 FE	DCU2 FE	DCU 2 Cooling Tower	VOC	1.71	3.21
			Benzene	0.01	0.01
			Cl_2	0.21	0.92
FKPS 4 FE	PS 4 FE	Power Station Cooling Tower	Cl_2	0.04	0.17
FKVPS 5 FE	VPS 5 FE	VPS Cooling Tower	VOC	1.64	3.07
			Benzene	0.01	0.01
			Cl_2	0.20	0.88
FKARU3	ARU 3 FE	ARU No. 3 Cooling Tower (5)	VOC	0.01	0.04
			Benzene	0.01	0.01
			Cl_2	0.01	0.06

Emission Sources - Maximum Allowable Emission Rates

Emission Point No. (1)	FIN	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
				lbs/hour	TPY (4)
EDCU2	EDCU2	DCU No. 2 Flare Stack	NO_x	0.03	0.11
			VOC	0.01	0.01
			SO_2	0.01	0.01
			CO	0.18	0.81
EHCU2	HCU NO2FS	HCU No. 2 Flare Stack	NO_x	0.02	0.09
			VOC	0.01	0.01
			SO_2	0.01	0.01
			CO	0.15	0.64
EVPS5	VPS NO5 FS	VPS No. 5 Flare Stack	NO_x	0.02	0.07
			VOC	0.01	0.01
			SO_2	0.01	0.01
			CO	0.11	0.48
ESBU2	SBU2	SBU2 Flare Stack	NO_x	0.02	0.07
			VOC	0.01	0.01
			SO_2	0.01	0.01
			CO	0.11	0.48
FARU1	ARU 1 FE	ARU No. 1 Fugitive Emissions	VOC	0.14	0.63
			Benzene	0.01	0.01
			H_2S	0.22	0.96
FARU2	ARU2 FE	ARU No. 2 Fugitive Emissions	VOC	0.08	0.33
			Benzene	0.01	0.01
			H_2S	0.11	0.48
FARU3	ARU 3 FE	ARU No.3 Fugitive Emissions	VOC	0.08	0.36
			Benzene	0.01	0.01
			H_2S	0.08	0.37

Emission Sources - Maximum Allowable Emission Rates

Emission Point No. (1)	FIN	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
				lbs/hour	TPY (4)
FSWS1	ARU 3 FE	ARU No.3 Fugitive Emissions	VOC	0.01	0.01
			H_2S	0.16	0.72
			NH_3	0.01	0.01
FARU4	ARU 4 FE	ARU No.4 Fugitive Emissions	VOC	0.14	0.16
			Benzene	0.01	0.01
			H_2S	0.04	0.17
FSRU2	SRU 2 FE	SRU No.2 Fugitive Emissions	SO_2	0.01	0.04
			H_2S	0.01	0.05
FSRU3	SRU 3 FE	SRU No.3 Fugitive Emissions	SO_2	0.01	0.04
			H_2S	0.01	0.05
FSRU4	SRU 4 FE	SRU No.4 Fugitive Emissions	SO_2	0.06	0.24
			H_2S	0.06	0.26
CEP-FUG	Various	Fugitives Group	VOC	33.61	147.66
			SO_2	0.02	0.28
			CO	0.02	0.09
			Benzene	0.05	0.23
			H_2S	0.74	3.26
			NH_3	0.01	0.01
FTGTU1	TGTU 1 FE	Tail Gas Treating Unit No.1 Incinerator Fugitives	SO_2	0.01	0.03
			CO	0.01	0.06
			H_2S	0.01	0.06
FTGTU2	TGTU 2 FE	Tail Gas Treating Unit No.2 Incinerator Fugitives	SO_2	0.01	0.03
			CO	0.02	0.07
			H_2S	0.01	0.07

Emission Sources - Maximum Allowable Emission Rates

Emission Point No. (1)	FIN	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
				lbs/hour	TPY (4)
SCRU5-1	CRU5INTHT1	#5 CRU Platformer No.1 Intermediate Heater	NO_x	17.33	42.66
			VOC	2.67	2.30
			SO_2	18.44	37.82
			CO	16.94	58.41
			PM	3.69	12.71
			PM_{10}	3.69	12.71
			$PM_{2.5}$	3.69	12.71
SCRU5-2	CRU5INTHT2	#5 CRU Platformer No.2 Intermediate Heater	NO_x	12.39	27.51
			VOC	1.91	1.48
			SO_2	13.19	24.39
			CO	12.12	37.67
			PM	2.64	8.20
			PM_{10}	2.64	8.20
			$PM_{2.5}$	2.64	8.20
SCRU5-2	CRU5INTHT3	#5 CRU Platformer No.3 Intermediate Heater	NO_x	7.70	21.04
			VOC	1.19	1.13
			SO_2	8.20	18.65
			CO	7.53	28.81
			PM	1.64	6.27
			PM_{10}	1.64	6.27
			$PM_{2.5}$	1.64	6.27

Emission Sources - Maximum Allowable Emission Rates

Emission Point No. (1)	FIN	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
				lbs/hour	TPY (4)
SNHTU2-1	NHTU2CHT	Naphtha Hydrotreater CHG Heater	NO_x	7.25	19.88
			VOC	1.12	2.14
			SO_2	7.71	17.63
			CO	7.09	27.22
			PM	1.54	5.93
			PM_{10}	1.54	5.93
			$PM_{2.5}$	1.54	5.93
SCRU5-1	CRU5PLATHT	#5 CRU Platformer Heater	NO_x	13.93	38.15
			VOC	2.15	2.06
			SO_2	14.83	33.82
			CO	13.62	52.23
			PM	2.97	11.37
			PM_{10}	2.97	11.37
			$PM_{2.5}$	2.97	11.37
SHCU2-1	HCU2H1A	HCU No.2 1st Stage Charge Set A Heater	NO_x	2.32	6.66
			VOC	0.36	0.72
			SO_2	2.47	5.91
			CO	2.27	9.12
			PM	0.49	1.99
			PM_{10}	0.49	1.99
			$PM_{2.5}$	0.49	1.99

Emission Sources - Maximum Allowable Emission Rates

Emission Point No. (1)	FIN	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
				lbs/hour	TPY (4)
SHCU2-2	HCU2H1B	HCU No.2 1st Stage Charge Set B Heater	NO_x	2.32	6.66
			VOC	0.36	0.72
			SO_2	2.47	5.91
			CO	2.27	9.12
			PM	0.49	1.99
			PM_{10}	0.49	1.99
			$PM_{2.5}$	0.49	1.99
SHCU2-3	HCU2H2	HCU No.2 2nd Charge Heater	NO_x	2.94	8.46
			VOC	0.45	0.91
			SO_2	3.13	7.50
			CO	2.88	11.58
			PM	0.63	2.52
			PM_{10}	0.63	2.52
			$PM_{2.5}$	0.63	2.52
SHTU6-1	HTU6CHGH1	HTU No.6 Charge Heater	NO_x	3.29	9.46
			VOC	0.51	1.02
			SO_2	3.51	8.39
			CO	3.22	12.96
			PM	0.70	2.82
			PM_{10}	0.70	2.82
			$PM_{2.5}$	0.70	2.82

Emission Sources - Maximum Allowable Emission Rates

Emission Point No. (1)	FIN	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
				lbs/hour	TPY (4)
SHTU6-2	HTU6CHGH2	HTU No.6 Fractionator Reboiler	NO_x	2.51	7.22
			VOC	0.39	0.78
			SO_2	2.67	6.40
			CO	2.46	9.88
			PM	0.53	2.15
			PM_{10}	0.53	2.15
			$PM_{2.5}$	0.53	2.15
SHCU2-6	HCU2DHTH1	HCU No.2 DHT Charge Heater	NO_x	3.13	9.00
			VOC	0.48	0.97
			SO_2	3.34	7.98
			CO	3.07	12.33
			PM	0.67	2.68
			PM_{10}	0.67	2.68
			$PM_{2.5}$	0.67	2.68
SHCU2-5	SCHCU2-5	HCU No.2 Fractionator Heater	NO_x	15.59	62.69
			VOC	2.40	4.83
			SO_2	16.59	39.70
			CO	15.25	61.31
			PM	3.32	13.35
			PM_{10}	3.32	13.35
			$PM_{2.5}$	3.32	13.35

Emission Sources - Maximum Allowable Emission Rates

Emission Point No. (1)	FIN	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
				lbs/hour	TPY (4)
SDCU2-1	SDCU2-1	Coker Heater No.1	NO_x	9.42	36.58
			VOC	1.45	1.41
			SO_2	10.02	23.16
			CO	9.21	35.77
			PM	2.00	7.79
			PM_{10}	2.00	7.79
			$PM_{2.5}$	2.00	7.79
SDCU2-2	SDCU2-2	Coker Heater No.2	NO_x	9.42	36.58
			VOC	1.45	1.41
			SO_2	10.02	23.16
			CO	9.21	35.77
			PM	2.00	7.79
			PM_{10}	2.00	7.79
			$PM_{2.5}$	2.00	7.79
SDCU2-3	SDCU2-3	Coker Heater No.3	NO_x	9.42	36.58
			VOC	1.45	1.41
			SO_2	10.02	23.16
			CO	9.21	35.77
			PM	2.00	7.79
			PM_{10}	2.00	7.79
			$PM_{2.5}$	2.00	7.79

Emission Sources - Maximum Allowable Emission Rates

Emission Point No. (1)	FIN	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
				lbs/hour	TPY (4)
SVPS5-1	VPS5H1/2	VPS No.5, No.1/2 Atmospheric Heater	NO_x	14.32	9.65
			VOC	2.21	4.63
			SO_2	15.24	38.02
			CO	14.00	58.72
			PM	3.05	12.78
			PM_{10}	3.05	12.78
			$PM_{2.5}$	3.05	12.78
			NH_3	1.53	6.42
SVPS5-1	VPS5H3/4	VPS No.5, No.3/4 Atmospheric Heater	NO_x	14.32	9.65
			VOC	2.21	4.63
			SO_2	15.24	38.02
			CO	14.00	58.72
			PM	3.05	12.78
			PM_{10}	3.05	12.78
			$PM_{2.5}$	3.05	12.78
			NH_3	1.53	6.42
SVPS5-2	VPS5VAC1HT	VPS No.5, No.1 Vacuum Heater	NO_x	7.56	5.10
			VOC	1.16	2.44
			SO_2	8.05	20.09
			CO	7.39	31.02
			PM	1.61	6.75
			PM_{10}	1.61	6.75
			$PM_{2.5}$	1.61	6.75
			NH_3	0.81	3.39

Emission Sources - Maximum Allowable Emission Rates

Emission Point No. (1)	FIN	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
				lbs/hour	TPY (4)
SVPS5-2	VPS5VAC2HT	VPS No.5, No.2 Vacuum Heater	NO_x	7.56	5.10
			VOC	1.16	2.44
			SO_2	8.05	20.09
			CO	7.39	31.02
			PM	1.61	6.75
			PM_{10}	1.61	6.75
			$PM_{2.5}$	1.61	6.75
			NH_3	0.81	3.39
SNHTU2-2	NHTU2STRP	Naphtha Hydrotreater Stripper Reboiler	NO_x	6.51	17.92
			VOC	1.00	1.93
			SO_2	6.93	15.89
			CO	6.37	24.53
			PM	1.39	5.34
			PM_{10}	1.39	5.34
			$PM_{2.5}$	1.39	5.34
SNHTU2-3	NHTU2SPLT	Naphtha Hydrotreater Stripper Reboiler	NO_x	10.40	28.32
			VOC	1.60	3.05
			SO_2	11.06	25.11
			CO	10.17	38.78
			PM	2.21	8.44
			PM_{10}	2.21	8.44
			$PM_{2.5}$	2.21	8.44

Emission Sources - Maximum Allowable Emission Rates

Emission Point No. (1)	FIN	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
				lbs/hour	TPY (4)
STGTU1-2	STGTU1-2	Hot Oil Heater	NO_x	0.53	1.21
			VOC	0.03	0.07
			SO_2	0.20	0.27
			CO	0.43	1.00
			PM	0.04	0.09
			PM_{10}	0.04	0.09
			$PM_{2.5}$	0.04	0.09
STGTU2-2	STGTU2-2	Hot Oil Heater	NO_x	3.12	13.67
			VOC	0.17	0.74
			SO_2	1.16	3.03
			CO	2.57	11.25
			PM	0.23	1.02
			PM_{10}	0.23	1.02
			$PM_{2.5}$	0.23	1.02
SCRU5-3	CRU5-CCR	Regen Vent Scrubber Emissions	NO_x	2.28	10.00
			SO_2	1.59	6.96
			PM	0.13	0.59
			PM_{10}	0.13	0.59
			$PM_{2.5}$	0.13	0.59
			HCl	0.07	0.30
			Cl_2	0.01	0.06
SSSCRUB	SLD	Sulfur Loading	H_2S	0.16	0.71
			SO_2	0.31	1.34

Emission Sources - Maximum Allowable Emission Rates

Emission Point No. (1)	FIN	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
				lbs/hour	TPY (4)
POSCEPMN	POSCEPMN	Maintenance Group After CEP (6)	NO_x	899.31	18.37
			VOC	3149.82	75.97
			SO_2	359.64	3.86
			CO	2755.98	52.40
			PM	66.98	1.51
			PM_{10}	66.98	1.51
			$PM_{2.5}$	66.98	1.51
			Benzene	4.15	0.30
			H_2SO_4	8.00	0.32
			H_2S	29.09	0.35
			NH_3	13.81	0.43
CGNGRP	CGNGRP	Cogen Unit Group(6)	NO_x	74.21	272.81
			VOC	10.64	39.55
			SO_2	78.68	161.45
			CO	117.82	516.03
			PM	101.87	391.33
			PM_{10}	101.87	391.33
			$PM_{2.5}$	101.87	391.33
			H_2SO_4	32.00	58.69
			NH_3	29.83	113.39
TNKGRP	TNKGRP	Tank Group (6)	VOC	69.00	40.20
			Benzene	0.03	0.07

Emission Sources - Maximum Allowable Emission Rates

Emission Point No. (1)	FIN	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
				lbs/hour	TPY (4)
SRUGRP	SRUGRP	SRU Incinerators Group (6)	NO_x	29.15	109.56
			VOC	1.86	7.08
			SO_2	324.90	1351.64
			CO	56.86	236.54
			PM	2.58	9.78
			PM_{10}	2.58	9.78
			$PM_{2.5}$	2.58	9.78
SPS-LOV1	GTG41-LOV	Power Station No.4 Lube Oil Vent 1 (5)	PM	0.05	0.22
			PM_{10}	0.05	0.22
			$PM_{2.5}$	0.05	0.22
SPS4-1	GTG41	Power Station No.4 Cogen Unit 1	NO_x	15.22	62.87
			VOC	2.12	8.75
			SO_2	16.60	32.48
			CO	27.80	114.81
			PM	26.62	100.65
			PM_{10}	26.62	100.65
			$PM_{2.5}$	26.62	100.65
			H_2SO_4	9.41	18.40
			NH_3	7.88	27.88
SPS-LOV2	GTG42-LOV	Power Station No.4 Lube Oil Vent 2 (5)	PM	0.05	0.22
			PM_{10}	0.05	0.22
			$PM_{2.5}$	0.05	0.22

Emission Sources - Maximum Allowable Emission Rates

Emission Point No. (1)	FIN	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
				lbs/hour	TPY (4)
SPS4-2	GTG42	Power Station No.4 Cogen Unit 2	NO_x	15.22	62.87
			VOC	2.12	8.75
			SO_2	16.60	32.48
			CO	27.80	114.81
			PM	26.62	100.65
			PM_{10}	26.62	100.65
			$PM_{2.5}$	26.62	100.65
			H_2SO_4	9.41	18.40
			NH_3	7.88	27.88
SPS-LOV3	GTG43-LOV	Power Station No.4 Lube Oil Vent 3 (5)	PM	0.05	0.22
			PM_{10}	0.05	0.22
			$PM_{2.5}$	0.05	0.22
SPS4-3	GTG43	Power Station No.4 Cogen Unit 3	NO_x	15.22	62.87
			VOC	2.12	8.75
			SO_2	16.60	32.48
			CO	27.80	114.81
			PM	26.62	100.65
			PM_{10}	26.62	100.65
			$PM_{2.5}$	26.62	100.65
			H_2SO_4	9.41	18.40
			NH_3	7.88	27.88
SPS-LOV4	GTG44-LOV	Power Station No.4 Lube Oil Vent 4 (5)	PM	0.05	0.22
			PM_{10}	0.05	0.22
			$PM_{2.5}$	0.05	0.22

Emission Sources - Maximum Allowable Emission Rates

Emission Point No. (1)	FIN	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
				lbs/hour	TPY (4)
SPS4-4	GTG44	Power Station No.4 Cogen Unit 4	NO_x	15.22	62.87
			VOC	2.12	8.75
			SO_2	16.60	32.48
			CO	27.80	114.81
			PM	26.62	100.65
			PM_{10}	26.62	100.65
			$PM_{2.5}$	26.62	100.65
			H_2SO_4	9.41	18.40
			NH_3	7.88	27.88
SPS4-6	Boiler 46	Power Boiler 46	NO_x	20.86	39.16
			VOC	3.21	7.04
			SO_2	22.20	57.86
			CO	20.40	89.36
			PM	4.44	19.45
			PM_{10}	4.44	19.45
			$PM_{2.5}$	4.44	19.45
			NH_3	2.23	9.77
TK2073	TK2073	Storage TK2073	VOC	8.41	0.11
			Benzene	0.01	0.01
TK2074	TK2074	Storage TK2074	VOC	8.41	0.11
			Benzene	0.01	0.01
TK2093	TK2093	Storage TK2093	VOC	11.89	9.03
TK2094	TK2094	Storage TK2094	VOC	6.55	6.32
TK2085	TK2085	Storage TK2085	VOC	8.68	0.06
			Benzene	0.01	0.01

Emission Sources - Maximum Allowable Emission Rates

Emission Point No. (1)	FIN	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
				lbs/hour	TPY (4)
TK2097	TK2097	Storage TK2097	VOC	1.64	6.26
			Benzene	0.01	0.03
TK2096	TK2096	Storage TK2096	VOC	1.64	6.26
			Benzene	0.01	0.03
TK2069	TK2069	Storage TK2069	VOC	4.60	11.39
			Benzene	0.01	0.02
TK2067	TK2067	Storage TK 2067	VOC	4.60	11.39
			Benzene	0.01	0.02
TK2068	TK2068	Storage TK 2068	VOC	4.60	11.39
			Benzene	0.01	0.02
TK2110	TK2110	DCU Quench Water Tank	VOC	0.01	0.10
			Benzene	<0.01	<0.01
TK2111	TK2111	Refinery Waste Tank	VOC	0.70	0.19
TK2145	TK2145	Storage TK2145	VOC	1.14	4.17
			Benzene	0.01	0.01
TK1928	TK1928	Molten Sulfur Storage Tank	H_2S	0.05	0.22
			SO_2	1.15	5.03
TK1930	TK1930	Amine Surge Tank 1930	VOC	0.07	0.01
TK1937	TK1937	Resid Tank	VOC	14.13	0.97
004TK001	004TK001	Storage Tank 004TK	VOC	0.03	0.01

Emission Sources - Maximum Allowable Emission Rates

Emission Point No. (1)	FIN	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
				lbs/hour	TPY (4)
STGTU5-1	STGTU5-1	SRU5/TGTU5 Incinerator	NO_x	5.22	22.85
			VOC	0.35	1.54
			SO_2	71.11	311.47
			CO	12.44	54.51
			PM	0.49	2.13
			PM_{10}	0.49	2.13
			$PM_{2.5}$	0.49	2.13
STGTU6-1	STGTU6-1	SRU6/TGTU6 Incinerator	NO_x	5.22	22.85
			VOC	0.35	1.54
			SO_2	71.11	311.47
			CO	12.44	54.51
			PM	0.49	2.13
			PM_{10}	0.49	2.13
			$PM_{2.5}$	0.49	2.13
STGTU7-1	STGTU7-1	SRU7/TGTU7 Incinerator	NO_x	5.22	22.85
			VOC	0.35	1.54
			SO_2	71.11	311.47
			CO	12.44	54.51
			PM	0.49	2.13
			PM_{10}	0.49	2.13
			$PM_{2.5}$	0.49	2.13
FPS3	PS No 3 FE	Power Station No.3 Fugitive Emissions	VOC	2.20	9.50

Emission Sources - Maximum Allowable Emission Rates

Emission Point No. (1)	FIN	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
				lbs/hour	TPY (4)
STGTU1-1	TGTUINCINR	SRU1/TGTU1 Incinerator	NO_x	6.00	18.22
			VOC	0.40	1.23
			SO_2	62.22	236.83
			CO	10.89	41.45
			PM	0.56	1.70
			PM_{10}	0.56	1.70
			$PM_{2.5}$	0.56	1.70
STGTU2-1	STGTU2-1	SRU2/TGTU1 Incinerator	NO_x	7.50	22.78
			VOC	0.40	1.23
			SO_2	62.22	236.83
			CO	10.89	41.45
			PM	0.56	1.70
			PM_{10}	0.56	1.70
			$PM_{2.5}$	0.56	1.70

(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
$PM_{2.5}$ - particulate matter equal to or less than 2.5 microns in diameter
CO - carbon monoxide
Cl_2 - chlorine
H_2S - hydrogen sulfide
NH_3 - ammonia

(4) Compliance with annual emission limits (tons per year) is based on a 12-month rolling period.

Emission Sources - Maximum Allowable Emission Rates

(5) Emission rate is an estimate and is enforceable through compliance with the applicable special condition(s) and permit application representations

(6) Refer to Attachment 10 – Emission Groups for the specific EPNs, Facility Identification Numbers and source names included in each group.

Date: February 10, 2017