

# DRAFT EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

Permit Number 46307

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)
EP-5	Plant Flare (6)	VOC	194.00	74.58
		NO <sub>x</sub>	29.29	11.52
		SO <sub>2</sub>	0.01	0.01
		CO	149.24	58.69
		BD	-----	4.42
		HRVOC	-----	15.00
EP-4	OXO Incinerator/Boiler	VOC	0.86	3.78
		NO <sub>x</sub>	9.60	42.05
		SO <sub>2</sub>	0.09	0.41
		PM	1.19	5.22
		CO	13.18	57.71
EP-H10	No. 1 Butylene Heater	VOC	0.30	1.30
		NO <sub>x</sub>	3.30	14.45
		SO <sub>2</sub>	0.03	0.14
		PM	0.41	1.79
		CO	4.53	19.84
EP-H11	No. 1 C.E. Steam Superheater	VOC	0.51	2.24
		SO <sub>2</sub>	0.06	0.24
		NO <sub>x</sub>	5.70	24.97
		PM	0.71	3.10
		CO	7.82	34.27
EP-H13	No. 2 OXO Butylene Heater	VOC	0.30	1.30
		NO <sub>x</sub>	3.30	14.45

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		SO <sub>2</sub>	0.03	0.14
		PM	0.41	1.79
		CO	4.53	19.84
EP-H-14	No. 2 C.E. Steam Superheater	VOC	0.51	2.24
		NO <sub>x</sub>	5.70	24.97
		SO <sub>2</sub>	0.06	0.24
		PM	0.71	3.10
		CO	7.82	34.27
12DG-15	Boilerhouse Emergency Generator	VOC	0.12	0.05
		NO <sub>x</sub>	12.87	5.47
		SO <sub>2</sub>	0.85	0.36
		PM	0.91	0.39
		CO	2.77	1.18
3DG-14	OXO Emergency Generator	VOC	0.04	0.02
		NO <sub>x</sub>	4.62	1.96
		SO <sub>2</sub>	0.31	0.13
		PM	0.33	0.14
		CO	1.00	0.42
20G-437	Dock Pump Engine 20G-437	VOC	0.06	0.03
		NO <sub>x</sub>	1.13	0.48
		SO <sub>2</sub>	0.72	0.31
		PM	0.11	0.05
		CO	0.28	0.12
31G-2350	Diesel Water Blaster Engine	VOC	0.75	0.78
		NO <sub>x</sub>	3.04	3.16
		SO <sub>2</sub>	0.01	0.01
		PM	0.10	0.10
		CO	1.72	1.79
F-CT-1	Cooling Tower CT-1	VOC	50.40	22.08
F-CT-10	Cooling Tower CT-10	VOC	10.00	1.47
F-CT-11	Cooling Tower CT-11	VOC	10.00	0.55

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F-CT-14	Cooling Tower CT-14	VOC	23.50	10.30
F-CT-3	Cooling Tower CT-3	VOC	24.40	10.67
F-CT-7	Cooling Tower CT-7	VOC	10.00	2.76
	Combined Cooling Towers CT-1 through CT-14 (7)	VOC	-----	2.59
CAT-TFR	Catalyst Transfer Hopper	PM	0.01	0.01
CAT-BH	Catalyst Baghouse	PM	0.01	0.01
F-TTR	Truck Rack Loading Facility	VOC	6.47	0.26
T-32	No. 32 Tank	VOC	0.08	0.01
T-33	No. 33 Tank	VOC	0.58	0.01
T-34	No. 34 Tank	VOC	0.29	0.02
T-69-1	No. 69-1 Tank	VOC	0.29	0.01
T-81	No. 81 Tank	VOC	0.58	0.05
T-82	No. 82 Tank	VOC	1.13	0.07
T-83	No. 83 Tank	VOC	1.13	0.04
T-84	No. 84 Tank	VOC	0.29	0.02
T-85	No. 85 Tank	VOC	0.29	0.01
T-86	No. 86 Tank	VOC	0.58	0.02
T-155	TEA Storage Tank	VOC	0.01	0.01
F-10A	Oil Separation	VOC	0.17	0.76
1A	Isomerization Unit - Fugitives (5)	VOC	1.85	8.09
1B	Hydrogenation Unit - Fugitives (5)	VOC	0.02	0.10
1C	Dimethyl Formamide Unit - Fugitives (5)	VOC	4.54	19.88
1D	Diiso Unit - Fugitives (5)	VOC	1.67	7.33
2A	Fugitive Area No. 2 (5)	VOC	1.59	6.95
2B	Fugitive Area No. 2B (5)	VOC	1.31	5.73
FUG-2C	Tank Car Loading Fugitives (5)	VOC	0.45	1.98
FUG-2D	Truck Rack Loading Fugitives (5)	VOC	0.16	0.69
FUG-3	Fugitive Area No. 3 (5)	VOC	2.44	10.70
FUG-4	Fugitive Area No. 4 (5)	VOC	2.76	12.10
FUG-5	Fugitive Area No. 5 (5)	VOC	0.03	0.15

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L-5	Ship and Barge Loading Dock Fugitives (5)	VOC	0.10	0.44
Maintenance, Start-up, and Shutdown Activities				
Plant-MSS-1	External Floating Roof Tank MSS Emissions	VOC	11.26	1.32
Plant-MSS-2	Fixed Roof Tanks - MSS Emissions	VOC	0.32	0.01
Plant-MSS-3	Fract Tanks - MSS Emissions	VOC	1.91	0.09
Plant-MSS-4	Heat Exchangers - MSS Emissions	VOC	0.22	0.01
Plant-MSS-5	Internal Floating Roof Tanks - MSS Emissions	VOC	45.02	0.32
Plant-MSS-6	Spheres - MSS Emissions	VOC	74.98	0.18
Plant-MSS-7	Towers - MSS Emissions	VOC	2.27	0.02
Plant-MSS-8	Vacuum Trucks - MSS Emissions	VOC	0.28	0.01
Plant-MSS-9	Attachment B MSS Activities	VOC	2.65	0.51
Plant-MSS-10	Attachment A MSS Activities	VOC	0.14	0.04
Plant-MSS-11	Temporary Control Device - MSS Emissions	NO <sub>x</sub>	1.64	0.59
		CO	3.22	1.16
		SO <sub>2</sub>	0.04	0.01
		VOC	12.45	0.83
		PM	0.13	0.05
		PM <sub>10</sub>	0.13	0.05
		PM <sub>2.5</sub>	0.13	0.05
Plant-MSS	Plantwide Short-term Emission Rate Allowables for Individual Chemicals	1,3 butadiene	79.47	
		butane	49.62	
		butene	52.96	
		diisobutylene	13.90	
		dimethyl formamide	1.55	
		ethyl tert-butyl ether	29.25	
		ethanol	17.27	

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		furfural	1.12	
		isobutane	54.08	
		isobutylene	51.83	
		lean oil	31.48	
		methanol	23.32	
		methyl tert-butyl ether	48.89	
		pentane	3.49	
		polyisobutylene	1.19	

- (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<sub>x</sub> - total oxides of nitrogen  
SO<sub>2</sub> - sulfur dioxide  
CO - carbon dioxide  
BD - 1,3-butadiene  
HRVOC - BD, butenes, ethylene, and propylene  
PM - total particulate matter, suspended in the atmosphere, including PM<sub>10</sub> and PM<sub>2.5</sub>, as represented  
PM<sub>10</sub> - total particulate matter equal to or less than 10 microns in diameter, including PM<sub>2.5</sub>, as represented
- (4) Compliance with annual emission limits (tons per year) is based on a 12-month rolling period.
- (5) Emission rate is an estimate and is enforceable through compliance with the applicable special condition(s) and permit application representations.
- (6) Annual emissions of BD and total HRVOCs are limited as indicated. The allowable emission rate listed for HRVOCs from this EPN are included in the total VOC emission rate. The HRVOC CAP of 15 tons per year includes the BD emission rate.
- (7) The annual emissions of BD from all the cooling towers are limited as indicated. The VOC emission rate of each cooling tower includes BD. While short-term BD emission rates are not established, the hourly VOC emission rate of each cooling tower establishes a maximum BD short-term rate.

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Date: May 25, 2011