EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

Permit Number 21101

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	TPY**
E-01-1544	Cracking Furnaces BA-101/102 Common Stack	CO	82.54	361.54
		NO_x	22.35	97.90
		PM_{10}	2.08	9.12
		SO_2 (8)	3.91	17.14
		SO_2 (9)	10.74	14.52
		VOC	2.14	9.39
E-01A-1544	Economizer (5) (10)	CO	508.27	2226.24
		NO_x	149.91	657.00
		PM_{10}	13.67	59.87
		SO_2 (8)	25.69	112.53
		SO_2 (9)	70.53	95.34
		VOC	10.21	44.72
	(11)	CO	508.27	2226.24
		NO_x	143.59	629.00
		PM_{10}	13.67	59.87
		SO_2 (8)	25.69	112.53
		SO_2 (9)	70.53	95.34
		VOC	10.21	44.72
E-02-1544	Cracking Furnaces BA-103/104 Common Stack	CO	82.54	361.54
		NO_x	22.35	97.90
		PM_{10}	2.08	9.12
		SO_2 (8)	3.91	17.14
		SO_2 (9)	10.74	14.52
		VOC	2.14	9.39

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AIR CONTAMINANTS DATA

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates * lb/hr	TPY**
E-02A-1544	Cracking Furnace BA-115	CO	150.00	42.40
		NO_x	130.00	95.40
		PM_{10}	1.80	7.90
		SO_2 (8)	3.39	14.85
		SO_2 (9)	9.30	12.58
		VOC	1.86	8.13
E-03-1544	Cracking Furnaces BA-105/106 Common Stack	CO	82.54	361.54
		NO_x	22.35	97.90
		PM_{10}	2.08	9.12
		SO_2 (8)	3.91	17.14
		SO_2 (9)	10.74	14.52
		VOC	2.14	9.39
E-03A-1544	Cracking Furnace BA-116	CO	150.00	42.40
		NO_x	130.00	95.40
		PM_{10}	1.80	7.90
		SO_2 (8)	3.39	14.85
		SO_2 (9)	9.30	12.58
		VOC	1.86	8.13
E-04-1544	Cracking Furnaces BA-107/108 Common Stack	CO	82.54	361.54
		NO_x	22.35	97.90
		PM_{10}	2.08	9.12
		SO_2 (8)	3.91	17.14
		SO_2 (9)	10.74	14.52
		VOC	2.14	9.39
E-04A-1544	Cracking Furnace BA-117	CO	150.00	42.40
		NO_x	130.00	95.40
		PM_{10}	1.80	7.90
		SO_2 (8)	3.39	14.85
		SO_2 (9)	9.30	12.58
		VOC	1.86	8.13
E-05-1544	Cracking Furnaces	CO	82.54	361.54

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**
	BA-109/110 Common Stack	NO_x	22.35	97.90
		PM_{10}	2.08	9.12
		SO_2 (8)	3.91	17.14
		SO_2 (9)	10.74	14.52
		VOC	2.14	9.39
E-05A-1544	Cracking Furnace	CO	150.00	42.40
	BA-118	NO_x	130.00	95.40
		PM_{10}	1.80	7.90
		SO_2 (8)	3.39	14.85
		SO_2 (9)	9.30	12.58
		VOC	1.86	8.13
E-06-1544	Cracking Furnaces	CO	82.54	361.54
	BA-111/112 Common Stack	NO_x	22.35	97.90
		PM_{10}	2.08	9.12
		SO_2 (8)	3.91	17.14
		SO_2 (9)	10.74	14.52
		VOC	2.14	9.39
E-06A-1544	Decoke Drum	CO	114.0	35.08
		PM_{10}	13.67	1.29
E-07-1544	Steam Superheater BA-113 (6)	CO	13.01	56.99
	(158 MMBtu/hr heat input)	NO_x	15.80	69.20
		PM_{10}	1.18	5.16
		SO_2 (8)	2.21	9.69
		SO_2 (9)	6.08	8.21
		VOC 1.21	5.31	
	(158 MMBtu/hr heat input) (7)	CO	13.01	56.99
		NO_x	9.48	41.52
		PM_{10}	1.18	5.16

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 (8)	2.21	9.69
		SO_2 (9)	6.08	8.21
		VOC 1.21	5.31	
E-08-1544	Heater BA-301	CO	1.41	6.17
	(17.1 MMBtu/hr heat input)	NO_x	1.68	7.35
		PM_{10}	0.13	0.56
		SO_2 (8)	0.24	1.05
		SO_2 (9)	0.66	0.89
		VOC	0.14	0.58
E-09-1544	Heater BA-401	CO	1.45	6.35
	(17.6 MMBtu/hr heat input)	NO_x	1.73	7.56
		PM_{10}	0.13	0.57
		SO_2 (8)	0.25	1.08
		SO_2 (9)	0.68	0.92
		VOC	0.14	0.59
E-10-1544	Diesel Engine - Primary	CO	1.08	4.72
		NO_x 6.59	28.87	
		PM_{10}	0.14	0.59
		SO_2	0.16	0.72
		VOC	0.40	1.74
E-11-1544	Diesel Engine - Secondary	CO	0.58	2.56
		NO_x 6.31	27.65	
		PM_{10}	0.08	0.35
		SO_2	0.15	0.66
		VOC	0.09	0.39

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**
E-24-FLARE	Process Flare (continuous)	CO	2.66	11.65
		NO_x	0.49	2.14
		VOC	5.40	23.65
E-137-CT	Cooling Tower	VOC	5.73	25.04
E-ANVENTS-1544	Eleven Analyzer Vents	VOC	0.15	0.64
EU-CATSTACK	Silencer Stack	CO	6.0	1.44
		PM_{10}	0.25	0.05
		SO_2	5.83	1.40
		VOC	1.00	0.24
T-FB-203	Wash Oil Tank	VOC	2.31	0.24
F-1544	Process Fugitives (4)	BD	0.14	0.59
VOC		16.91	74.07	

(1) Emission point identification - either specific equipment designation or emission point number from plot plan.
(2) Specific point source names. For fugitive sources use area name or fugitive source name.
(3) BD - butadiene
CO - carbon monoxide
NO_x - total oxides of nitrogen
PM_{10} - particulate matter (PM) equal to or less than 10 microns in diameter. Where PM is not listed, it shall be assumed that no PM greater than or equal to 10 microns is emitted.
SO_2 - sulfur dioxide
VOC - volatile organic compounds as defined in Title 30 Texas of Administrative Code §

101.1 Butadiene is not included as a VOC.

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

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

(5) Total emissions from any combination of Emission Points Nos. (EPNs) E-01-1544, E-02-1544, E-03-1544, E-04-1544, E-05-1544, E-06-1544, E-07-1544, and E-01A-1544 shall not exceed the following prior to the staged combustion burner retrofit on the BA-113 Steam Superheater:

	pounds per hour (lbs/hr)	TPY
CO	508.27	2226.24
NO_x	149.91	657.00
PM_{10}	13.67	59.87
SO_2 (8)	25.69	112.53
SO_2 (9)	70.53	95.34
VOC	10.21	44.72

Total emissions from any combination of EPNs E-01-1544, E-02-1544, E-03-1544, E-04-1544, E-05-1544, E-06-1544, E-07-1544, and E-01A-1544 shall not exceed the following after the staged combustion burner retrofit on the BA-113 Steam Superheater:

	lbs/hr	TPY
CO	508.27	2226.24
NO_x	143.59	629.00
PM_{10}	13.67	59.87
SO_2 (8)	25.69	112.53
SO_2 (9)	70.53	95.34
VOC	10.21	44.72

(6) The emissions prior to retrofit.
(7) The emissions after the retrofit.
(8) Natural gas
(9) Refinery fuel gas
(10) The emissions prior to retrofit on BA-113 Steam Superheater.
(11) The emissions after the retrofit on BA-113 Steam Superheater.

* 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.

Dated_____