EMISSION SOURCES – MAXIMUM ALLOWABLE EMISSION RATES

Permit Numbers 6056 and PSDTX1062M1

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. 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)					Emission Rates*	
EPN	FIN	Source Name (2) (5)		Air Contaminant Name (3)	lb/hr	TPY**
FCOKE2	COKE 2 FE	DCU coke handling	(4)	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	(4)	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	(4)	VOC	2.31	10.12
				Benzene	0.01	0.03
				Chlorine	0.28	1.25
FKDCU2 FE	DCU2 FE	DCU 2 cooling tower	(4)	VOC	1.71	7.49
				Benzene	<0.01	<0.01
				Chlorine	0.21	0.92
FKPS 4 FE	PS 4 FE	Power Station Cooling Tower	(4)	Chlorine	0.04	0.17
FKVPS 5 FE	VPS 5 FE	VPS Cooling Tower	(4)	VOC	1.64	7.17
				Benzene	<0.01	0.01
				Chlorine	0.20	0.88
FARU5	ARU 5 FE	ARU No. 5 Fugitive Emissions	(4)	VOC	0.04	0.16
				Benzene	<0.01	<0.01
				Hydrogen Sulfide	0.04	0.17
FSWS2	ARU 5 FE	ARU No. 5 Fugitive Emissions	(4)	VOC	<0.01	<0.01
				Hydrogen Sulfide	0.16	0.72
				Ammonia	<0.01	<0.01

EMISSION SOURCES – MAXIMUM ALLOWABLE EMISSION RATES

FARU6	ARU 6 FE	ARU No. 6 Fugitive Emissions	(4)	VOC	0.04	0.16
				Benzene	<0.01	<0.01
				Hydrogen Sulfide	0.04	0.17
FSWS3	ARU 6 FE	ARU No. 6 Fugitive Emissions	(4)	VOC	<0.01	<0.01
				Hydrogen Sulfide	0.16	0.72
				Ammonia	<0.01	<0.01
FNHTU2	NHTU2 FE	Naphtha Treating Complex Fugitive Emissions	(4)	VOC	2.59	11.33
				Benzene	0.01	0.03
FDCU2	FDCU2	DCU No. 2 Fugitive Emissions	(4)	VOC	2.91	12.75
				Benzene	0.01	0.03
FHCU2	HCU NO2 FE	HCU No. 2 Fugitive Emissions	(4)	VOC	2.77	12.15
				Benzene	<0.01	<0.01
FHCU2-OSBL	HCU2 OSBL FE	HCU No. 2 OSBL Fugitive Emissions	(4)	VOC	2.53	11.10
				Benzene	<0.01	<0.01
FHTU6	HTU 6 FE	HTU 6 Fugitive Emissions	(4)	VOC	1.29	5.66
				Benzene	<0.01	<0.01
FPS4	PS 4 FE	Power Station No. 4 Fugitive Emissions	(4)	VOC	0.15	0.66
				Benzene	<0.01	<0.01
FSRU5	SRU 5 FE	SRU No. 5 Fugitive Emissions	(4)	SO_2	0.04	0.16
				Hydrogen Sulfide	0.04	0.17
FSRU6	SRU 6 FE	SRU No. 6 Fugitive Emissions	(4)	SO_2	0.04	0.16
				Hydrogen Sulfide	0.04	0.17
FSRU7	SRU 7 FE	SRU No. 7 Fugitive Emissions	(4)	SO_2	0.04	0.16
				Hydrogen Sulfide	0.04	0.17

EMISSION SOURCES – MAXIMUM ALLOWABLE EMISSION RATES

AIR CONTAMINANTS DATA

Emission Point No. (1)					Emission Rates*	
EPN	FIN	Source Name (2) (5)		Air Contaminant Name (3)	lb/hr	TPY**
FVPS5	VPS NO5 FE	VPS No. 5 Fugitive Emissions	(4)	VOC	7.04	30.81
				Benzene	0.01	0.06
FTGTU5	TGTU 5 FE	Tail Gas Treating Unit No. 5 Incinerator		SO_2	<0.01	0.02
				CO	0.01	0.04
				Hydrogen Sulfide	0.01	0.04
FTGTU6	TGTU 6 FE	Tail Gas Treating Unit No. 6 Incinerator		SO_2	<0.01	0.02
				CO	0.01	0.04
				Hydrogen Sulfide	0.01	0.04
FTGTU7	TGTU 7 FE	Tail Gas Treating Unit No. 7 Incinerator		SO_2	<0.01	0.02
				CO	0.01	0.04
				Hydrogen Sulfide	0.01	0.04
FGR-3	FGR-3	Flare Gas Recovery		VOC	1.09	4.79
				Benzene	<0.01	<0.01
FGR-4	FGR-4	Flare Gas Recovery		VOC	1.09	4.79
				Benzene	<0.01	<0.01
SCRU5-1	CRU5INTHT1	#5 CRU Platformer No.1 Intermediate Heater		NO_x	17.33	42.66
				VOC	2.67	4.60
				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

EMISSION SOURCES – MAXIMUM ALLOWABLE EMISSION RATES

SCRU5-2	CRU5INTHT2	#5 CRU Platformer No. 2 Intermediate Heater	NO_x	12.39	27.51
			VOC	1.91	2.97
			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	2.27
			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
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	4.11
			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

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 1	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
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

EMISSION SOURCES – MAXIMUM ALLOWABLE EMISSION RATES

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
SDCU2-1	SDCU2-1	Coker Heater No. 1	NO_x	9.42	36.58
			VOC	1.45	2.82
			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	2.82
			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	2.82
			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
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
			Ammonia	1.53	6.42

EMISSION SOURCES – MAXIMUM ALLOWABLE EMISSION RATES

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
			Ammonia	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
			Ammonia	0.81	3.39
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
			Ammonia	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 Splitter 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

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
			Chlorine	0.01	0.06
SSSCRUB	SLD/TK1928	Sulfur Loading Maintenance Group	Hydrogen Sulfide	0.16	0.71
PRECEPMN	PRECEPMN	Pre CEP (5)	NO_x	63.59	0.20
			VOC	3282.68	45.82
			SO_2	316.56	3.80
			CO	200.63	1.28
			Benzene	6.74	0.16
			Hydrogen Sulfide	65.26	0.78
POSCEPMN	POSCEPMN	Maintenance Group After CEP (5)	NO_x	916.82	18.58
			VOC	4660.38	92.09
			SO_2	725.74	8.14
			CO	2853.60	53.56
			PM	66.98	1.51
			PM_{10}	66.98	1.51
			$PM_{2.5}$	66.98	1.51
			Benzene	8.45	0.35
			H_2SO_4	8.00	0.32
			Hydrogen Sulfide	96.95	1.16
			Ammonia	13.81	0.43
CGNGRP	CGNGRP	Cogen Unit Group (5)	NO_x	74.21	272.81
			VOC	18.06	72.06
			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
			Ammonia	29.83	113.39

EMISSION SOURCES – MAXIMUM ALLOWABLE EMISSION RATES

TNKGRP	TNKGRP	Tank Group (5)		VOC	70.19	34.71
				Benzene	0.03	0.06
SRUGRP	SRUGRP	SRU Incinerators Group (5)		NO_x	15.65	68.56
				VOC	1.06	4.62
				SO_2	200.45	877.98
				CO	35.08	153.65
				PM	1.46	6.39
				PM_{10}	1.46	6.39
				$PM_{2.5}$	1.46	6.39
SPS-LOV1	GTG41-LOV	Power Station No. 4 Lube Oil Vent 1	(4)	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	4.24	17.49
				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
				Ammonia	7.88	27.88
SPS-LOV2	GTG42-LOV	Power Station No. 4 Lube Oil Vent 2	(4)	PM	0.05	0.22
				PM_{10}	0.05	0.22
				$PM_{2.5}$	0.05	0.22
SPS4-2	GTG42	Power Station No. 4 Cogen Unit 2		NO_x	15.22	62.87
				VOC	4.24	17.49
				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
				Ammonia	7.88	27.88
SPS-LOV3	GTG43-LOV	Power Station No. 4 Lube Oil Vent 3	(4)	PM	0.05	0.22
				PM_{10}	0.05	0.22
				$PM_{2.5}$	0.05	0.22

EMISSION SOURCES – MAXIMUM ALLOWABLE EMISSION RATES

SPS4-3	GTG43	Power Station No. 4 Cogen Unit 3		NO_x	15.22	62.87
				VOC	4.24	17.49
				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
				Ammonia	7.88	27.88
SPS-LOV4	GTG44-LOV	Power Station No. 4 Lube Oil Vent 4	(4)	PM	0.05	0.22
				PM_{10}	0.05	0.22
				$PM_{2.5}$	0.05	0.22
SPS4-4	GTG44	Power Station No. 4 Cogen Unit 4		NO_x	15.22	62.87
				VOC	4.24	17.49
				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
				Ammonia	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
				Ammonia	2.23	9.77
TK 2076	TK 2076	Storage TK 2076		VOC (6)	Vapor	Recovery
TK 2073	TK 2073	Storage TK 2073		VOC	8.41	0.10
				Benzene	<0.01	<0.01
TK 2074	TK 2074	Storage TK 2074		VOC	8.41	0.10
				Benzene	<0.01	<0.01
TK 1939	TK 1939	Storage TK 1939		VOC (6)	Vapor	Recovery

EMISSION SOURCES – MAXIMUM ALLOWABLE EMISSION RATES

TK 1938	TK 1938	Storage TK 1938	VOC (6)	Vapor	Recovery
TK 2093	TK 2093	Storage TK 2093	VOC	11.89	9.02
TK 2094	TK 2094	Storage TK 2094	VOC	6.30	7.09
TK 2085	TK 2085	Storage TK 2085	VOC Benzene	12.61 <0.01	0.07 <0.01
TK 2097	TK 2097	Storage TK 2097	VOC Benzene	1.20 <0.01	7.17 0.04
TK 2096	TK 2096	Storage TK 2096	VOC Benzene	1.72 0.01	7.17 0.04
TK 2069	TK 2069	Storage TK 2069	VOC Benzene	7.10 0.01	11.28 0.01
TK 1937	TK 1937	Storage TK 1937	VOC (6)	Vapor	Recovery
TK 2120	TK 2120	Storage TK 2120	VOC (6)	Vapor	Recovery
TK 2121	TK 2121	Storage TK 2121	VOC (6)	Vapor	Recovery
TK 2067	TK 2067	Storage TK 2067	VOC Benzene	4.56 <0.01	11.28 0.01
TK 2068	TK 2068	Storage TK 2068	VOC Benzene	7.11 0.01	11.34 0.01
TK 2077	TK 2077	Storage TK 2077	VOC (6)	Vapor	Recovery
TK 2075	TK 2075	Storage TK 2075	VOC (6)	Vapor	Recovery
TK 2078	TK 2078	Storage TK 2078	VOC (6)	Vapor	Recovery
TK 2110	TK 2110	DCU quench water tank	VOC	0.02	0.10
TK 2111	TK 2111	Refinery waste tank	VOC	0.69	0.18
TK 2113	TK 2113	Storage TK 2113	VOC	0.07	0.26

EMISSION SOURCES – MAXIMUM ALLOWABLE EMISSION RATES

TK 2115	TK 2115	Storage TK 2115		VOC	0.07	0.26
TK 1908	TK 1908	Storage TK 1908		VOC	<0.01	<0.01
004TK001	004TK001	Storage 004TK001		VOC	0.02	<0.01
TK 2112	TK 2112	Storage TK 2112		VOC	0.01	0.01
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
FPS 1 & 2	PS 2 FE	Power Station Nos. 1 & 2 Fugitive Emissions	(4)	VOC	2.20	9.50
FPS3	PS NO 3 FE	Power Station No. 3 Fugitive Emissions	(4)	VOC	2.20	9.50

EMISSION SOURCES – MAXIMUM ALLOWABLE EMISSION RATES

SPS1-2	Boiler 29	Power Station No. 2, Boiler No. 9	NO_x	227.50	981.30
			VOC	0.60	2.50
			SO_2	11.00	47.20
			CO	17.30	75.80
			PM	2.10	8.90
			PM_{10}	2.10	8.90
			$PM_{2.5}$	2.10	8.90
SPS3-2	Boiler 32	Power Station No. 3, Boiler No. 2	NO_x	210.00	905.80
			VOC	0.50	2.30
			SO_2	10.10	43.60
			CO	14.90	65.20
			PM	1.90	8.20
			PM_{10}	1.90	8.20
			$PM_{2.5}$	1.90	8.20
SPS3-3	Boiler 33	Power Station No. 3 Boiler No. 3	NO_x	210.00	905.80
			VOC	0.50	2.30
			SO_2	10.10	43.60
			CO	14.90	65.20
			PM	1.90	8.20
			PM_{10}	1.90	8.20
			$PM_{2.5}$	1.90	8.20

(1) Emission point identification - either specific equipment designation or emission point number (EPN) from a plot plan
(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
SO_2 - sulfur dioxide
PM - particulate matter, suspended in the atmosphere, including PM_{10}
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
CO - carbon monoxide
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) Refer to Attachment I - Emission Groups for the specific EPNs, Facility Identification Numbers, and source names included in each group.
(6) These tanks are authorized and routed to vapor recovery.

* Emission rates are based on operating: 8,760 Hrs/yr

EMISSION SOURCES – MAXIMUM ALLOWABLE EMISSION RATES

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

Dated: December 17, 2010