

## Emission Sources - Maximum Allowable Emission Rates

Flexible Permit Numbers 49138, PSDTX768M1, PSDTX799, PSDTX802, PSDTX932 and PSDTX992M1

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)
See Attachment D	See Attachment D	Final VOC MSS Cap	1427.29	99.07
		Final VOC Flex Cap	5156.27	4171.23
See Attachment D	See Attachment D	Final NO <sub>x</sub> Emission Cap	948.18	34.97
		Final NO <sub>x</sub> Flex Cap	1028.46	1460.48
See Attachment D	See Attachment D	Final CO MSS Cap	55926.75	37.70
		Final CO Flex Cap	3921.32	7569.18
See Attachment D	See Attachment D	Final SO <sub>2</sub> MSS Cap	60.48	3.21
		Final SO <sub>2</sub> Flex Cap	15649.93	2160.47
See Attachment D	See Attachment D	Final PM <sub>2.5</sub> / PM <sub>10</sub> MSS Cap(5)	28.42	6.23
		Final PM <sub>2.5</sub> / PM <sub>10</sub> Flex Cap(5)	824.92	1482.72
See Attachment D	See Attachment D	Final PM MSS Cap	28.42	6.23
		Final PM Flex Cap	1020.67	1916.17
See Attachment D	See Attachment D	Final H <sub>2</sub> S MSS Cap	3.03	0.70
		Final H <sub>2</sub> S Flex Cap	157.03	15.61
See Attachment D	See Attachment D	Final H <sub>2</sub> SO <sub>4</sub> MSS Cap	0.92	0.31
		Final H <sub>2</sub> SO <sub>4</sub> Flex Cap	119.95	304.97
See Attachment D	See Attachment D	Final NH <sub>3</sub> MSS Cap	663.78	1.10
		Final NH <sub>3</sub> Flex Cap	115.53	367.97
04STK_001	Coker East Heater (B-101-B)	NO <sub>x</sub>	9.80	31.10
04STK_002	Coker Middle Heater	NO <sub>x</sub>	9.80	32.32

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	(B-101-A)			
04STK_003	Coker West Heater (B-101-C)	NO <sub>x</sub>	9.80	30.22
04STK_004	Coker Far West Heater(BA-3000)	NO <sub>x</sub>	13.50	38.79
05STK_001	CUB Atmospheric Heater (H-3101)	NO <sub>x</sub>	94.32	344.27
05STK_002	CUB South Vacuum Heater (H-3102)	NO <sub>x</sub>	17.90	62.50
05STK_004	CUB North Vacuum Heater (H-2001)	NO <sub>x</sub>	14.40	50.60
06STK_002	FCC Feed Preheater Heater (B- 2)	NO <sub>x</sub>	20.15	88.27
08STK_002	GP5E No. 2 Regenerator Heater	NO <sub>x</sub>	2.10	6.13
08STK_003	GP5E Propane Dryer Heater	NO <sub>x</sub>	0.14	0.62
15STK_001	CHD1 Charge Heater (B-1)	NO <sub>x</sub>	16.65	47.04
20STK_001	HDC1st Stage West Heater (H-3301)	NO <sub>x</sub>	1.55	6.05
20STK_002	HDC 1st Stage East Heater (H-3302)	NO <sub>x</sub>	3.00	12.10
20STK_003	HDC 2nd Stage Heater (H-3303)	NO <sub>x</sub>	3.00	12.10
20STK_004	HDC Stabilizer Heater (H-3304)	NO <sub>x</sub>	11.76	49.93
20STK_005	HDC Splitter Heater (H-3305)	NO <sub>x</sub>	8.02	19.15
25STK_001	Isom Pretreater Charge Heater (B-1)	NO <sub>x</sub>	5.10	17.08
25STK_003	Isom Reactor Charge Heater (B- 401)	NO <sub>x</sub>	2.50	7.88
25STK_004	Isom Regeneration Heater (B-402)	NO <sub>x</sub>	0.40	1.75
27STK_001	PTR3 Pretreater Heater (H-3401)	NO <sub>x</sub>	11.04	48.36
27STK_002	PTR3 Stripper	NO <sub>x</sub>	8.36	36.62

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	Reboiler (H-3402)			
27STK_003	PTR3 Reformer Heater (H-3403,4,5,6)	NO <sub>x</sub>	77.40	211.03
27STK_004	PTR3 Debutanizer Reboiler(H-3408)	NO <sub>x</sub>	5.40	21.02
28STK_001	PTR4 Pretreater Charge (B-7001)	NO <sub>x</sub>	12.00	42.05
28STK_001	PTR4 Depent Reboiler (B-7002)	NO <sub>x</sub>	13.08	55.45
28STK_003	PTR4 Reformer Heater (B-7101-4)	NO <sub>x</sub>	105.16	326.14
28STK_003	PTR4 Debutanizer Reboiler (B-7201)	NO <sub>x</sub>	4.90	17.30
36STK_002e, 36STK_002w, 36STK_002i	CUA Atmospheric Heater B1-A	NO <sub>x</sub>	25.29	100.74
36STK_004e, 36STK_004w, 36STK_004i	CUA Atmospheric Heater B1-B	NO <sub>x</sub>	25.29	100.74
36STK_006	CUA Vacuum Heater B-2	NO <sub>x</sub>	5.70	24.97
36STK_007	CUA Vacuum Heater B-3	NO <sub>x</sub>	5.70	23.65
38STK_001	Furf 1 Extract Heater B-1	NO <sub>x</sub>	3.40	12.70
38STK_001	Furf 1 Extract Heater B-2	NO <sub>x</sub>	(6)	(6)
38STK_002	Furf 1 Extract Heater B2-A	NO <sub>x</sub>	2.50	9.37
39STK_001	Furf 2 Extract Heater BA-1	NO <sub>x</sub>	6.83	27.47
39STK_001	Furf 2 Extract Heater BA-2	NO <sub>x</sub>	(7)	(7)
39STK_002	Furf 2 Extract Heater B-103	NO <sub>x</sub>	1.50	5.87
40STK_001	HDF Lube Oil Heater (10-B-1)	NO <sub>x</sub>	0.64	2.80
40STK_002	HDF Paraffin Wax Heater (20-B-1)	NO <sub>x</sub>	0.51	2.21

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47ENG_225	SIB Engine 225	NO <sub>x</sub>	0.51	2.25
47ENG_226	SIB Engine 226	NO <sub>x</sub>	0.51	2.25
47ENG_227	SIB Engine 227	NO <sub>x</sub>	0.51	2.25
47ENG_228	SIB Engine 228	NO <sub>x</sub>	0.51	2.25
47ENG_229	SIB Engine 229	NO <sub>x</sub>	0.51	2.25
55STK_001	PP2 COGEN Turbine (24)	SO <sub>3</sub>	2.00	4.40
57STK_033	PP3 Boiler No. 33	NO <sub>x</sub>	42.78	187.38
57STK_034	PP3 Boiler No. 34	NO <sub>x</sub>	42.78	187.38
65STK_001	Cold Box Reactivation Heater	NO <sub>x</sub>	0.23	0.89
27FUG_001	PTR3 Fugitive Area	Cl <sub>2</sub>	0.11	0.50
27VNT_001	Regenerator Vent	HCl	0.56	3.05
		HCl (During Scrubber Maintenance)	3.29	-
28FUG_001	PTR4 Fugitive Area	Cl <sub>2</sub>	0.10	0.44
28VNT_001	PTR4 Reactor Regeneration Vent	Cl <sub>2</sub>	0.40	1.90
		HCl	0.03	0.10
32VNT_002	SRU2/3 No. 2 Vent (Maintenance)	CS <sub>2</sub>	0.80	
		COS	7.70	
32VNT_003	SRU2/3 No. 3 Vent (Maintenance)	CS <sub>2</sub>	0.80	
		COS	7.70	
32VNT_002 32VNT_003	SRU2/3 No. 2 and No. 3 Vent (Maintenance)	CS <sub>2</sub>	-	0.13
		COS	-	1.79

- (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

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- NO<sub>x</sub> - total oxides of nitrogen
  - CO - carbon monoxide
  - SO<sub>2</sub> - sulfur dioxide
  - PM - particulate matter, suspended in the atmosphere, including PM<sub>10</sub> and PM<sub>2.5</sub>
  - PM<sub>10</sub> - particulate matter equal to or less than 10 microns in diameter, condensable and noncondensable. Where PM is not listed, it shall be assumed that no PM greater than 10 microns is emitted.
  - PM<sub>2.5</sub> - particulate matter equal to or less than 2.5 microns in diameter, condensable and noncondensable. Where PM is not listed, it shall be assumed that no PM greater than 2.5 microns is emitted.
  - H<sub>2</sub>S - hydrogen sulfide
  - H<sub>2</sub>SO<sub>4</sub> - sulfuric acid mist
  - NH<sub>3</sub> - ammonia
  - SO<sub>3</sub> - sulfur trioxide
  - Cl<sub>2</sub> - chlorine
  - HCl - hydrogen chloride
  - CS<sub>2</sub> - carbon disulfide
  - COS - carbonylsulfide
- (4) Compliance with annual emission limits (tons per year) is based on a 12 month rolling period.
- (5) PM<sub>2.5</sub> may be up to 100 percent of PM<sub>10</sub>
- (6) Emissions are emitted from the two heaters are emitted from the same stack.
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Date: February 07,  
2014