EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

Permit Numbers 19566, PSD-TX-768M1, and PSD-TX-932

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)	Source Name (2)	Air Contaminant Name (3)	Emission Rates * lb/hr	Emission Rates * TPY**
Sulfur Recovery Unit				
32STK_001	SRU 2/3 Thermal Oxidizer	CO	28.90	126.60
		H_2S 0.71	2.96	
		NO_x	13.50	47.30
		PM_{10}	0.90	3.15
		SO_2	128.00	403.52
		VOC	0.70	2.28
32VNT_002	SRU 2/3 No. 2 Vent (5)	CO	36.80	
		COS	7.70	
		CS_2	0.80	
		H_2S	1.05	
		PM_{10}	0.10	
		SO_2	0.10	
32VNT_003	SRU 2/3 No. 3 Vent (5)	CO	36.80	
		COS	7.70	
		CS_2	0.80	
		H_2S	1.05	
		PM_{10}	0.10	
		SO_2	0.10	
32VNT_002 and 32VNT_003	SRU 2/3 No. 2 Vent and SRU 2/3 No. 3 Vent (5)	CO		10.68
		COS		1.79
		CS_2		0.13
		H_2S		0.38
		PM_{10}		0.02
		SO_2		0.02

30VNT_003	SRU 1 Sulfur Pit (5)	H_2S	0.04	0.01
		SO_2	1.67	0.28
32VNT_005	SRU 2/3 Sulfur Truck Loading (5)	H_2S	0.06	0.26
		SO_2	1.29	0.11
32FUG_001	SRU 2/3 Fugitives (4)	H_2S	0.25	1.10
		NH_3	0.01	0.04
		SO_2	0.05	0.21
		VOC	1.17	5.12
30FUG_001	SRU 1 Fugitives (4)	H_2S	1.71	7.51
		SO_2	1.79	7.82
<u>Crude Unit B</u>				
05STK_001	Crude B Atm. Heater H-3101 Stack	CO	58.16	106.15
		NO_x	94.32	344.27
		PM_{10}	4.72	17.50
		SO_2	22.01	40.16
		VOC	1.10	4.02
05STK_002	Crude B Vacuum Heater H-3102 Stack	CO	11.01	8.20
		NO_x	17.90	62.50
		PM_{10}	0.80	2.70
		SO_2	4.00	13.90
		VOC	0.40	1.50
05STK_004	Crude B Heater H-2001 Stack	CO	8.80	6.60
		NO_x	14.40	50.60
		PM_{10}	0.60	2.20
		SO_2	3.20	11.20
		VOC	0.40	1.20
05FUG_001	Crude B Fugitives (4)	H_2S	0.01	0.01

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

AIR CONTAMINANTS DATA

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates * lb/hr	TPY**
		VOC	4.94	21.50
Hydrocracker				
20STK_001	HDC First Stage West Furnace H-3301 Stack	CO	0.11	0.36
		NO_x	1.36	4.38
		PM_{10}	0.18	0.59
		SO_2	0.99	1.53
		VOC	0.09	0.30
20STK_002	HDC First Stage East Furnace H-3302 Stack	CO	0.40	1.60
		NO_x	3.00	12.10
		PM_{10}	0.13	0.50
		SO_2	0.73	1.41
		VOC	0.08	0.30
20STK_003	HDC Second Stage Furnace H-3303 Stack	CO	0.40	1.60
		NO_x	3.00	12.10
		PM_{10}	0.13	0.50
		SO_2	0.73	1.41
		VOC	0.08	0.30
20STK_004	HDC Stabilizer Reboiler Heater H-3304 Stack	CO	4.61	19.56
		NO_x	11.76	49.93
		PM_{10}	1.18	4.99
		SO_2	5.68	11.65
		VOC	0.55	2.33
20STK_005	HDC Splitter Reboiler H-3305 Stack	CO	2.65	2.94
		NO_x	8.02	19.15
		PM_{10}	0.71	2.05
		SO_2	3.24	4.58
		VOC	0.30	0.86
20CTL_005	Cooling Tower No. 5	VOC	1.51	6.62
20FUG_001	HDC Fugitives (4)	H_2S	0.01	0.05

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

AIR CONTAMINANTS DATA

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates * lb/hr	TPY**
		NH_3	0.01	0.02
		VOC	1.78	7.81
Pretreater No. 4				
28STK_001	PTR 4 Rx Charge Heater B-7001 (Common Stack with B-7002)	CO	7.40	25.93
		NO_x	12.00	42.05
		PM_{10}	0.50	1.75
		SO_2	2.80	4.91
		VOC	0.30	1.02
28STK_001	PTR 4 Depen. Reboiler Heater B-7002 (Common Stack with B-7001)	CO	8.07	34.36
		NO_x	13.08	55.45
		PM_{10}	0.58	2.47
		SO_2	2.98	6.45
		VOC	0.30	1.39
Reformer No. 4				
28STK_003	PTR 4 Reformer Heater B-7101-4 (Common Stack with B-7201)	CO	13.84	42.91
		NO_x	105.16	326.14
		PM_{10}	8.76	27.16
		SO_2	23.35	36.12
		VOC	1.25	4.07
28STK_003	PTR 4 Debut Reboiler B-7201 (Common Stack with B-7101-4)	CO	0.70	2.30
		NO_x	4.90	17.30
		PM_{10}	0.20	0.80
		SO_2	1.10	3.80
		VOC	0.10	0.40
28VNT_001	PTR 4 Reactor Regeneration Vent	Cl_2	0.40	1.90
		CO	1.49	6.52
		HCl	0.03	0.10
		NO_x	2.08	9.11
		PM_{10}	0.01	0.05

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

AIR CONTAMINANTS DATA

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates * lb/hr	TPY**
		SO_2	0.10	0.40
28FUG_001	PTR 4 Fugitives (4) (includes Pretreater)	Cl_2	0.10	0.44
		VOC	14.04	61.51
Coker				
04STK_004	Coker Far West Furnace	CO	9.27	26.64
		NO_x	13.50	38.79
		PM_{10}	0.84	2.42
		SO_2	3.33	9.57
		VOC	0.61	1.75
04FUG_001	Coker Fugitives (4)	VOC	4.62	20.34
Amine Regeneration Unit				
18FUG_001	DEA 3 Fugitives (4)	H_2S	0.17	0.75
		NH_3	0.01	0.01
		VOC	0.17	0.76
18SMP_4118	Spent Amine Sump 4118	VOC	0.01	0.01
Sour Water Stripper Unit				
29FUG_001	SWS Fugitives (4)	H_2S	0.01	0.01
		NH_3	0.01	0.01
		VOC	0.05	0.23
Storage Tanks				
49TFX_0721	OMCC 1 Fixed-Roof Tank 721	VOC	7.16	12.03
49TIF_0782	OMCC 1 Int. Floating Roof	VOC	2.68	10.61

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

AIR CONTAMINANTS DATA

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates * lb/hr	Emission Rates * TPY**
	Tank 782			
48TEF_1150	Ethyl Ext. Floating Roof Tank 1150	VOC	4.09	15.14
48TEF_1151	Ethyl Ext. Floating Roof Tank 1151	VOC	4.09	15.11
48TEF_1158	Ethyl Ext. Floating Roof Tank 1158	VOC	2.42	7.86
48TEF_1165	Ethyl Ext. Floating Roof Tank 1165	VOC	2.20	9.16
48TEF_1212	Ethyl Ext. Floating Roof Tank 1212	VOC	2.52	8.56
48TEF_1213	Ethyl Ext. Floating Roof Tank 1213	VOC	2.44	8.24
49TEF_1215	OMCC1 Ext. Floating Roof Tank 1215	VOC	3.01	12.94
48TEF_1251	Ethyl Ext. Floating Roof Tank 1251	VOC	2.67	8.30
48TEF_1300	Lube Plant Ext. Floating Roof Tank 1300	VOC	2.67	8.48
49TEF_1314	OMCC 1 Ext. Floating Roof Tank 1314	VOC	2.20	9.11
49TEF_1320	OMCC 1 Ext. Floating Roof Tank 1320	VOC	2.93	9.38
48TEF_1324	Ethyl Ext. Floating Roof Tank 1324	VOC	2.86	10.78

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

AIR CONTAMINANTS DATA

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates * lb/hr	Emission Rates * TPY**
48TEF_1325	Ethyl Ext. Floating Roof Tank 1325	VOC	1.76	7.37
48TEF_1329	Ethyl Ext. Floating Roof Tank 1329	VOC	3.46	9.73
19TEF_1323	Dualayer Ext. Floating Roof Tank 1323	VOC	0.46	1.59
19TEF_1332	Dualayer Ext. Floating Roof Tank 1332	VOC	0.50	1.72
48TEF_1334	Ethyl Ext. Floating Roof Tank 1334	VOC	2.44	7.73
49TEF_1335	OMCC1 Ext. Floating Roof Tank 1335	VOC	2.37	9.07
48TEF_1338	Ethyl Ext. Floating Roof Tank 1338	VOC	2.43	7.73
48TEF_1350	Ethyl Ext. Floating Roof Tank 1350	VOC	2.50	7.65
48TEF_1361	Ethyl Ext. Floating Roof Tank 1361	VOC	1.09	4.78
48TEF_1362	Ethyl Ext. Floating Roof Tank 1362	VOC	3.45	13.93
48TEF_1389	Ethyl Ext. Floating Roof Tank 1389	VOC	3.24	11.72
48TEF_1390	Ethyl Ext. Floating Roof Tank 1390	VOC	3.14	11.28

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

AIR CONTAMINANTS DATA

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates * lb/hr	Emission Rates * TPY**
50TEF_2119	OMCC 2 Ext. Floating Roof Tank 2119	VOC	4.54	6.91
50TEF_2209	OMCC 2 Ext. Floating Roof Tank 2209	VOC	3.60	5.49
50TEF_2210	OMCC 2 Ext. Floating Roof Tank 2210	VOC	3.63	6.52
50TEF_2212	OMCC 2 Ext. Floating Roof Tank 2212	VOC	3.63	5.61
50TEF_2213	OMCC 2 Ext. Floating Roof Tank 2213	VOC	3.60	5.94
50TEF_2221	OMCC 2 Ext. Floating Roof Tank 2221	VOC	2.20	8.61
50TEF_2223	OMCC 2 Ext. Floating Roof Tank 2223	VOC	4.88	7.97
50TEF_2225	OMCC 2 Ext. Floating Roof Tank 2225	VOC	3.17	5.00
49TEF_1377	OMCC 1 Ext. Floating Roof Tank 1377	VOC	1.17	3.71
49TEF_1378	OMCC 1 Ext. Floating Roof Tank 1378	VOC	1.15	3.63
18TFX_4117	Lean Amine Tank	VOC	0.07	0.04
Petroleum Coke Handling Facility				
04FUG002	Coke Pit	PM_{10}	0.22	0.18
		PM	0.42	0.22

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

AIR CONTAMINANTS DATA

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates * lb/hr	Emission Rates * TPY**
04FUG003	Stockpile	PM_{10}	1.11	0.44
		PM	2.39	1.08
04FUG004	Conveyor System 1	PM_{10}	0.86	0.30
		PM	1.71	0.15
04FUG005	Conveyor System 2	PM_{10}	0.94	0.08
		PM	1.98	0.17
Dualayer Unit				
19CTL_025	Dualayer Cooling Tower No. 25	VOC	0.11	0.50
19FUG_001	Dualayer Fugitives (4)	VOC	7.09	31.06
Naphtha Splitter Unit				
66FUG_001	Naphtha Splitter Unit Fugitives (4)	VOC	1.66	7.26
49FUG002	Low Sulfur Gasoline Project - Interconnecting Piping Fugitives (4)	VOC	1.60	7.03
Cogeneration Units				
61STK_001	COGEN Turbine 1 GE PG7241FA Turbine w/ 654 MMBtu/hr Duct Burner	NO_x	66.32	188.17
		CO***	139.60	372.48
		VOC	12.76	51.98
		SO_2	47.95	74.07
		PM_{10}***	24.54	106.13
		NH_3 31.88	97.36	
		H_2SO_4 3.67	5.67	
61STK_002	COGEN Turbine 2 GE PG7241FA Turbine w/ 654 MMBtu/hr Duct Burner	NO_x	66.32	188.17
		CO***	139.60	372.48
		VOC	12.76	51.98

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

AIR CONTAMINANTS DATA

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates * lb/hr	Emission Rates * TPY**
		SO_2	47.95	74.07
		PM_{10}***	24.54	106.13
		NH_3 31.88	97.36	
		H_2SO_4 3.67	5.67	
61STK_003	COGEN Turbine 3	NO_x	66.32	188.17
	GE PG7241FA Turbine w/	CO***	139.60	372.48
	654 MMBtu/hr Duct Burner	VOC	12.76	51.98
		SO_2	47.95	74.07
		PM_{10}***	24.54	106.13
		NH_3 31.88	97.36	
		H_2SO_4 3.67	5.67	
61VNT_001	CTG No. 1 Lube Oil Vent	VOC	0.04	0.19
61VNT_002	CTG No. 2 Lube Oil Vent	VOC	0.04	0.19
61VNT_003	CTG No. 3 Lube Oil Vent	VOC	0.04	0.19
61VNT_004	STG Lube Oil Vent	VOC	0.01	0.02
61CTL_031	Cooling Tower	PM_{10}	0.27	1.18
61FUG_001	Piping Fugitives (4)	VOC	2.62	11.48
		NH_3 0.13	0.56	

(1) Emission point identification - either specific equipment designation or emission point number from a plot plan.
(2) Specific point source names. For fugitive sources use area name or fugitive source name.
(3) CO - carbon monoxide
COS - carbonyl sulfide
CS_2 - carbon disulfide
Cl_2 - chlorine
HCl - hydrogen chloride
H_2S - hydrogen sulfide
H_2SO_4 - sulfuric acid

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

AIR CONTAMINANTS DATA

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates * lb/hr	TPY**

NH_3 - ammonia
NO_x - total oxides of nitrogen
PM - particulate matter, suspended in the atmosphere, including PM_{10}
PM_{10} - particulate matter equal to or less than 10 microns in diameter. Where PM is not listed, it shall be assumed that no PM greater than 10 microns is emitted
SO_2 - sulfur dioxide
VOC - volatile organic compounds as defined in Title 30 Texas Administrative Code § 101.1

(4) Fugitive emissions are an estimate only and should not be considered as a maximum allowable emission rate.

(5) The annual emission rate in tons per year is based on operating 336 hours per year (rolling annual basis) with the stack burner/thermal oxidizer down.

Dated_____

Permits by Rule (PBR) and Emissions Consolidated by Reference

Permit Numbers 19566, PSD-TX-768M1, and PSD-TX-932

Note: The emissions in this table were originally authorized under one or more Standard Exemptions (SEs), Permits by Rule (PBRs), or Standard Permits (SPs) which have been Consolidated by Reference into this permit. The rates for each Emission Point No. (EPN) and contaminant are included in the emission rates appearing previously in this document for the EPN. The original SEs, PBRs, and SPs continue in effect. These emissions have not been evaluated for effects.

EPN No.	Registration No(s).	PBR(s) Claimed	Air Contaminant Name (3)	Emission Rates *	
				lb/hr	TPY**
32STK_001		106.262	H_2S	0.71	2.96
32VNT_005		106.262	H_2S	0.06	0.26
32FUG_001	34760, 34779, 43675, 44038, 47309, 47608, 52288, 53561, 70003, 74997, and 75572	SE 118, 106.261, 106.262, 106.373, and 106.473	H_2S	0.0002	0.014
			SO_2	0.02	0.107
			VOC	0.243	1.052
30FUG_001	53561	SE 118, 106.261, 106.262, and 106.473	VOC	0.55	2.39
05FUG_001	46743, 47175, 47608, 50858, 54487, 54768, 71024, 71740, 74615	SE 106, 106.261, 106.262, and 106.472	H_2S	0.0027	0.005
			VOC	2.50	10.93
EPN No.	Registration No(s).	PBR(s) Claimed	Air Contaminant Name (3)	Emission Rates *	
				lb/hr	TPY**
20FUG_001	30669, 44099, 47608, 50858, 53040,	SE 84, 106, 118, 106.261, and 106.262	H_2S	0.01	0.05
			NH_3	0.005	0.02
			VOC	0.94	4.09

	54768, 55654, 70983, 71740, and 75572				
28STK_001		106.261	CO	Operations change with net emissions reduction.	Operations change with net emissions reduction.
			NO_x		
			PM_{10}		
			SO_2		
			VOC		
28VNT_001		SE 106, 106.261	CO	0.53	2.32
			NO_x	2.08	9.11
			PM_{10}	0.002	0.01

EPN No.	Registration No(s).	PBR(s) Claimed	Air Contaminant Name (3)	Emission Rates *	
				lb/hr	TPY**
04STK_004		106.261	VOC	0.008	0.034
18FUG_001	26280, 35777, 42951, 44048	SE 118, 106.261, 106.261	H_2S	0.009	0.038
			NH_3	0.000009	0.00004
			VOC	0.05	0.05
18SMP_4118			VOC	0.0004	0.0015
29FUG_001	71740	106.261	VOC	0.052	0.23
49TEF_1377		106.478	VOC	Product change with no emissions increase	Product change with no emissions increase
18TFX_4117			VOC	0.06	0.00
4FUG_002		SE 116, 106.261	PM_{10}	0.02	0.07
4FUG_003		SE 116 106.261	PM_{10}	0.04	0.18
			PM	0.12	0.54
4FUG_004	75572	SE 116,	PM_{10}	0.05	0.23

		106.261			
19FUG_001	44099, 54768, 71740, 75572	SE 51 106.261, 106.472	Inorganic	0.30	1.32
			VOC	0.16	0.72
66FUG_001	71740, 75572	106.261	VOC	0.02	0.11
50TEF_2223		106.261	VOC	3.06	0.00

* Emission rates are based on and the facilities are limited by the following maximum operating schedule:

Hrs/day 24 Days/week 7 Weeks/year 52

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

*** Emissions regulated under PSD-TX-932 permit authorization.

Dated September 27, 2007