Prevention of Significant Deterioration Permit Application

TCEQ Air Quality Permit Nos. 38754, PSDTX324M14
HOC Reconfiguration Project

Valero Refining – Texas, LP
Bill Greehey Refinery – West Plant
Corpus Christi, Nueces County, Texas

CN600127468
RN100214386

September 30, 2021

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Section 1
Project Information

1.1 Introduction

Valero Refining Texas, LP (Valero) operates the Bill Greehey Refineries located in Corpus Christi, Nueces County. The Bill Greehey Refineries consist of two plants, the West Plant and the East Plant. Operation of the West Plant is currently authorized under Permit Nos. 38754, PSDTX324M14, and various Permit by Rule (PBR) and Standard Permit authorizations. Permit 38754 (“the permit”) is a Subchapter B construction permit.

Valero plans to undertake changes to the West Plant Heavy Oil Cracker (HOC), a type of fluidized catalytic cracking (FCC) unit. Due to the integrated nature of refinery operations, the project (“HOC Reconfiguration Project”) will necessitate certain operational changes at other existing process units and will entail the construction of a new utility steam boiler, a new cooling tower, a new gas plant, a new sour water stripper, a new liquefied petroleum gas (LPG) Merox Treating Unit, a new Selective Hydrogenation Unit (SHU), a new C3/C4 Splitter Tower, and two new butane/butylene bullet tanks.

Maintenance, startup and shutdown (MSS) activities for all process units at the West Plant are currently authorized by permit, and existing MSS activities will not be affected by the project. MSS activities associated with the new equipment (e.g., new boiler, new gas plant) will be authorized as part of this application.

The HOC Reconfiguration Project constitutes a major modification for Prevention of Significant Deterioration (PSD) permitting purposes, and this permit application contains the information required for a PSD permit application.

1.2 Project Description

The HOC Unit is a type of FCC unit consisting of a reactor-riser, regenerator, air blowers, catalyst recovery equipment, downstream fractionation equipment and associated air pollution control equipment. The HOC Reconfiguration Project will add a secondary reactor-riser and a new gas plant (and related equipment) for upgrading cat naphtha into light olefins and improving overall yields of high-octane gasoline blendstocks. The details of the project are discussed in Section 4.

1.3 Project Air Permit Requirements

The project includes physical changes to the existing HOC regenerator which will result in emissions increases. The HOC unit is modified for purposes of major and minor NSR.

When emissions increases from new and modified/affected sources are considered, the HOC Reconfiguration Project is a major modification, and substantive PSD requirements (i.e., control technology review and air quality analysis) apply for oxides of nitrogen (NO_X), carbon monoxide (CO), volatile organic compounds (VOC), sulfur dioxide (SO_2), particulate matter (PM, PM_{10}, $PM_{2.5}$), and sulfuric acid mist (H_2SO_4). Minor NSR requirements apply for hydrogen sulfide (H_2S), hydrogen cyanide (HCN) and ammonia (NH_3). Finally, PSD BACT requirements apply for greenhouse gases (GHG).

This application includes a detailed control technology review for all pollutants listed above following the process specified in TCEQ Publication *Pollution Control: How to Conduct a Pollution Control Evaluation*.[1] The application also includes a PSD modeling protocol and TCEQ Electronic Modeling Evaluation Workbook (EMEW).

1.4 Application Organization

The remainder of the application is organized as follows:

Section 2 references the required completed administrative forms, the application fee payment information, and PSD Tables 2F and 3F.

Section 3 includes location information for the project, including an area map and a plot plan.

Section 4 contains a process description, a more detailed description of the proposed project, and process flow diagrams depicting units affected by the project.

Section 5 explains the methods for estimating emission rates.

Section 6 presents the BACT analysis for the facilities included in this application.

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[1] Publication APDG 6110. January 2011.

Section 7 addresses the applicability of Prevention of Significant Deterioration (PSD) permitting requirements.

Section 8 discusses applicability and substantive requirements of select NSPS and NESHAP standards which affect process units impacted by the project.

Section 9 addresses General Application Requirements, including state and federal air regulations to the facilities included in this application.

Appendices A, B contain emission calculations for sources associated with the project and RBLC entries consulted, respectively.

The required PSD modeling protocol is submitted under separate cover.

Table 1-1
Allowable Emission Rate Change Summary
HOC Reconfiguration Project
Valero Refining - Texas - West Plant Refinery, Corpus Christi

EPN(s)	FIN(s)	Source Description	CO Current (lb/hr)	CO Proposed (lb/hr)	NO_X Current (lb/hr)	NO_X Proposed (lb/hr)	PM Current (lb/hr)	PM Proposed (lb/hr)	PM_{10} Current (lb/hr)	PM_{10} Proposed (lb/hr)
121	24-ST-01	Heavy Oil Cracker (HOC) Belco Scrubber	889.96	958.40	356.20	384.12	120.32	140.00	120.32	140.00
121/ 30-B-05	MEROX	New Merox Vent								
30-B-05	30-B-05	Boiler	0	33.48	0.00	7.16	0.00	3.56	0	3.56
30-B-05	30-B-05	Boiler (MSS)	0	167.39	0.00	71.61				
HOC-PP-CT	HOC-PP-CT	Cooling Tower					0	0.78	0	0.18
CAS-HOCPP	CAS-HOCPP	HOC Gas Plant Wastewater Lift Statation								
21/22F	HOC-FUG	HOC Unit Fugitives								
42F	SWS-FUG	Sour Wtr, Stripper Fugitives								
FUG-CAP	Various	Piping Fugitives								
HOC-CT	122	HOC Cooling Tower					17.71	3.54	16.82	3.36
		Total:	890.0	1159.3	356.2	462.9	138.0	147.9	137.1	147.1
		Change in Allowable (lb/hr):		269.3		106.7		9.8		10.0

EPN(s)	FIN(s)	Source Description	CO Current (tpy)	CO Proposed (tpy)	NO_X Current (tpy)	NO_X Proposed (tpy)	PM Current (tpy)	PM Proposed (tpy)	PM_{10} Current (tpy)	PM_{10} Proposed (tpy)
121	24-ST-01	Heavy Oil Cracker (HOC) Belco Scrubber	1470.33	1559.15	473.81	473.81	527.00	569.40	527	569.40
121/ 30-B-05	MEROX	New Merox Vent								
30-B-05	30-B-05	Boiler	0	70.84	0.00	30.14	0.00	14.16	0	14.16
HOC-PP-CT	HOC-PP-CT	Cooling Tower					0	3.42	0	0.81
MSS Caps	MSS Caps	MSS Caps	53.9	94.64	11.05	18.03	1.41	2.96	1.31	2.86
CAS-HOCPP	CAS-HOCPP	HOC Gas Plant Wastewater Lift Statation								
21/22F	HOC-FUG	HOC Unit Fugitives								
42F	SWS-FUG	Sour Wtr, Stripper Fugitives								
FUG-CAP	Various	Piping Fugitives								
HOC-CT	122	HOC Cooling Tower					65.86	13.17	62.58	12.52
		Total:	1524.2	1724.6	484.9	522.0	594.3	603.1	590.9	599.8
		Change in Allowable (tpy):		200.4		37.1		8.8		8.9

Table 1-1

Allowable Emission Rate Change Summary

HOC Reconfiguration Project

Valero Refining - Texas - West Plant Refinery, Corpus Christi

EPN(s)	FIN(s)	Source Description	$PM_{2.5}$ Current (lb/hr)	$PM_{2.5}$ Proposed (lb/hr)	SO_2 Current (lb/hr)	SO_2 Proposed (lb/hr)	VOC Current (lb/hr)	VOC Proposed (lb/hr)	H2SO4 Current (lb/hr)	H2SO4 Proposed (lb/hr)
121	24-ST-01	Heavy Oil Cracker (HOC) Belco Scrubber	120.32	140.00	203.53	219.22	28.02	30.18	49.00	49.00
121/ 30-B-05	MEROX	New Merox Vent			0	3.86	0	0.24		
30-B-05	30-B-05	Boiler	0	3.56	0	7.70	0	2.57		
30-B-05	30-B-05	Boiler (MSS)								
HOC-PP-CT	HOC-PP-CT	Cooling Tower	0	0.001			0	1.09		
CAS-HOCPP	CAS-HOCPP	HOC Gas Plant Wastewater Lift Statation					0	0.005		
21/22F	HOC-FUG	HOC Unit Fugitives								
42F	SWS-FUG	Sour Wtr, Stripper Fugitives								
FUG-CAP	Various	Piping Fugitives					101.17	107.87		
HOC-CT	122	HOC Cooling Tower	2.63	0.53			5.67	5.67		
		Total:	123.0	144.1	203.5	230.8	134.9	147.6	49.0	49.0
		Change in Allowable (lb/hr):		21.1		27.3		12.8		0.0

EPN(s)	FIN(s)	Source Description	$PM_{2.5}$ Current (tpy)	$PM_{2.5}$ Proposed (tpy)	SO_2 Current (tpy)	SO_2 Proposed (tpy)	VOC Current (tpy)	VOC Proposed (tpy)	H2SO4 Current (tpy)	H2SO4 Proposed (tpy)
121	24-ST-01	Heavy Oil Cracker (HOC) Belco Scrubber	527	569.40	420.09	420.12	115.53	122.74	214.62	199.30
121/ 30-B-05	MEROX	New Merox Vent			0	16.91	0	1.05		
30-B-05	30-B-05	Boiler	0	14.16	0	21.15	0	10.25	0	0.00
HOC-PP-CT	HOC-PP-CT	Cooling Tower	0	0.01			0	4.78		
MSS Caps	MSS Caps	MSS Caps	1.29	2.84	37.33	38.99	44.83	45.22		
CAS-HOCPP	CAS-HOCPP	HOC Gas Plant Wastewater Lift Statation					0	0.02		
21/22F	HOC-FUG	HOC Unit Fugitives								
42F	SWS-FUG	Sour Wtr, Stripper Fugitives								
FUG-CAP	Various	Piping Fugitives					443.11	472.44		
HOC-CT	122	HOC Cooling Tower	9.78	1.96			21.09	21.09		
		Total:	538.1	588.4	457.4	497.2	624.6	677.6	214.6	199.3
		Change in Allowable (tpy):		50.3		39.8		53.0		-15.3

Table 1-1
Allowable Emission Rate Change Summary
HOC Reconfiguration Project
Valero Refining - Texas - West Plant Refinery, Corpus Christi

EPN(s)	FIN(s)	Source Description	HCN Current (lb/hr)	HCN Proposed (lb/hr)	NH3 Current (lb/hr)	NH3 Proposed (lb/hr)	H2S Current (lb/hr)	H2S Proposed (lb/hr)
121	24-ST-01	Heavy Oil Cracker (HOC) Belco Scrubber	80.47	80.47	0	4.84		
121/ 30-B-05	MEROX	New Merox Vent					0	0.001
30-B-05	30-B-05	Boiler			0	2.18		
30-B-05	30-B-05	Boiler (MSS)						
HOC-PP-CT	HOC-PP-CT	Cooling Tower						
CAS-HOCPP	CAS-HOCPP	HOC Gas Plant Wastewater Lift Statation						
21/22F	HOC-FUG	HOC Unit Fugitives					0.03	0.03
42F	SWS-FUG	Sour Wtr, Stripper Fugitives					<0.01	<0.01
FUG-CAP	Various	Piping Fugitives			0	0.010	0	0.01
HOC-CT	122	HOC Cooling Tower						
		Total:	80.5	80.5	0.0	7.0	0.0	0.0
		Change in Allowable (lb/hr):		0.0		7.0		0.0

EPN(s)	FIN(s)	Source Description	HCN Current (tpy)	HCN Proposed (tpy)	NH3 Current (tpy)	NH3 Proposed (tpy)	H2S Current (tpy)	H2S Proposed (tpy)
121	24-ST-01	Heavy Oil Cracker (HOC) Belco Scrubber	320.4	320.40	0	17.88		
121/ 30-B-05	MEROX	New Merox Vent					0	0.004
30-B-05	30-B-05	Boiler	0	0.00	0	8.68		
HOC-PP-CT	HOC-PP-CT	Cooling Tower						
MSS Caps	MSS Caps	MSS Caps					0.22	0.22
CAS-HOCPP	CAS-HOCPP	HOC Gas Plant Wastewater Lift Statation						
21/22F	HOC-FUG	HOC Unit Fugitives					0.12	0.14
42F	SWS-FUG	Sour Wtr, Stripper Fugitives					0.02	0.02
FUG-CAP	Various	Piping Fugitives			0	0.06	0	0.06
HOC-CT	122	HOC Cooling Tower						
		Total:	320.4	320.4	0.0	26.6	0.4	0.4
		Change in Allowable (tpy):		0.0		26.6		0.1

Section 2
Administrative Forms

The following workbooks have been submitted via STEERS:

- Form PI-1 General Application, Version 4.1
- Common Fugitive Calculation Workbook, Version 2.0

This section contains the following forms and information:

- TCEQ Tables 2F and 3F.

The maximum fee of $75,000 has been paid for this permit amendment application. Valero is requesting expedited processing of the permit application; therefore, a separate payment of $20,000 is being made for the surcharge for expedited processing of this permit application. The permit application fee and the expedited processing fee have been submitted through the TCEQ ePay system and the corresponding voucher numbers are 530714 and 530715.

TABLE 2F
PROJECT EMISSION INCREASE

Pollutant[1]:	**VOC**	**Permit No.:**	**38754 / PSD-TX-324**
Baseline Period:	**2019 / 2020**	**Project Name:**	**HOC Reconfiguration Project**

Affected or Modified Facilities[2]				Permit No.	Actual Emissions[3] (tons/yr)	A Baseline Emissions[4] (tons/yr)	B Proposed Emissions[5] (tons/yr)	Projected Actual Emissions (tons/yr)	Difference (B-A)[6] (tons/yr)	Correction[7] (tons/yr)	Project Increase[8] (tons/yr)
	FIN	EPN	Facility Name								
1	24-ST-01	121	Heavy Oil Cracker (HOC) Belco Scrubber	38754	99.11	99.11	122.74		23.63	-	23.63
2	MEROX	121/ 30-B-05	New Merox Vent		-	-	1.05		1.05	-	1.05
3	30-B-05	30-B-05	Boiler	38754	-	-	10.25		10.25	-	10.25
4	HOC-PP-CT	HOC-PP-CT	Cooling Tower	38754	-	-	4.78		4.78	-	4.78
5	Various	FUG-CAP	Piping Fugitives	38754	-	-			-	-	29.33
6	70-TK-110	17	Gasoline Blendstock Tank (70-TK-110)	135590							0.15
7	83-TK-25	187	Sour Water Tank	38754							0.18
8	50-TK-64/65	164/165	Iso-octene Tanks	135590							0.10
9	70-TK-105	13	Distillate Storage Tanks	135590							0.49
10	70-TK-95/96/97/98	7/8/34/35	Distillate Storage Tanks	135590							0.36
11	SRU, SCOT	121	Sulfur Recovery	38754							0.26
12	13-H-01A. 13-H-01B, 13-H-01C	118	SMR (Heater Combustion)	38754							0.63
13	47-H-01. 47-H-02, 47-H-03, 47-H-04	150	HCU Heaters	38754	2.87	2.87	4.38		1.51		1.51
14	Various (See Table B-8)	Various (See Table B-8)	Wastewater Treatment	38754							0.76
15	SHIP FUG	SHIP-FUG	Loading - Ship Fugitives	38754							0.96
16	VRU	VRU	Loading - MVRU	38754							1.30
17	LOADINGFUG	TRUCKFUG	Loading - Truck Fugitives	38754							0.16
18	T-RACK	TRUCKCOMB	Loading - Truck Combustor	38754							4.89

19	MSS Caps	MSS Caps	Project Total:	38754							0.39
20											
										Page Subtotal[9]:	**81.17**
										Project Total:	**81.17**

[1] Individual Table 2Fs should be used to summarize the project emission increase for each criteria pollutant

[2] Emission Point Number as designated in NSR Permit or Emissions Inventory

[3] All records and calculations for these values must be available upon request

[4] Correct actual emissions for currently applicable rule or permit requirements, and periods of non-compliance. These corrections, as well as any MSS previously demonstrated under 30 TAC 101, should be explained in the Table 2F supplement

[5] If projected actual emission is used it must be noted in the next column and the basis for the projection identified in the Table 2F supplement

[6] Proposed Emissions (column B) minus Baseline Emissions (column A)

[7] Correction made to emission increase for what portion could have been accommodated during the baseline period. The justification and basis for this estimate must be provided in the Table 2F supplement

[8] Obtained by subtracting the correction from the difference. Must be a positive number.

[9] Sum all values for this page.

TABLE 2F
PROJECT EMISSION INCREASE

Pollutant[1]:	**NOx**	**Permit No.:**	**38754 / PSD-TX-324**
Baseline Period:	**2019 / 2020**	**Project Name:**	**HOC Reconfiguration Project**

	Affected or Modified Facilities[2]			Permit No.	Actual Emissions[3] (tons/yr)	A Baseline Emissions[4] (tons/yr)	B Proposed Emissions[5] (tons/yr)	Projected Actual Emissions (tons/yr)	Difference (B-A)[6] (tons/yr)	Correction[7] (tons/yr)	Project Increase[8] (tons/yr)
	FIN	EPN	Facility Name								
1	24-ST-01	121	Heavy Oil Cracker (HOC) Belco Scrubber	38754	302.72	302.72	473.81		171.09	-	171.09
2	30-B-05	30-B-05	Boiler	38754	-	-	30.14		30.14	-	30.14
3	HOC-PP-CT	HOC-PP-CT	Cooling Tower	38754	-	-	-		-	-	-
4	Various	FUG-CAP	Piping Fugitives	38754	-	-	-		-	-	-
5	SRU, SCOT	121	Sulfur Recovery	38754		-			-	-	3.70
6	13-H-01A. 13-H-01B, 13-H-01C	118	SMR (Heater Combustion)	38754							6.60
7	47-H-01. 47-H-02, 47-H-03, 47-H-04	150	HCU Heaters	38754	16.21	16.21	48.76		32.55		32.55
8	T-RACK	TRUCKCOMB	Loading - Truck Combustor	38754							0.85
9	Various	Various (See Table B-8)	Wastewater Treatment	38754		-			-	-	0.42
10	MSS Caps	MSS Caps	MSS	38754							6.98
										Page Subtotal[9]:	**252.34**
										Project Total:	**252.34**

[1] Individual Table 2Fs should be used to summarize the project emission increase for each criteria pollutant

[2] Emission Point Number as designated in NSR Permit or Emissions Inventory

[3] All records and calculations for these values must be available upon request

[4] Correct actual emissions for currently applicable rule or permit requirements, and periods of non-compliance. These corrections, as well as any MSS previously demonstrated under 30 TAC 101, should be explained in the Table 2F supplement

[5] If projected actual emission is used it must be noted in the next column and the basis for the projection identified in the Table 2F supplement

[6] Proposed Emissions (column B) minus Baseline Emissions (column A)

[7] Correction made to emission increase for what portion could have been accommodated during the baseline period. The justification and basis for this estimate must be provided in the Table 2F supplement

[8] Obtained by subtracting the correction from the difference. Must be a positive number.

[9] Sum all values for this page.

TABLE 2F
PROJECT EMISSION INCREASE

Pollutant[1]:	CO	Permit No.:	38754 / PSD-TX-324
Baseline Period:	2019 / 2020	Project Name:	HOC Reconfiguration Project

	Affected or Modified Facilities[2] FIN	EPN	Facility Name	Permit No.	Actual Emissions[3] (tons/yr)	A Baseline Emissions[4] (tons/yr)	B Proposed Emissions[5] (tons/yr)	Projected Actual Emissions (tons/yr)	Difference (B-A)[6] (tons/yr)	Correction[7] (tons/yr)	Project Increase[8] (tons/yr)
1	24-ST-01	121	Heavy Oil Cracker (HOC) Belco Scrubber	38754	1,402.67	1,402.67	1,559.15		156.48	-	156.48
2	30-B-05	30-B-05	Boiler	38754	-	-	70.84		70.84	-	70.84
3	HOC-PP-CT	HOC-PP-CT	Cooling Tower	38754	-	-	-		-	-	-
4	Various	FUG-CAP	Piping Fugitives	38754	-	-	-		-	-	-
5	SRU, SCOT	121	Sulfur Recovery	38754							16.91
6	13-H-01A. 13-H-01B, 13-H-01C	118	SMR (Heater Combustion)	38754							4.09
7	47-H-01. 47-H-02, 47-H-03, 47-H-04	150	HCU Heaters	38754	0.14	0.14	24.38		24.24		24.24
8	T-RACK	TRUCKCOMB	Loading - Truck Combustor	38754		-			-	-	1.70
9	Various	Various (See Table B-8)	Wastewater Treatment	38754		-			-	-	1.74
10	MSS Caps	MSS Caps	MSS	38754		-			-	-	40.74
										Page Subtotal[9]:	316.74
										Project Total:	316.74

[1] Individual Table 2Fs should be used to summarize the project emission increase for each criteria pollutant

[2] Emission Point Number as designated in NSR Permit or Emissions Inventory

[3] All records and calculations for these values must be available upon request

[4] Correct actual emissions for currently applicable rule or permit requirements, and periods of non-compliance. These corrections, as well as any MSS previously demonstrated under 30 TAC 101, should be explained in the Table 2F supplement

[5] If projected actual emission is used it must be noted in the next column and the basis for the projection identified in the Table 2F supplement

[6] Proposed Emissions (column B) minus Baseline Emissions (column A)

[7] Correction made to emission increase for what portion could have been accommodated during the baseline period. The justification and basis for this estimate must be provided in the Table 2F supplement

[8] Obtained by subtracting the correction from the difference. Must be a positive number.

[9] Sum all values for this page.

TABLE 2F
PROJECT EMISSION INCREASE

Pollutant[1]:	SO2	Permit No.:	38754 / PSD-TX-324
Baseline Period:	2019 / 2020	Project Name:	HOC Reconfiguration Project

Affected or Modified Facilities[2]				Permit No.	Actual Emissions[3] (tons/yr)	A Baseline Emissions[4] (tons/yr)	B Proposed Emissions[5] (tons/yr)	Projected Actual Emissions (tons/yr)	Difference (B-A)[6] (tons/yr)	Correction[7] (tons/yr)	Project Increase[8] (tons/yr)
	FIN	EPN	Facility Name								
1	24-ST-01	121	Heavy Oil Cracker (HOC) Belco Scrubber	38754	47.01	47.01	420.12		373.11	-	373.11
2	MEROX	121/ 30-B-05	New Merox Vent	38754	-	-	16.91		16.91	-	16.91
3	30-B-05	30-B-05	Boiler	38754	-	-	21.15		21.15	-	21.15
4	Various	FUG-CAP	Piping Fugitives	38754	-	-	-		-	-	-
5	SRU, SCOT	121	Sulfur Recovery	38754							7.45
6	13-H-01A. 13-H-01B, 13-H-01C	118	SMR (Heater Combustion)	38754							0.09
7	47-H-01. 47-H-02, 47-H-03, 47-H-04	150	HCU Heaters	38754	0.81	0.81	8.63		7.82		7.82
8	T-RACK	TRUCKCOMB	Loading - Truck Combustor	38754		-			-	-	0.002
9	Various	Various (See Table B-8)	Wastewater Treatment	38754		-			-	-	0.03
10	MSS Caps	MSS Caps	MSS	38754		-			-	-	1.66
										Page Subtotal[9]:	428.23
										Project Total:	428.23

[1] Individual Table 2Fs should be used to summarize the project emission increase for each criteria pollutant

[2] Emission Point Number as designated in NSR Permit or Emissions Inventory

[3] All records and calculations for these values must be available upon request

[4] Correct actual emissions for currently applicable rule or permit requirements, and periods of non-compliance. These corrections, as well as any MSS previously demonstrated under 30 TAC 101, should be explained in the Table 2F supplement

[5] If projected actual emission is used it must be noted in the next column and the basis for the projection identified in the Table 2F supplement

[6] Proposed Emissions (column B) minus Baseline Emissions (column A)

[7] Correction made to emission increase for what portion could have been accommodated during the baseline period. The justification and basis for this estimate must be provided in the Table 2F supplement

[8] Obtained by subtracting the correction from the difference. Must be a positive number.

[9] Sum all values for this page.

TABLE 2F
PROJECT EMISSION INCREASE

Pollutant[1]:	**PM**	**Permit No.:**	**38754 / PSD-TX-324**
Baseline Period:	**2019 / 2020**	**Project Name:**	**HOC Reconfiguration Project**

Affected or Modified Facilities[2]				Permit No.	Actual Emissions[3] (tons/yr)	A Baseline Emissions[4] (tons/yr)	B Proposed Emissions[5] (tons/yr)	Projected Actual Emissions (tons/yr)	Difference (B-A)[6] (tons/yr)	Correction[7] (tons/yr)	Project Increase[8] (tons/yr)
	FIN	EPN	Facility Name								
1	24-ST-01	121	Heavy Oil Cracker (HOC) Belco Scrubber	38754	362.89	362.89	569.40		206.51	-	206.51
2	30-B-05	30-B-05	Boiler	38754	-	-	14.16		14.16	-	14.16
3	HOC-PP-CT	HOC-PP-CT	Cooling Tower	38754	-	-	3.42		3.42	-	3.42
4	Various	FUG-CAP	Piping Fugitives	38754	-	-	-		-	-	-
5	SRU, SCOT	121	Sulfur Recovery	38754							8.40
6	13-H-01A. 13-H-01B, 13-H-01C	118	SMR (Heater Combustion)	38754							0.83
7	47-H-01. 47-H-02, 47-H-03, 47-H-04	150	HCU Heaters	38754	3.73	3.73	6.06		2.33		2.33
8	T-RACK	TRUCKCOMB	Loading - Truck Combustor	38754		-			-	-	0.03
9	Various	Various (See Table B-8)	Wastewater Treatment	38754		-			-	-	-
10	MSS Caps	MSS Caps	MSS	38754		-			-	-	1.55
										Page Subtotal[9]:	**237.22**
										Project Total:	**237.22**

[1] Individual Table 2Fs should be used to summarize the project emission increase for each criteria pollutant

[2] Emission Point Number as designated in NSR Permit or Emissions Inventory

[3] All records and calculations for these values must be available upon request

[4] Correct actual emissions for currently applicable rule or permit requirements, and periods of non-compliance. These corrections, as well as any MSS previously demonstrated under 30 TAC 101, should be

[5] If projected actual emission is used it must be noted in the next column and the basis for the projection identified in the Table 2F supplement

[6] Proposed Emissions (column B) minus Baseline Emissions (column A)

[7] Correction made to emission increase for what portion could have been accommodated during the baseline period. The justification and basis for this estimate must be provided in the Table 2F supplement

[8] Obtained by subtracting the correction from the difference. Must be a positive number.

[9] Sum all values for this page.

TABLE 2F
PROJECT EMISSION INCREASE

Pollutant[1]:	**PM10**	**Permit No.:**	**38754 / PSD-TX-324**
Baseline Period:	**2019 / 2020**	**Project Name:**	**HOC Reconfiguration Project**

	Affected or Modified Facilities[2]			Permit No.	Actual Emissions[3] (tons/yr)	A Baseline Emissions[4] (tons/yr)	B Proposed Emissions[5] (tons/yr)	Projected Actual Emissions (tons/yr)	Difference (B-A)[6] (tons/yr)	Correction[7] (tons/yr)	Project Increase[8] (tons/yr)
	FIN	EPN	Facility Name								
1	24-ST-01	121	Heavy Oil Cracker (HOC) Belco Scrubber	38754	362.89	362.89	569.40		206.51	-	206.51
2	30-B-05	30-B-05	Boiler	38754	-	-	14.16		14.16	-	14.16
3	HOC-PP-CT	HOC-PP-CT	Cooling Tower	38754	-	-	0.81		0.81	-	0.81
4	Various	FUG-CAP	Piping Fugitives	38754	-	-	-		-	-	-
5	SRU, SCOT	121	Sulfur Recovery	38754							8.40
6	13-H-01A. 13-H-01B, 13-H-01C	118	SMR (Heater Combustion)	38754							0.83
7	47-H-01. 47-H-02, 47-H-03, 47-H-04	150	HCU Heaters	38754	3.73	3.73	6.06		2.33		2.33
8	T-RACK	TRUCKCOMB	Loading - Truck Combustor	38754		-			-	-	0.03
9	Various	Various (See Table B-8)	Wastewater Treatment	38754		-			-	-	-
10	MSS Caps	MSS Caps	MSS	38754		-			-	-	1.55
										Page Subtotal[9]:	**234.61**
										Project Total:	**234.61**

[1] Individual Table 2Fs should be used to summarize the project emission increase for each criteria pollutant

[2] Emission Point Number as designated in NSR Permit or Emissions Inventory

[3] All records and calculations for these values must be available upon request

[4] Correct actual emissions for currently applicable rule or permit requirements, and periods of non-compliance. These corrections, as well as any MSS previously demonstrated under 30 TAC 101, should be explained in the Table 2F supplement

[5] If projected actual emission is used it must be noted in the next column and the basis for the projection identified in the Table 2F supplement

[6] Proposed Emissions (column B) minus Baseline Emissions (column A)

[7] Correction made to emission increase for what portion could have been accommodated during the baseline period. The justification and basis for this estimate must be provided in the Table 2F supplement

[8] Obtained by subtracting the correction from the difference. Must be a positive number.

[9] Sum all values for this page.

TABLE 2F
PROJECT EMISSION INCREASE

Pollutant[1]:	PM2.5	Permit No.:	38754 / PSD-TX-324
Baseline Period:	2019 / 2020	Project Name:	HOC Reconfiguration Project

	Affected or Modified Facilities[2] FIN	EPN	Facility Name	Permit No.	Actual Emissions[3] (tons/yr)	A Baseline Emissions[4] (tons/yr)	B Proposed Emissions[5] (tons/yr)	Projected Actual Emissions (tons/yr)	Difference (B-A)[6] (tons/yr)	Correction[7] (tons/yr)	Project Increase[8] (tons/yr)
1	24-ST-01	121	Heavy Oil Cracker (HOC) Belco Scrubber	38754	362.89	362.89	569.40		206.51	-	206.51
2	30-B-05	30-B-05	Boiler	38754	-	-	14.16		14.16	-	14.16
3	HOC-PP-CT	HOC-PP-CT	Cooling Tower	38754	-	-	0.01		0.01	-	0.01
4	Various	FUG-CAP	Piping Fugitives	38754	-	-	-		-	-	-
5	SRU, SCOT	121	Sulfur Recovery	38754							8.40
6	13-H-01A. 13-H-01B, 13-H-01C	118	SMR (Heater Combustion)	38754							0.83
7	47-H-01. 47-H-02, 47-H-03, 47-H-04	150	HCU Heaters	38754	3.73	3.73	6.06		2.33		2.33
8	T-RACK	TRUCKCOMB	Loading - Truck Combustor	38754		-			-	-	0.03
9	Various	Various (See Table B-8)	Wastewater Treatment	38754		-			-	-	-
10	MSS Caps	MSS Caps	MSS	38754		-			-	-	1.55
										Page Subtotal[9]:	233.81
										Project Total:	233.81

[1] Individual Table 2Fs should be used to summarize the project emission increase for each criteria pollutant

[2] Emission Point Number as designated in NSR Permit or Emissions Inventory

[3] All records and calculations for these values must be available upon request

[4] Correct actual emissions for currently applicable rule or permit requirements, and periods of non-compliance. These corrections, as well as any MSS previously demonstrated under 30 TAC 101, should be explained in the Table 2F supplement

[5] If projected actual emission is used it must be noted in the next column and the basis for the projection identified in the Table 2F supplement

[6] Proposed Emissions (column B) minus Baseline Emissions (column A)

[7] Correction made to emission increase for what portion could have been accommodated during the baseline period. The justification and basis for this estimate must be provided in the Table 2F supplement

[8] Obtained by subtracting the correction from the difference. Must be a positive number.

[9] Sum all values for this page.

TABLE 2F
PROJECT EMISSION INCREASE

Pollutant[1]:	**H2S**	**Permit No.:**	**38754 / PSD-TX-324**
Baseline Period:	**2019 / 2020**	**Project Name:**	**HOC Reconfiguration Project**

	Affected or Modified Facilities[2] FIN	EPN	Facility Name	Permit No.	Actual Emissions[3] (tons/yr)	A Baseline Emissions[4] (tons/yr)	B Proposed Emissions[5] (tons/yr)	Projected Actual Emissions (tons/yr)	Difference (B-A)[6] (tons/yr)	Correction[7] (tons/yr)	Project Increase[8] (tons/yr)
1	MEROX	121/ 30-B-05	MEROX	38754							0.004
2	30-B-05	30-B-05	Boiler	38754							
3	HOC-PP-CT	HOC-PP-CT	Cooling Tower	38754	-	-	-		-	-	-
4	Various	FUG-CAP	Piping Fugitives	38754	-	-	-		-	-	0.056
5	SRU, SCOT	121	Sulfur Recovery	38754							0.50
6	13-H-01A. 13-H-01B, 13-H-01C	118	SMR (Heater Combustion)	38754							
7	47-H-01. 47-H-02, 47-H-03, 47-H-04	150	HCU Heaters	38754							
8	T-RACK	TRUCKCOMB	Loading - Truck Combustor	38754		-			-	-	
9	Various	Various (See Table B-8)	Wastewater Treatment	38754		-			-	-	
10	MSS Caps	MSS Caps	MSS	38754		-			-	-	0.00001
										Page Subtotal[9]:	**0.56**
										Project Total:	**0.56**

[1] Individual Table 2Fs should be used to summarize the project emission increase for each criteria pollutant

[2] Emission Point Number as designated in NSR Permit or Emissions Inventory

[3] All records and calculations for these values must be available upon request

[4] Correct actual emissions for currently applicable rule or permit requirements, and periods of non-compliance. These corrections, as well as any MSS previously demonstrated under 30 TAC 101, should be explained in the Table 2F supplement

[5] If projected actual emission is used it must be noted in the next column and the basis for the projection identified in the Table 2F supplement

[6] Proposed Emissions (column B) minus Baseline Emissions (column A)

[7] Correction made to emission increase for what portion could have been accommodated during the baseline period. The justification and basis for this estimate must be provided in the Table 2F supplement

[8] Obtained by subtracting the correction from the difference. Must be a positive number.

[9] Sum all values for this page.

TABLE 2F
PROJECT EMISSION INCREASE

Pollutant[1]:	H2SO4	Permit No.:	38754 / PSD-TX-324
Baseline Period:	2019 / 2020	Project Name:	HOC Reconfiguration Project

	Affected or Modified Facilities[2] FIN	EPN	Facility Name	Permit No.	Actual Emissions[3] (tons/yr)	A Baseline Emissions[4] (tons/yr)	B Proposed Emissions[5] (tons/yr)	Projected Actual Emissions (tons/yr)	Difference (B-A)[6] (tons/yr)	Correction[7] (tons/yr)	Project Increase[8] (tons/yr)
1	24-ST-01	121	Heavy Oil Cracker (HOC) Belco Scrubber	38754	30.74	30.74	199.30		168.56	-	168.56
2											
3											
4											
5											
6											
7											
8											
9											
10											
										Page Subtotal[9]:	168.56
										Project Total:	168.56

[1] Individual Table 2Fs should be used to summarize the project emission increase for each criteria pollutant

[2] Emission Point Number as designated in NSR Permit or Emissions Inventory

[3] All records and calculations for these values must be available upon request

[4] Correct actual emissions for currently applicable rule or permit requirements, and periods of non-compliance. These corrections, as well as any MSS previously demonstrated under 30 TAC 101, should be explained in the Table 2F supplement

[5] If projected actual emission is used it must be noted in the next column and the basis for the projection identified in the Table 2F supplement

[6] Proposed Emissions (column B) minus Baseline Emissions (column A)

[7] Correction made to emission increase for what portion could have been accommodated during the baseline period. The justification and basis for this estimate must be provided in the Table 2F supplement

[8] Obtained by subtracting the correction from the difference. Must be a positive number.

[9] Sum all values for this page.

TABLE 2F
PROJECT EMISSION INCREASE

Pollutant[1]:	CO2e	Permit No.:	38754 / PSD-TX-324
Baseline Period:	2019 / 2020	Project Name:	HOC Reconfiguration Project

Affected or Modified Facilities[2]				Permit No.	A Actual Emissions[3] (tons/yr)	Baseline Emissions[4] (tons/yr)	B Proposed Emissions[5] (tons/yr)	Projected Actual Emissions (tons/yr)	Difference (B-A)[6] (tons/yr)	Correction[7] (tons/yr)	Project Increase[8] (tons/yr)
	FIN	EPN	Facility Name								
1	24-ST-01	121	Heavy Oil Cracker (HOC) Belco Scrubber	38754	1,641,332	1,641,332	2,457,772		816,440	-	816,440
2	30-B-05	30-B-05	Boiler	38754	-	-	222,594		222,594	-	222,594
3	HOC-PP-CT	HOC-PP-CT	Cooling Tower	38754	-	-	-		-	-	-
4	Various	FUG-CAP	Piping Fugitives	38754	-	-	90		90	-	90
5	SRU, SCOT	121	Sulfur Recovery	38754							4,990
6	13-H-01A. 13-H-01B, 13-H-01C	118	SMR (Heater Combustion)	38754							5,882
	SMR-VENT	118	SMR (Hydrogen Production)	38754							20,854
7	47-H-01. 47-H-02, 47-H-03, 47-H-04	150	HCU Heaters	38754	55,660	55,660	94,885		39,225		39,225
8	T-RACK	TRUCKCOMB	Loading - Truck Combustor	38754		-			-	-	397
9	Various	Various (See Table B-8)	Wastewater Treatment	38754		-			-	-	371
10	MSS Caps	MSS Caps	MSS	38754		-			-	-	26
										Page Subtotal[9]:	1,110,869
										Project Total:	1,110,869

[1] Individual Table 2Fs should be used to summarize the project emission increase for each criteria pollutant

[2] Emission Point Number as designated in NSR Permit or Emissions Inventory

[3] All records and calculations for these values must be available upon request

[4] Correct actual emissions for currently applicable rule or permit requirements, and periods of non-compliance. These corrections, as well as any MSS previously demonstrated under 30 TAC 101, should be explained in the Table 2F supplement

[5] If projected actual emission is used it must be noted in the next column and the basis for the projection identified in the Table 2F supplement

[6] Proposed Emissions (column B) minus Baseline Emissions (column A)

[7] Correction made to emission increase for what portion could have been accommodated during the baseline period. The justification and basis for this estimate must be provided in the Table 2F supplement

[8] Obtained by subtracting the correction from the difference. Must be a positive number.

[9] Sum all values for this page.

TABLE 3F

PROJECT CONTEMPORANEOUS CHANGES [1]

Company:	Valero Refining-Texas, L.P.	
Permit Application No.:	38754 / PSDTX324M14	VOC

	Project Date [2]:	Facility at Which Emission Change Occurred [3] FIN	EPN	Permit No.	Project Name or Activity	Baseline Period	A Proposed Emissions (tons/yr) [4]	B Baseline Emissions (tons/year) [5]	Difference (A-B) [6]	Creditable Decrease or Increase [7]
1	1/1/2024	(See Table 2F)	(See Table 2F)	(See Table 2F)	HOC Reconfiguration Project	2019-20	81.17		81.17	81.17
2	2/13/2018	11-H-01	114	38754	Increase average annual firing rate of existing Desalter Heater	2015-16	2.34	1.86	0.48	0.48
3	4/24/2018	11F-HDS	11F	151262	CY2017 Annual 106.261 Notification	NA	0.30		0.30	0.30
		VACUUMUNIT	2F			NA	0.03		0.03	0.03
		#TM-Terminal	TERM-F			NA	0.94		0.94	0.94
		HDS-FUG	12F			NA	0.24		0.24	0.24
		SMR-FUG	13F			NA	0.04		0.04	0.04
		WWTP-FUG	83F			NA	0.01		0.01	0.01
		CRUDE UNIT	1F			NA	0.65		0.65	0.65
		SHU-FUG	54F			NA	0.04		0.04	0.04
		ALKY-FUG	31F			NA	0.44		0.44	0.44
			903			NA	0.18		0.18	0.18
4	5/23/2019	PVCU	PVCU	155846	Addition of LPG and propylene barge loading controlled by portable VCU	NA	2.24		2.24	2.24
		NG-FUG	NG-FUG			NA	0.02		0.02	0.02
5	4/30/2019	LPG STORAGE	LPGSTGF	156307	CY2018 Annual 106.261 Notification	NA	0.07		0.07	0.07
		HOC-FUG	21/22F			NA	0.37		0.37	0.37
		ALKY-FUG	31F			NA	0.26		0.26	0.26
		DOCKS-F	DOCKS			NA	0.98		0.98	0.98
		SWS-FUG	42F			NA	0.05		0.05	0.05
		SHU-FUG	54F			NA	0.01		0.01	0.01
		11F-HDS	11F			NA	0.08		0.08	0.08
6	12/18/2019	LOADINGFUG	TRUCKFUG	38754	Increase annual truckloading (incorporation/consolidation of PBRs)	2017-18	15.80	10.54	5.26	5.26
		T-RACK	TRUCKCOMB			2017-18	13.61	2.75	10.86	10.86
7	11/19/2019	OLEFLEX-FU	38F	158668	Oleflex Unit Throughput Increase	NA	0.40	-	0.40	0.40
		38-H-01	162			2010-11	8.41	6.42	1.99	1.99
8	4/20/2020	LPG STORAGE	LPGSTGF	160677	CY2019 Annual 106.261 Notification	NA	0.02	-	0.02	0.02
		HDS-FUG	12F			NA	0.01		0.01	0.01
		DOCKS-F	DOCKS			NA	0.01		0.01	0.01

Company:	Valero Refining-Texas, L.P.	
Permit Application No.:	38754 / PSDTX324M14	VOC

	Project Date [2]:	Facility at Which Emission Change Occurred [3] FIN	EPN	Permit No.	Project Name or Activity	Baseline Period	A Proposed Emissions (tons/yr) [4]	B Baseline Emissions (tons/year) [5]	Difference (A-B) [6]	Creditable Decrease or Increase [7]
		11F-HDS	11F			NA	0.02		0.02	0.02
		SMR-FUG	13F			NA	0.04		0.04	0.04
		HOC-FUG	21/22F			NA	0.10		0.10	0.10
		08-F	08F			NA	0.06		0.06	0.06
		HCU-FUG	47F			NA	0.09		0.09	0.09
		WWTP-FUG	83F			NA	0.08		0.08	0.08
9	5/22/2020	SCOT/SRU	121	161261	Added sulfur tanks - Tailgas Incinerator increases	NA	0.01		0.01	0.01
10	5/10/2021	LPG STORAGE	LPGSTGF	164619	CY2020 Annual 106.261 Notification	NA	0.26		0.26	0.26
		HDS-FUG	12F			NA	1.13		1.13	1.13
		#TM-Terminal	TERM-F			NA	0.17		0.17	0.17
		NHT-FUG	48F			NA	0.17		0.17	0.17
		HOC-FUG	21F			NA	0.17		0.17	0.17
		CRU-FUG	49F			NA	0.08		0.08	0.08
		OLEFLEX-FU	38F			NA	0.03		0.03	0.03
		ALKY-FUG	31F			NA	0.01		0.01	0.01
		WWTP-FUG	83F			NA	0.01		0.01	0.01
		SHIP FUG	SHIP FUG			NA	0.01		0.01	0.01
		CRUDE UNIT	1F			NA	0.03		0.03	0.03
		08-F	08F			NA	0.08		0.08	0.08
		VACUUMUNIT	2F			NA	0.03		0.03	0.03
		MVRUF	MVRUF			NA	0.03		0.03	0.03
		BUTAMER	36F			NA	0.01		0.01	0.01
11	6/1/2021	HOC-FUG	21/22F	165131	Reliability Turnaround Projects	NA	0.56		0.56	0.56
		ALKY-FUG	31F			NA	0.38		0.38	0.38
									Page Subtotal [9]:	110.71
									Summary of Contemporaneous Changes	110.71

[1] Individual Table 3F=s should be used to summarize the project emission increase and net emission increase for each criteria pollutant.
[2] The start of operation date for the modified or new facilities. Attach Table 4F for each project reduction claimed.
[3] Emission Point No. as designated in NSR Permit or Emissions Inventory.
[4] All records and calculations for these values must be available upon request.
[5] All records and calculations for these values must be available upon request.
[6] Proposed (column A) - Baseline (column B).
[7] If portion of the decrease not creditable, enter creditable amount.

Company:	Valero Refining-Texas, L.P.
Permit Application No.:	38754 / PSDTX324M14 — VOC

Project Date [2]:	Facility at Which Emission Change Occurred [3]		Permit No.	Project Name or Activity	Baseline Period	A Proposed Emissions (tons/yr) [4]	B Baseline Emissions (tons/year) [5]	Difference (A-B) [6]	Creditable Decrease or Increase [7]
	FIN	EPN							

[8] Sum all values for this page.

TABLE 3F

PROJECT CONTEMPORANEOUS CHANGES [1]

Company:	Valero Refining-Texas, L.P.		
Permit Application No.:	38754 / PSDTX324M14		NO_X

	Project Date [2]:	Facility at Which Emission Change Occurred [3] FIN	EPN	Permit No.	Project Name or Activity	Baseline Period	A Proposed Emissions (tons/yr) [4]	B Baseline Emissions (tons/year) [5]	Difference (A-B) [6]	Creditable Decrease or Increase [7]
1	1/1/2024	(See Table 2F)	(See Table 2F)	(See Table 2F)	HOC Reconfiguration Project	2019-20	252.34	-	252.34	252.34
2	2/13/2018	11-H-01	114	38754	Increase average annual firing rate of existing Desalter Heater	2015-16	17.34	20.71	-3.37	-3.37
3	5/23/2019	PVCU	PVCU	155846	Addition of LPG and propylene barge loading controlled by portable VCU	NA	4.76	-	4.76	4.76
4	12/18/2019	T-RACK	TRUCKCOMB	38754	Increase annual truckloading (incorporation/consolidation of PBRs)	2017-18	11.38	1.87	9.51	9.51
5	11/19/2019	38-H-01	162	158668	Oleflex Unit Throughput Increase	2010-11	65.75	30.17	35.58	35.58
6	5/22/2020	SCOT/SRU	121	161261	Added sulfur tanks - Tailgas Incinerator increases	NA	0.01	-	0.01	0.01
									Page Subtotal [9]:	298.82
									Summary of Contemporaneous Changes	298.82

[1] Individual Table 3F=s should be used to summarize the project emission increase and net emission increase for each criteria pollutant.
[2] The start of operation date for the modified or new facilities. Attach Table 4F for each project reduction claimed.
[3] Emission Point No. as designated in NSR Permit or Emissions Inventory.
[4] All records and calculations for these values must be available upon request.
[5] All records and calculations for these values must be available upon request.
[6] Proposed (column A) - Baseline (column B).
[7] If portion of the decrease not creditable, enter creditable amount.
[8] Sum all values for this page.

TABLE 3F
PROJECT CONTEMPORANEOUS CHANGES [1]

Company:	Valero Refining-Texas, L.P.
Permit Application No.:	38754 / PSDTX324M14 — CO

Project Date [2]:		Facility at Which Emission Change Occurred [3] FIN	EPN	Permit No.	Project Name or Activity	Baseline Period	A Proposed Emissions (tons/yr) [4]	B Baseline Emissions (tons/year) [5]	Difference (A-B) [6]	Creditable Decrease or Increase [7]
1	1/1/2024	(See Table 2F)	(See Table 2F)	(See Table 2F)	HOC Reconfiguration Project	2019-20	316.74	-	316.74	316.74
2	2/13/2018	11-H-01	114	38754	Increase average annual firing rate of existing Desalter Heater	2015-16	15.52	0.15	15.37	15.37
3	5/23/2019	PVCU	PVCU	155846	Addition of LPG and propylene barge loading controlled by portable VCU	NA	4.08	-	4.08	4.08
4	12/18/2019	T-RACK	TRUCKCOMB	38754	Increase annual truckloading (incorporation/consolidation of PBRs)	2017-18	22.76	7.31	15.46	15.46
5	11/19/2019	38-H-01	162	158668	Oleflex Unit Throughput Increase	2010-11	69.49	7.87	61.62	61.62
6	5/22/2020	SCOT/SRU	121	161261	Added sulfur tanks - Tailgas Incinerator increases	NA	0.01	-	0.01	0.01
									Page Subtotal [9]:	413.28
									Summary of Contemporaneous Changes	413.28

[1] Individual Table 3F=s should be used to summarize the project emission increase and net emission increase for each criteria pollutant.
[2] The start of operation date for the modified or new facilities. Attach Table 4F for each project reduction claimed.
[3] Emission Point No. as designated in NSR Permit or Emissions Inventory.
[4] All records and calculations for these values must be available upon request.
[5] All records and calculations for these values must be available upon request.
[6] Proposed (column A) - Baseline (column B).
[7] If portion of the decrease not creditable, enter creditable amount.
[8] Sum all values for this page.

TABLE 3F

PROJECT CONTEMPORANEOUS CHANGES [1]

Company:	Valero Refining-Texas, L.P.	
Permit Application No.:	38754 / PSDTX324M14	SO2

	Project Date [2]:	Facility at Which Emission Change Occurred [3] FIN	EPN	Permit No.	Project Name or Activity	Baseline Period	A Proposed Emissions (tons/yr) [4]	B Baseline Emissions (tons/year) [5]	Difference (A-B) [6]	Creditable Decrease or Increase [7]
1	1/1/2024	(See Table 2F)	(See Table 2F)	(See Table 2F)	HOC Reconfiguration Project	2019-20	428.23	-	428.23	428.23
2	2/13/2018	11-H-01	114	38754	Increase average annual firing rate of existing Desalter Heater	2015-16	4.60	0.78	3.82	3.82
3	5/23/2019	PVCU	PVCU	155846	Addition of LPG and propylene barge loading controlled by portable VCU	NA	0.08	-	0.08	0.08
4	12/18/2019	T-RACK	TRUCKCOMB	38754	Increase annual truckloading (incorporation/consolidation of PBRs)	2017-18	0.03	-	0.03	0.03
5	11/19/2019	38-H-01	162	158668	Oleflex Unit Throughput Increase	2010-11	16.57	1.05	15.52	15.52
6	5/22/2020	SCOT/SRU	121	161261	Added sulfur tanks - Tailgas Incinerator increases	NA	0.01	-	0.01	0.01
									Page Subtotal [9]:	447.68
									Summary of Contemporaneous Changes	447.68

[1] Individual Table 3F=s should be used to summarize the project emission increase and net emission increase for each criteria pollutant.
[2] The start of operation date for the modified or new facilities. Attach Table 4F for each project reduction claimed.
[3] Emission Point No. as designated in NSR Permit or Emissions Inventory.
[4] All records and calculations for these values must be available upon request.
[5] All records and calculations for these values must be available upon request.
[6] Proposed (column A) - Baseline (column B).
[7] If portion of the decrease not creditable, enter creditable amount.
[8] Sum all values for this page.

TABLE 3F
PROJECT CONTEMPORANEOUS CHANGES [1]

Company:	Valero Refining-Texas, L.P.		
Permit Application No.:	38754 / PSDTX324M14		PM

	Project Date [2]:	Facility at Which Emission Change Occurred [3] FIN	EPN	Permit No.	Project Name or Activity	Baseline Period	A Proposed Emissions (tons/yr) [4]	B Baseline Emissions (tons/year) [5]	Difference (A-B) [6]	Creditable Decrease or Increase [7]
1	1/1/2024	(See Table 2F)	(See Table 2F)	(See Table 2F)	HOC Reconfiguration Project	2019-20	237.22		237.22	237.22
2	2/13/2018	11-H-01	114	38754	Increase average annual firing rate of existing Desalter Heater	2015-16	3.23	2.57	0.66	0.66
3	5/23/2019	PVCU	PVCU	155846	Addition of LPG and propylene barge loading controlled by portable VCU	NA	0.25	-	0.25	0.25
4	12/18/2019	T-RACK	TRUCKCOMB	38754	Increase annual truckloading (incorporation/consolidation of PBRs)	2017-18	0.34	-	0.34	0.34
5	11/19/2019	38-H-01	162	158668	Oleflex Unit Throughput Increase	2010-11	11.62	8.36	3.26	3.26
6	5/22/2020	SCOT/SRU	121	161261	Added sulfur tanks - Tailgas Incinerator increases	NA	0.01	-	0.01	0.01
									Page Subtotal [9]:	241.74
									Summary of Contemporaneous Changes	241.74

[1] Individual Table 3F=s should be used to summarize the project emission increase and net emission increase for each criteria pollutant.
[2] The start of operation date for the modified or new facilities. Attach Table 4F for each project reduction claimed.
[3] Emission Point No. as designated in NSR Permit or Emissions Inventory.
[4] All records and calculations for these values must be available upon request.
[5] All records and calculations for these values must be available upon request.
[6] Proposed (column A) - Baseline (column B).
[7] If portion of the decrease not creditable, enter creditable amount.
[8] Sum all values for this page.

TABLE 3F
PROJECT CONTEMPORANEOUS CHANGES [1]

Company:	Valero Refining-Texas, L.P.	
Permit Application No.:	38754 / PSDTX324M14	PM_{10}

	Project Date [2]:	Facility at Which Emission Change Occurred [3] FIN	EPN	Permit No.	Project Name or Activity	Baseline Period	A Proposed Emissions (tons/yr) [4]	B Baseline Emissions (tons/year) [5]	Difference (A-B) [6]	Creditable Decrease or Increase [7]
1	1/1/2024	(See Table 2F)	(See Table 2F)	(See Table 2F)	HOC Reconfiguration Project	2019-20	234.61		234.61	234.61
2	2/13/2018	11-H-01	114	38754	Increase average annual firing rate of existing Desalter Heater	2015-16	3.23	2.57	0.66	0.66
3	5/23/2019	PVCU	PVCU	155846	Addition of LPG and propylene barge loading controlled by portable VCU	NA	0.25	-	0.25	0.25
4	12/18/2019	T-RACK	TRUCKCOMB	38754	Increase annual truckloading (incorporation/consolidation of PBRs)	2017-18	0.34	-	0.34	0.34
5	11/19/2019	38-H-01	162	158668	Oleflex Unit Throughput Increase	2010-11	11.62	8.36	3.26	3.26
6	5/22/2020	SCOT/SRU	121	161261	Added sulfur tanks - Tailgas Incinerator increases	NA	0.01	-	0.01	0.01
									Page Subtotal [9]:	239.13
									Summary of Contemporaneous Changes	239.13

[1] Individual Table 3F=s should be used to summarize the project emission increase and net emission increase for each criteria pollutant.
[2] The start of operation date for the modified or new facilities. Attach Table 4F for each project reduction claimed.
[3] Emission Point No. as designated in NSR Permit or Emissions Inventory.
[4] All records and calculations for these values must be available upon request.
[5] All records and calculations for these values must be available upon request.
[6] Proposed (column A) - Baseline (column B).
[7] If portion of the decrease not creditable, enter creditable amount.
[8] Sum all values for this page.

TABLE 3F
PROJECT CONTEMPORANEOUS CHANGES [1]

Company:	Valero Refining-Texas, L.P.
Permit Application No.:	38754 / PSDTX324M14 — $PM_{2.5}$

	Project Date [2]:	Facility at Which Emission Change Occurred [3] FIN	EPN	Permit No.	Project Name or Activity	Baseline Period	A Proposed Emissions (tons/yr) [4]	B Baseline Emissions (tons/year) [5]	Difference (A-B) [6]	Creditable Decrease or Increase [7]
1	1/1/2024	(See Table 2F)	(See Table 2F)	(See Table 2F)	HOC Reconfiguration Project	2019-20	233.81		233.81	233.81
2	2/13/2018	11-H-01	114	38754	Increase average annual firing rate of existing Desalter Heater	2015-16	3.23	2.57	0.66	0.66
3	5/23/2019	PVCU	PVCU	155846	Addition of LPG and propylene barge loading controlled by portable VCU	NA	0.25	-	0.25	0.25
4	12/18/2019	T-RACK	TRUCKCOMB	38754	Increase annual truckloading (incorporation/consolidation of PBRs)	2017-18	0.34	-	0.34	0.34
5	11/19/2019	38-H-01	162	158668	Oleflex Unit Throughput Increase	2010-11	11.62	8.36	3.26	3.26
6	5/22/2020	SCOT/SRU	121	161261	Added sulfur tanks - Tailgas Incinerator increases	NA	0.01	-	0.01	0.01
									Page Subtotal [9]:	238.33
									Summary of Contemporaneous Changes	238.33

[1] Individual Table 3F=s should be used to summarize the project emission increase and net emission increase for each criteria pollutant.
[2] The start of operation date for the modified or new facilities. Attach Table 4F for each project reduction claimed.
[3] Emission Point No. as designated in NSR Permit or Emissions Inventory.
[4] All records and calculations for these values must be available upon request.
[5] All records and calculations for these values must be available upon request.
[6] Proposed (column A) - Baseline (column B).
[7] If portion of the decrease not creditable, enter creditable amount.
[8] Sum all values for this page.

TABLE 3F

PROJECT CONTEMPORANEOUS CHANGES [1]

Company:	Valero Refining-Texas, L.P.
Permit Application No.:	38754 / PSDTX324M14 H_2SO_4

	Project Date [2]:	Facility at Which Emission Change Occurred [3] FIN	EPN	Permit No.	Project Name or Activity	Baseline Period	A Proposed Emissions (tons/yr) [4]	B Baseline Emissions (tons/year) [5]	Difference (A-B) [6]	Creditable Decrease or Increase [7]
1	1/1/2024	(See Table 2F)	(See Table 2F)	(See Table 2F)	HOC Reconfiguration Project	2019-20	168.56	-	168.56	168.56
2										
3										
4										
5										
									Page Subtotal [9]:	168.56
									Summary of Contemporaneous Changes	168.56

[1] Individual Table 3F=s should be used to summarize the project emission increase and net emission increase for each criteria pollutant.
[2] The start of operation date for the modified or new facilities. Attach Table 4F for each project reduction claimed.
[3] Emission Point No. as designated in NSR Permit or Emissions Inventory.
[4] All records and calculations for these values must be available upon request.
[5] All records and calculations for these values must be available upon request.
[6] Proposed (column A) - Baseline (column B).
[7] If portion of the decrease not creditable, enter creditable amount.
[8] Sum all values for this page.

TABLE 3F
PROJECT CONTEMPORANEOUS CHANGES [1]

Company:	Valero Refining-Texas, L.P.		
Permit Application No.:	38754 / PSDTX324M14		CO_2e

Project Date [2]:		Facility at Which Emission Change Occurred [3] FIN	EPN	Permit No.	Project Name or Activity	Baseline Period	A Proposed Emissions (tons/yr) [4]	B Baseline Emissions (tons/year) [5]	Difference (A-B) [6]	Creditable Decrease or Increase [7]
1	1/1/2024	(See Table 2F)	(See Table 2F)	(See Table 2F)	HOC Reconfiguration Project	2019-20	1,110,869	-	1,110,869	1,110,869
2										
3										
4										
5										
									Page Subtotal [9]:	1,110,869
									Summary of Contemporaneous Changes	1,110,869

[1] Individual Table 3F=s should be used to summarize the project emission increase and net emission increase for each criteria pollutant.
[2] The start of operation date for the modified or new facilities. Attach Table 4F for each project reduction claimed.
[3] Emission Point No. as designated in NSR Permit or Emissions Inventory.
[4] All records and calculations for these values must be available upon request.
[5] All records and calculations for these values must be available upon request.
[6] Proposed (column A) - Baseline (column B).
[7] If portion of the decrease not creditable, enter creditable amount.
[8] Sum all values for this page.

Section 3
Location Information

The West Plant is located in Corpus Christi, Nueces County, Texas. A site location map is included as Figure 3-1, and a plot plan of the plant site is presented as Figure 3- 2.

Valero

Bill Greehey Refinery
West Plant
Corpus Christi, Texas

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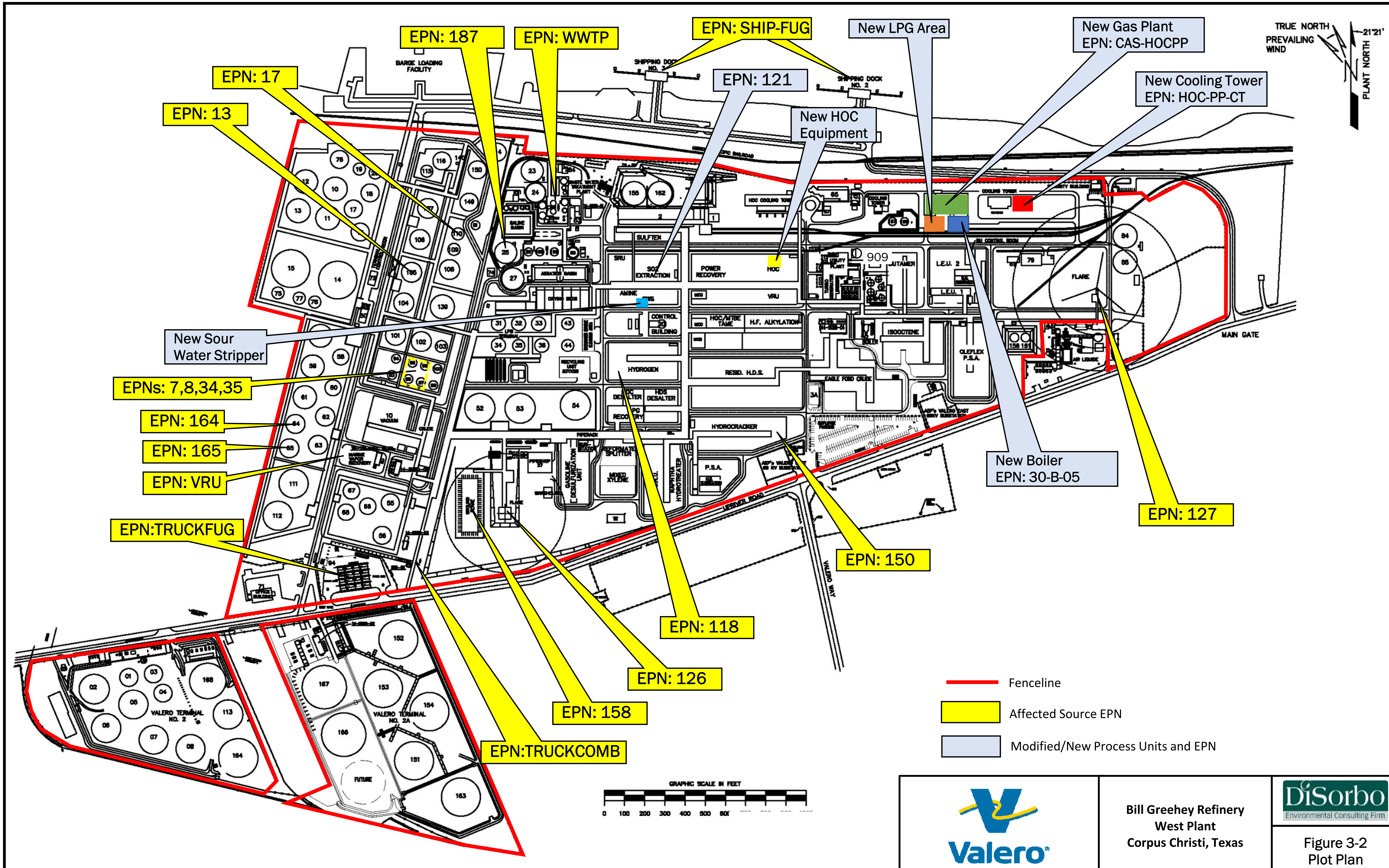
Figure 3-1
Area Map



Bill Greehey Refinery
West Plant
Corpus Christi, Texas

DiSorbo
Environmental Consulting Firm

Figure 3-2
Plot Plan

Section 4
Process and Project Description

4.1 Introduction

This section contains process descriptions for the reconfigured HOC Unit and the associated new units, describes the scope of the HOC Reconfiguration Project in detail, and addresses upstream and downstream affected process units. A process description and process flow diagrams showing proposed changes are included in this section.

4.2 Process Description for Modified HOC Unit

For air quality regulatory purposes, the heavy oil cracking (HOC) unit is classified as a type of fluid catalytic cracking (FCC) unit that processes residual feedstocks,[2] and its operation is similar to other FCC units in essential respects.

Residual feedstocks (e.g., atmospheric residuum, vacuum tower bottoms) are upgraded to produce light cycle oil, cat naphtha, and olefin-rich, LPG-range materials. Vaporized, preheated feed and finely dispersed catalyst are introduced at the bottom of a riser. Feed and catalyst form a continuous phase and travel upwards through the riser into a reactor, where spent catalyst is disengaged from upward-flowing products in the vapor phase. The primary effect of the cracking reaction is to break carbon-carbon bonds, reducing the average molecular weight of the feed and generating a substantial proportion of olefinic compounds. Because the cracking reaction takes place in the riser as well as the reactor, the term “riser-reactor” is commonly used to refer to the collection of process equipment where the primary cracking reactions take place.

A secondary reaction is the formation of coke on the catalyst particles, which inhibits their activity. The spent catalyst flows downward from the reactor into a regenerator, where air is introduced to burn off the coke. Hot rejuvenated catalyst is returned to the riser. The returned catalyst also serves to provide a source of heat for the endothermic catalytic cracking reaction process.

[2] *See* 54 Fed. Reg. 34008. Aug. 17, 1989.

The combustion of coke in the regenerator generates particulate matter, carbon monoxide, nitrogen oxides, and hydrocarbon emissions. The coke also contains organic sulfur and nitrogen that were originally present in the FCC feed, and these may be converted to SO_2, NO_X, and HCN during regeneration. SO_2 and PM emissions are controlled using the Belco Scrubber (EPN 121), while NO_X, CO, VOC, and HCN emissions are controlled through combustion techniques which are discussed in further detail in Section 6.

Product effluent from the reactor-riser is directed to a gas plant where it is quenched and fractionated into products, including light cycle oil, cat naphtha, C3 and C4 LPG's, and fuel gas.

4.3 Project Scope

Below is a detailed description of the project, including physical changes to be made to the HOC Unit. Miscellaneous changes outside the battery limits ("OSBL") of this process area are also discussed.

4.3.1 Modified HOC Unit/ New Gas Plant

The project will install a secondary riser-reactor in the HOC Unit and a new gas plant next to the HOC Unit. The secondary riser-reactor will be connected to and will share the existing HOC regenerator for catalyst regeneration and heat transfer purposes. Cat naphtha produced at the HOC, which is currently sent to the Gasoline Desulfurization Unit (GDU), will be rerouted to the secondary reactor-riser, where it will be cracked into light olefins and naphtha. The gaseous olefins will be separated in the new gas plant, producing propylene butylenes, high-octane naphtha, and light cycle oil (LCO). The propylene will be exported for sale. The butylenes will be routed to the Alkylation unit, backing out butylenes which are currently routed to the Alkylation Unit from the Oleflex Unit. Those Oleflex Unit butylenes that are backed out from Alkylation Unit will be routed to the Iso-Octene Unit resulting in increased production of iso-octene (a gasoline blendstock). The high-octane naphtha that is produced will be routed to the GDU, partially making up for the cat naphtha that was re-directed to the secondary reactor-riser. The LCO that is produced will be routed back through the HOC unit and then ultimately routed to the Hydrocracker Unit (HCU) as incremental feed. Off-gas generated in the process will be amine treated using existing equipment to reduce sulfur content and then either exported to a 3rd party facility as a feedstock or routed to the refinery's fuel gas system.

Heat generated from the combustion of coke in the HOC regenerator is used to vaporize and preheat the feed, providing heat of reaction for the endothermic cracking reaction. The HOC regenerator is currently equipped with bed coils at its bottom which remove the excess heat by producing steam.

These bed coils will be removed as part of the project. The cracking in the proposed secondary riser-reactor will also be an endothermic process and will remove the excess heat generated by the HOC regenerator, eliminating the need for the bed coils. The loss of steam supply due to removal of the bed coils will be compensated for by the installation of a new boiler, which will also serve to enhance steam reliability for other refinery process units.

The second reactor-riser will create a modest increase in coke burn activity due to the lower coke-forming tendencies of the lighter feeds used. Therefore, it is not necessary to construct a second regenerator to accommodate the new reactor-riser.

The gas plant will include a Merox Unit for removing mercaptan sulfur from LPG products and a Selective Hydrogenation Unit (SHU) for converting unwanted di-olefins into mono-olefin products. The gas plant will also include a new C3/C4 splitter tower for separating butylenes from propylene. Steam and cooling water needed for these units will be provided by the new boiler and new cooling tower. Incremental hydrogen that will be consumed in the new SHU Unit will be provided by the refinery's existing SMR Unit. The Merox Unit will generate a very low-volume air-oxidation off-gas stream which will be routed to the new boiler and/or the existing SRU Tail Gas Incinerator for control. A wastewater collection system is also part of the new gas plant.

4.3.2 Other Associated Changes

The project will include other changes in the OSBL sections of the refinery, including:

- New boiler
- New cooling tower
- Additional sour water stripper
- Pressurized bullet tanks for storage of liquefied gases
- Miscellaneous piping changes
- Other changes not affecting equipment with potential to emit air contaminants (e.g., control and instrumentation, electrical equipment, electric-drive air compressors).

Valero would also like to take the opportunity to correct the drift factor for the existing HOC cooling tower (FIN: HOC-CT, EPN: 122). The current permit limits are based on a drift loss percent of 0.005%. However, the drift eliminators installed on the HOC colling tower are designed to have no more than 0.001% drift loss.

4.4 Upstream/Downstream Units

This section identifies refinery process areas potentially impacted by the project, and indicates whether they will be modified, affected, or unaffected by the project.

4.4.1 Crude Unit

The crude unit and the vacuum unit produce atmospheric and vacuum residuum (“resid”) which feeds the HOC unit. Because the purpose of the HOC Reconfiguration Project is to produce higher-value products, rather than to increase the rate of fresh feed (i.e., resid) to the unit, upstream units supplying the HOC are not affected.

4.4.2 Oleflex Unit and Alkylation Unit

The Oleflex Unit produces an isobutylene-rich product stream, using isobutane as its primary feedstock. Isobutylene produced in the Oleflex Unit is currently routed to the Alkylation Unit and the Iso-Octene Unit as feedstocks. Because the butylene that will be produced by the new secondary reactor/riser in the HOC will be of a grade more suitable for Alkylation feed, they will back out nearly all of the isobutylenes currently sent from the Oleflex. Those Oleflex isobutylenes will be diverted to Iso-Octene Unit. Because the Oleflex Unit will not experience any additional throughput as a result of this project and because its product will simply be diverted to a different downstream unit, it is not an affected unit. Likewise, the Alkylation Unit will not be affected by this project since its feedstock will simply come from a different upstream unit and there will be no Alkylation production increases (the unit is not constrained by feed availability).

4.4.3 Iso-Octene Unit

The Iso-Octene unit produces a high-octane, iso-octene-rich product using an isobutylene-rich feedstock. As indicated in the section above, because the reconfigured HOC Unit will generate a more desirable butylene feedstock for use in the Alkylation Unit and because the existing Oleflex isobutylene that is sent to the Alkylation Unit will be backed out and rerouted to the Iso-Octene Unit resulting in increased production of iso-octene, the Iso-Octene Unit will be considered affected by this project. The increased production rates through the Iso-Octene unit will result in very small incremental increases in steam demand and cooling water (off-set by the new boiler and new cooling tower) and a very small incremental increase in the generation of process wastewaters (< +1 gpm).

VAL_000041

4.4.4 Hydrocracker Unit (HCU)

The HCU cracks gasoil-range materials to produce a range of products, of which diesel- and kerosene-range materials make up a large proportion. Although the HOC Unit produces a light cycle oil (LCO) stream that is processed in the HCU, LCO feed to the HCU complements imported gasoil. The HOC Reconfiguration Project will result in a slight increase (< 1,600 BPD) in LCO production. This incremental LCO will be processed in the HCU and therefore the HCU is being considered an affected unit.

4.4.5 Gasoline Desulfurization Unit (GDU)

The GDU hydrotreats depentanized FCC gasoline ("cat naphtha") to remove sulfur prior to entering the gasoline product pool. Because the entirety of the HOC cat naphtha feed stream that is currently routed to the GDU will be redirected to the secondary reactor/riser for the production of lighter olefins and because only a fraction of that stream will be returned to the GDU as high-octane naphtha from the new Gas Plant, the GDU will see a net decrease in throughput rates. Consequently, the GDU is not considered an affected unit.

4.4.6 Steam Generation

In order to ensure that process steam requirements associated with the project do not adversely impact the overall steam balance for the West Plant, Valero intends to install a new boiler (EPN 30-B-05) with a steam generation rate which exceeds the total steam demands associated with the project. Therefore, emissions from existing utility boilers will not increase because of the project.

4.4.7 Incremental Hydrogen Production

Incremental amounts of additional hydrogen will be consumed at the new SHU unit and the affected HCU Unit as a result of this project. The incremental hydrogen will be produced from the refinery's existing Steam Methane Reformer (SMR) and consequently the SMR will be considered an affected unit and incremental emissions will be considered in the downstream impacts analysis.

4.4.8 Heat Exchange Systems

The project includes installation of new heat exchange equipment in the HOC and Gas Plant units, and may also increase the total heat duty of existing heat exchange equipment. Therefore, an overall increase in the amount of cooling water consumed at the West Plant is expected. Net increases in cooling water requirements associated with the project will be offset by construction of a

VAL_000042

new cooling tower (EPN HOC-PP-CT). Therefore, emissions from existing cooling towers, including the HOC Cooling Tower (EPN 122), will not increase as a result of the project.

4.4.9 Storage, Gasoline Blending, and Logistics

The HOC Reconfiguration Project will have several impacts on the overall balance of feedstocks and products produced by the refinery, which are the basis for estimating impacts to storage, blending, and logistics (truck, rail, and marine loading) operations. As noted above, the project will result in increased production of high-octane gasoline blendstocks (naphtha and iso-octene), but this will be partially offset by reductions in hydrotreated cat naphtha gasoline. The project will also result in increased production of propylene product and butylene intermediates. As mentioned above, the increased butylene production will result in increased butylene consumption at the Iso-Octene Unit and increased iso-octene production. The increased propylene product will be stored in an existing pressurized spherical tank (Tank T.B.D.) and the butylenes that are currently stored in that tank will be re-routed into two new butylene bullet tanks that will be constructed as a part of this project.

Feedstocks and products for which volumes are impacted by the project are summarized in Table 4-1, below.

Table 4-1 Basis for Estimating Storage and Loading Impacts

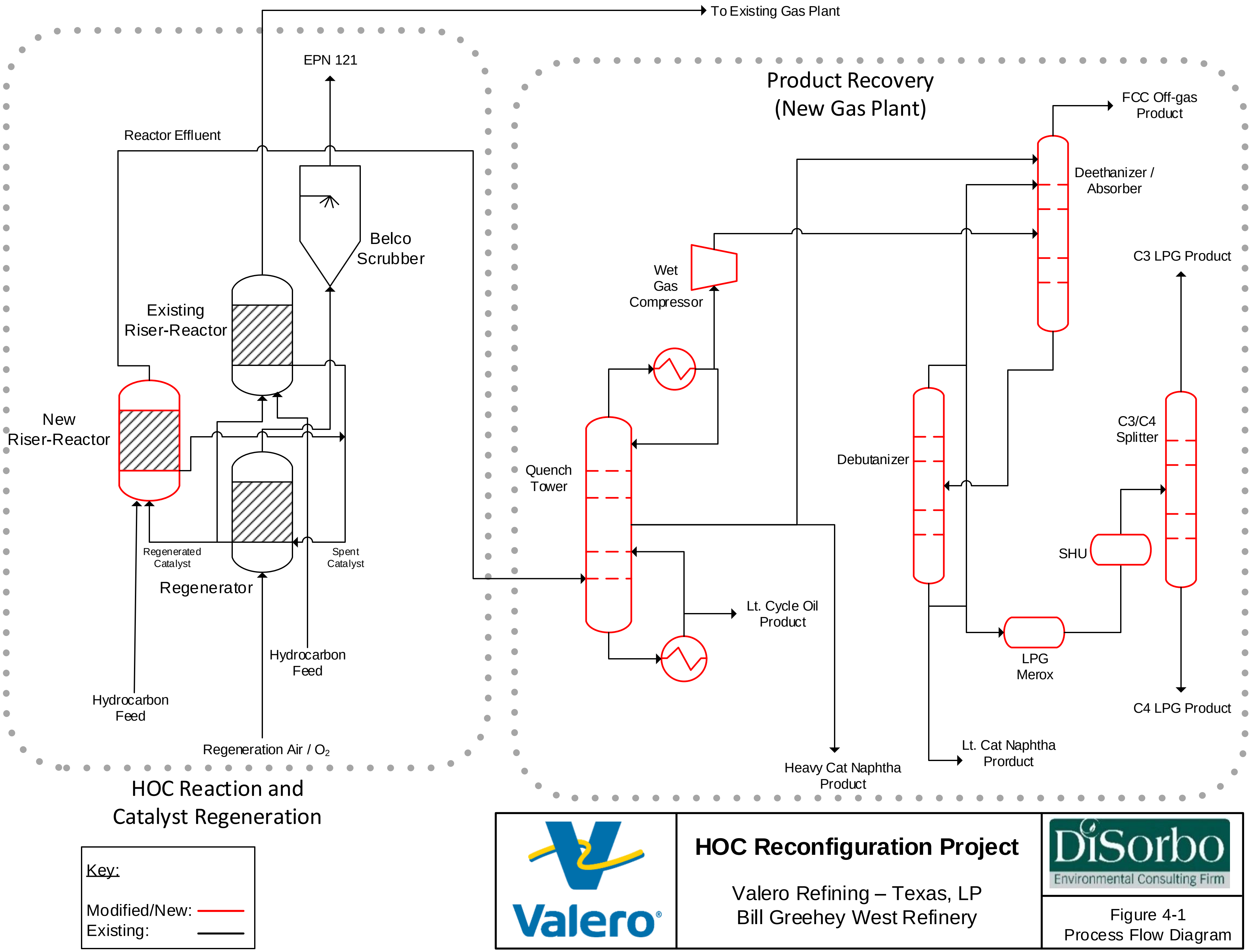
Material	Basis for Storage Impacts	Basis for Loading Impacts
Iso-octene	Additional working losses in floating roof tanks	Throughput based on additional iso-octene production
Propylene/Butylenes	Storage in pressurized tanks (propylene to existing spherical tank and two new bullet tanks for re-directed storage of butylenes) (no air emissions during routine operations)	Loading into pressurized vessels (no air emissions)
Hydrocracker intermediate products (e.g. diesel)	Additional working losses in floating roof tanks	Throughputs based on additional incremental intermediate production

4.4.10 Sulfur Removal and Sulfur Recovery

As discussed above, the gases emanating from the additional HOC riser/reactor will be processed in a new Gas Plant. One of the functions of the Gas Plant is to quench the reactor effluent gas and this process removes sulfur from the product stream and generates a sour water stream. The sour water will be processed through an existing Sour Water Stripper (SWS #42) as well as through a new purpose-built Sour Water Stripper. Off gases from the sour water strippers will be routed to the existing Sulfur Recovery Units (SRUs) where elemental sulfur product is recovered for sale. As a result, the SRU's will be affected by the project and incremental increased SRU emissions are accounted for in this application. No modifications will be required to the SRUs and the project will not affect the overall capacity of the SRUs or impair their ability to comply with permit limits for removal efficiency, redundancy, etc. Effluent water from the sour water strippers (stripped sour water) will be routed for internal process water re-use and any quantities that cannot be re-used will be routed to the refinery's existing wastewater treatment plant.

4.4.11 Wastewater Treatment

Small amounts of incremental wastewater will be generated by the project and processed in the refinery's existing wastewater treatment plant (WWTP). These waters include boiler blowdown water from the new steam boiler, increased wastewaters from the affected Iso-Octene Unit, increased wastewaters from the new sour water stripper, and increased wastewaters from the new Merox and other Gas Plant units. The water from the Merox will be in the form of spent caustic and will be used to help with pH control in the WWTP. Additional air emissions associated with the increased incremental wastewater flows are accounted for in quantifying downstream emissions increases.



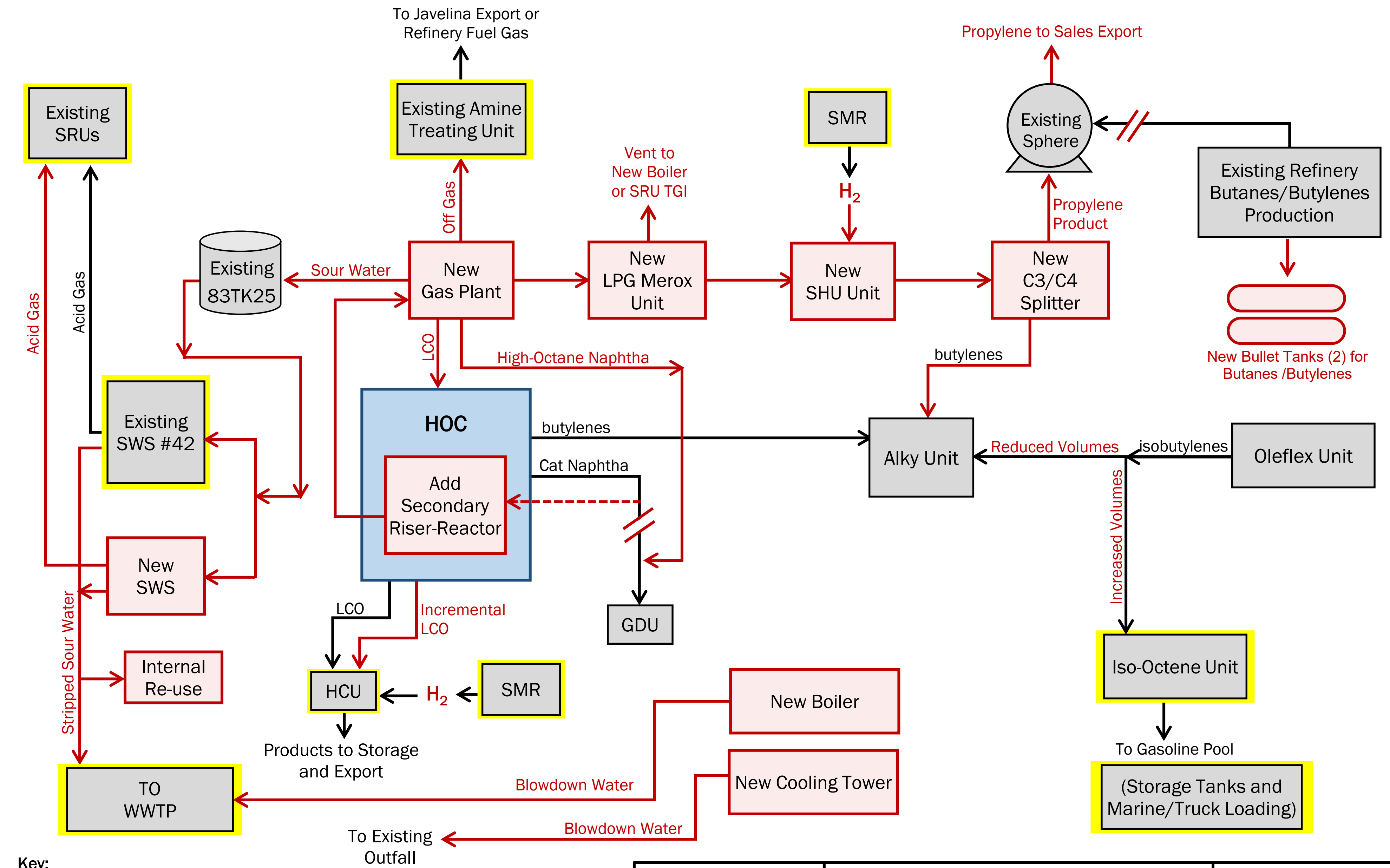
HOC Reconfiguration Project

Valero Refining – Texas, LP
Bill Greehey West Refinery

DiSorbo Environmental Consulting Firm

Figure 4-1
Process Flow Diagram

VAL_000045



Key:

- Existing - Affected
- Existing - Modified
- Existing - Not Affected
- New Unit

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HOC Reconfiguration Project

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Corpus Christi, Texas

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Environmental Consulting Firm

Figure 4-2
Process Flow Diagram

Section 5
Emission Calculations

5.1 Introduction

This section describes the methodology used to estimate emission rates for sources of emissions affected by the project. This section also contains sample calculations, while complete calculations are shown in Appendix A for new and modified sources and in Appendix B for project affected sources.

Emissions sources which will experience emissions increases are identified in Section 4 of the application.

5.2 New and Modified Sources

5.2.1 HOC Regenerator

HOC emission calculations are shown on Table A-1. Emissions from the HOC Regenerator are determined by multiplying the maximum stack flow rate (on a dry, standard basis, corrected to 0% O_2) by the permitted emission limit for NO_X, CO, SO_2 and VOC. Particulate, HCN and H_2SO_4 emissions are determined by multiplying the maximum coke burn rate by the applicable emission factor.

During actual operations, stack temperature, flow, pressure and oxygen concentration are measured to calculate the dry stack flow rate, corrected to 0% O_2. The coke burn rate is calculated from measured flow rates for stack gas, air flow to regenerator, and flow of oxygen-enriched air to regenerator, if any (Q_r, Q_a, and Q_{oxy}, respectively) following Equation 6 at 40 CFR § 60.104a(d)(4)(iii):

$$R_c = K_1 Q_r(\%\mathrm{CO_2} + \%\mathrm{CO}) + K_2 Q_a - K_3 Q_r\left(\frac{\%\mathrm{CO}}{2} + \%\mathrm{CO_2} + \%\mathrm{O_2}\right) + K_3 Q_{\mathrm{oxy}}(\%O_{\mathrm{oxy}})$$

For purposes of estimating the HOC regenerator's potential to emit, however, a worst-case stack flow rate and worst-case coke burn off rate are used to simplify the process of calculating emissions. The For example, the annual NO_X emission rate may be calculated from the permit concentration limit and the worst-case stack flow as follows:

$$\left(\frac{402000\,\mathrm{dscf}}{\mathrm{min}}\right)\left(\frac{60\times 8760\,\mathrm{hr}}{\mathrm{yr}}\right)(37\,\mathrm{ppmv})\left(\frac{1\,\mathrm{lbmol}}{379.5\,\mathrm{dscf}}\right)\left(\frac{46.01\,\mathrm{lb}}{\mathrm{lbmol}}\right)\left(\frac{1\,\mathrm{t}}{2000\,\mathrm{lb}}\right)=473.9\,\mathrm{tpy\ NO_X}$$

Emission factors used in calculations are consistent with the BACT proposals in Section 6.

5.2.2 Steam Boiler

As noted above, the new boiler will supply the steam needs of the project and no impacts to existing boilers are projected. NO_X, particulate and VOC emissions from the new boiler are calculated by multiplying the maximum fired duty of the boiler (HHV basis) by the appropriate emission factor (expressed in units of lb/MMBtu), based on the BACT analysis (NO_X) or AP-42 (Particulate, VOC).

For CO and NH_3, an emission limit based on the concentration in the stack gas (dry basis, corrected to 3% O_2) is converted to an emission factor in units of lb/MMBtu following Equation 19-1, 40 CFR Part 60, Appendix A-7:

$$E = C_d F_d \frac{20.9}{(20.9 - \%O_{2d})}$$

The F-factor for Natural Gas, Propane or Butane (8710 dscf/MMBtu; Table 19-2, 40 CFR Part 60, Appendix A-7) is used for emission calculation purposes, while Equation 19-13 is used to calculate the actual F-factor during operations. A sample calculation to convert an NH_3 concentration limit of 10 ppmvd to units of lb/MMBtu is as follows:

$$E = (10\,\mathrm{ppmvd})\left(\frac{1\,\mathrm{lbmol}}{379.5\,\mathrm{scf}}\right)\left(\frac{17.03\,\mathrm{lb}}{\mathrm{lbmol}}\right)\left(\frac{8710\,\mathrm{scf}}{\mathrm{MMBtu}}\right)\left(\frac{20.9}{20.9-3}\right)=0.0046\,\mathrm{lb/MMBtu}$$

Sulfur dioxide emissions from combustion devices are frequently calculated based on the sulfur content of the fuel gas. Below is a sample calculation illustrating the development of an annual-average emission factor for SO_2 for a fuel gas combustion device subject to NSPS Ja (60 ppmv H_2S in fuel gas).

$$E = (60\ \mathrm{ppmvd})\left(\frac{1\ lbmol}{379.5\ scf}\right)\left(\frac{1\ scf}{909.3\ btu}\right)\left(\frac{34\ lbH_2S}{lbmol}\right)\left(\frac{64\ lbSO_2}{34\ lbH_2S}\right)\left(\frac{1\ BTU}{10^{-6}\ MMBtu}\right)=0.0111\ lb/MMBtu$$

5.2.3 Equipment Leak Fugitives

Fugitive emission calculations are shown on Tables A-3 and A-4. In addition, the Common Fugitive Calculation Workbook was submitted with this application. Emissions from new piping components are calculated following the approach specified in TCEQ Publication APDG 6422 ("Fugitive

Guidance"). As required by the guidance, piping components are classified by type and service to obtain the appropriate emission factor. This emission factor is then multiplied by the number of components, and adjustments are made based on control credits allowed under the monitoring program and the VOC content of the process stream. For example, the short-term emission rate of a group of 500 valves in light liquid service contacting a stream of 100% VOC and subject to quarterly instrumental monitoring would have an emission rate calculated as follows:

$$(500\,\text{valves})\left(\frac{0.024\,\text{lb/hr}}{\text{component}}\right)(1-0.97)=0.36\,\text{lb/hr}$$

5.2.4 Cooling Tower

Special Condition 30 of the permit specifies a leak definition of 0.08 ppmw VOC (measured as methane equivalent, strippable hydrocarbons) in returning cooling water. This is equivalent to the AP-42, Chapter 5.1, Table 5.1-3 emission factor of 0.7 lb/MMgal:

$$\left(\frac{0.08\,\text{lb VOC}}{10^6\,\text{lb water}}\right)\left(\frac{8.35\times10^6\,\text{lb water}}{\text{MMgal water}}\right)\approx 0.7\,\frac{\text{lb VOC}}{\text{MMgal water}}$$

Particulate emissions are based on the drift rate (considering the efficiency of drift eliminators), the TDS of the circulating water, and the applicable particle size distribution for particulate fractions. The cooling tower PM_{10} and $PM_{2.5}$ emission estimates are calculated using the methodology and droplet distribution found in the technical paper: "Calculating Realistic PM10 Emissions from Cooling Towers, Joel Reisman and Gordon Frisbie, 2002". The emission calculations for the new cooling tower are shown on Table A-5.

As discussed in Section 4.3.2., the existing HOC cooling tower has better drift eliminators than what was used for the current permit basis (0.001% drift, versus 0.005% in current permit basis). The revised emission limits For EPN 122 were calculated by applying a ratio of 0.2 (0.001%/0.005%) to the current short-term and annual emission limits.

5.2.5 Merox Unit

Emissions calculations for the Merox Unit are provided in Table A-6. The air-oxidation off-gas stream from the Merox Unit consist of VOC plus small amounts of hydrogen sulfide and disulfides. The emissions from the will be controlled by either routing the off-gas steam to an existing SRU Tail Gas Incinerator or to the new Boiler (EPN 30-B-05). The off-gas concentrations are applied to the flow rate to determine the mass rate to the control device. The final emission rates are determined using a 99% destruction efficiency.

5.2.6 Wastewater Collection System

A new lift station associated with the project will be located in the new Gas Plant. The VOC emissions from the Carbon Adsorption System (CAS) emissions are based on the maximum vapor flow rates, and maximum benzene and VOC breakthrough concentrations. The emission rates are calculated on Table A-7.

5.2.7 Maintenance, Startup, and Shutdown Emissions

Additional annual emissions from maintenance, startup, and shutdown (MSS) activities associated with the modified HOC and new Gas Plant are calculated on Table A-8 and A-9, respectively. The changes to the existing annual MSS caps are calculated on Table A-10.

5.3 Affected Sources

Affected upstream and downstream sources include the sulfur recovery unit, process heaters, storage tanks, wastewater treatment, loading operations, and associated vapor combustion units. Project emission increases were calculated for each of these sources.

5.3.1 Storage Tanks

Increased emissions due to additional throughput in floating roof storage tanks, calculated on Table B-2, are based on the increased withdrawal losses from such tanks. These emissions are calculated following AP-42 Chapter 7, Equation 2-4:

$$L_{WD} = \frac{0.943 Q C_S W_L}{D}\left[1 + \frac{N_C F_C}{D}\right]$$

Increased emissions due to additional throughput in fixed roof storage tanks, calculated on Table B-3, are based on the increased working losses from such tanks. These emissions are calculated following AP-42 Chapter 7, Equation 1-35:

$$L_W = V_Q * K_N * K_P * W_V * K_E$$

5.3.2 Hydrogen Production

Additional hydrogen will be needed for the new SHU and for the increased feed to the HCU. The hydrogen demand for each of these units is calculated on Table B-4. For the increased hydrogen production at the SMR, baseline emissions of NO_X, CO, VOC, SO_2, $PM/PM_{10}/PM_{2.5}$, and CO_2e were converted to an emission factor by dividing the baseline emissions by the actual hydrogen production that occurred during the baseline period. These production rate emission factors were applied to the expected hydrogen production increase resulting from the project to calculate the resulting project emission increases as shown on Table B-5.

5.3.3 Sulfur Recovery Units

For the SRU, baseline emissions of NO_X, CO, VOC, SO_2, $PM/PM_{10}/PM_{2.5}$, and CO_2e were converted to an emission factor by dividing the baseline emissions by the actual sulfur production that occurred during the baseline period. These production rate emission factors were applied to the expected sulfur production increase resulting from the project to calculate the resulting project emission increases as shown on Table B-5.

5.3.4 Product Loading

Loading emissions from increased marine and truck loading are calculated on Table B-6 using the methodology contained in AP-42, Section 5.2 for "Transportation and Marketing of Petroleum Liquids," based on the expected throughput increase resulting from the HOC Reconfiguration Project. The appropriate collection efficiency was applied depending on the material transferred and the type of transport vessel.

Combustion product emissions from loading control systems (such as Vapor Combustion Units) were calculated on Table B-7 using permitted emission factors and the expected increased throughput.

5.3.5 Wastewater Treatment

The actual emission increases from the wastewater treatment sources due to the increased wastewater flow from the project are calculated on Table B-8. Emissions from storage tanks in the wastewater treatment are calculated using the AP-42 withdrawal equation, discussed in Section 5.3.1. For treatment processes for which permitted emission rates are based on WATER9 modeling, emission factors in terms of pounds of emissions per gallon of wastewater throughput were determined and applied to the increased wastewater flow rate from the project.

Section 6
Best Available Control Technology

6.1 Introduction

In accordance with 30 TAC 116.111(a)(2)(c) and 40 CFR §52.21(j), the Project must apply the Best Available Control Technology (BACT)[3] for each new or modified emissions unit. This section contains the required PSD and minor NSR control technology reviews.

The Project is subject to PSD BACT for NO_X, SO_2, CO, PM, PM_{10}, $PM_{2.5}$, and GHG. Minor NSR BACT review applies to VOC, HCN, H_2S, H_2SO_4, and NH_3.

The following new or modified emission units are subject to control technology review requirements.

- HOC Unit (Modified), including new Gas Plant
- Boiler (new)
- Cooling Tower (new)
- Equipment Fugitives (new)
- Merox Unit vent (new)
- Wastewater Collection (new)
- Maintenance, Startup, and Shutdown (Modified)

[3] At 40 CFR Part §52.21(b)(12): "emissions limitation (including a visible emission standard) based on the maximum degree of reduction for each pollutant subject to regulation under Act which would be emitted from any proposed major stationary source or major modification which the Administrator, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such source or modification through application of production processes or available methods, systems, and techniques, including fuel cleaning or treatment or innovative fuel combustion techniques for control of such pollutant."

6.1.1 Procedure for determining BACT

For PSD permit reviews in the State of Texas, there exist two available frameworks for conducting the control technology review: The EPA "Top Down" approach and the TCEQ "Three-tier" approach.

6.1.1.1 Top Down Approach

The Top Down approach consists of the following steps:[4]

- Step 1. Identify all control techniques with potential applicability to the source, including the use of inherently lower-emitting processes and/or add-on controls. Potentially applicable control technologies include those that have been demonstrated for the same source category as well as transferable technologies that have been demonstrated for a related source category. Sources of information for identifying potentially applicable controls are EPA's RACT/BACT/LAER Clearinghouse (RBLC) database, recently-issued permits, control guidelines issued by state and local air pollution control agencies, technical journals, and equipment vendors. Innovative, undemonstrated technologies may optionally be considered at step 1.
- Step 2. Evaluate the technical feasibility of each control technique, and eliminate all infeasible control options. A control technology is considered to be technically feasible if it is both commercially available and applicable to the proposed source. A control technology is deemed to be "available" it if has been previously licensed or otherwise commercially demonstrated. A control technology is "applicable" to a proposed source if there are no physical or chemical characteristics of the emission stream that would prevent application of the technology. If a particular control technology is specified in an issued permit for the same or similar source type, this creates the presumption that it is applicable.
- Step 3. Rank the technically feasible alternatives in order of decreasing effectiveness. The analysis conducted at step 3 should also document the energy impacts, secondary environmental impacts, and cost effectiveness of each control option.

[4] Craig J. Potter (OAR) to Regional Administrators. December 1, 1987. *Improving NSR Implementation*; and EPA OAQPS. March 15, 1990. *DRAFT "Top-Down" Best Available Control Technology Guidance Document*.

- Step 4. Eliminate control options which have unfavorable energy, environmental, or economic impacts. Specific documentation must be provided by the applicant in case the top-ranked control technology is to be rejected on the basis of energy, environmental or economic impacts.
- Step 5. The highest-ranked remaining alternative is selected as BACT.

6.1.1.2 Three-tier Approach

The TCEQ Three-tier approach is similar to the EPA Top-down approach, except that it provides for streamlined control technology determinations for source categories where a presumptive level of cost-effective control has been established through recent permit reviews.[5]

In the first tier, an applicant's BACT proposal is compared to the emission reduction performance levels accepted as BACT in recent NSR permit reviews for the same process and/or industry. Since the technical practicability and economic reasonableness of a particular emission reduction option may have already been demonstrated in prior reviews for the same process and/or industry, cost effectiveness data and technical feasibility is not considered in a systematic way at the first tier in the review. However, the BACT evaluation may also take into consideration any new technical developments, which may indicate that additional emission reductions are economically or technically reasonable. Sources of data for BACT determinations in recent permit reviews include recently issued/approved permits within the state of Texas; recently issued/approved permits in other states; and the RACT/BACT/LAER Clearinghouse (RBLC) database.

Progression to tier II is warranted if there exist compelling technical differences between the applicant's process and others within the same industry, or if no recent BACT determinations are available for a particular industry. Tier II compares the overall emission reduction performance level of the applicant's BACT proposal to those accepted as BACT in recent permit reviews for other process/industry types with similar emission streams.

If insufficient data is available to complete a tier II analysis, or if there are compelling technical differences between the proposed process and the process/industry types identified at Tier II, then

[5] *Air Permit Reviewer Reference Guide. Air Pollution Control: How to Conduct a Pollution Control Evaluation*. TCEQ Publication APDG 6110. January 2011.

the analysis progresses to tier III. Tier III is similar to the EPA “top down" BACT selection approach, and consists of five steps which are effectively equivalent to those describe above.

6.1.1.3 Approach Employed

The two approaches are expected to yield similar results when the following sources of information are considered at Step 1 or Tier I of the analysis:[6]

- Recently issued/approved permits within the state of Texas;
- Recently issued/approved permits in other states; and
- Control technologies contained within the EPA’s RACT/BACT/LAER Clearinghouse (RBLC).

TCEQ guidance allows permit applicants to choose either the BACT Top-Down method or the TCEQ BACT Three-Tier analysis.[7] Valero has prepared the present analysis using the TCEQ three-tier framework, and has considered the three sources of information noted above. A Tier III analysis has been provided for NO_X emissions from the HOC regenerator, while Tier I controls are proposed as BACT for all other sources and pollutants.

Copies of RBLC entries consulted are included as Appendix C.

6.2 HOC Unit

The majority of emissions from FCC units come from the catalyst regenerator, which is a source of emissions of products of combustion (NO_X, CO, SO_2, VOC, CO_2, and particulate). HCN, NO_X and SO_2 are formed from combustion of nitrogen and sulfur compounds present in the coke, while CO, VOC, and particulate are formed from incomplete combustion of the coke. CO_2 is formed from complete combustion of the coke.

[6] APDG6110 at 51.
[7] APDG 6110 at 11: “*While the TCEQ has followed a different approach (Three Tier), the end result from using either method should be the same.*”

6.2.1 Current Control Requirements and Review of Available Information

The permit currently specifies the following emission limits for the HOC. These are shown in Table 6-1, below, along with NSPS Ja emission limits for comparison.

Table 6-1 Current Permit Limits for HOC and NSPS Ja limits for FCC Units

Pollutant	Averaging Period	Permit Emission Limit (ppmvd @ 0% O_2)	NSPS Ja Emission Limit (ppmvd @ 0% O_2)
PM	—	1 lb/1000 lb	1 lb/1000 lb (modified/ reconstructed)
SO_2	1-hr block	50	—
SO_2	7-day rolling average	50	50
SO_2	365-day rolling average	25	25
CO	1-hr block	500	500
NO_X	1-hr block	150	—
NO_X	7-day rolling average	74	80
NO_X	365-day rolling average	37	—

The emission limits in Table 6-1 are equivalent to or more stringent than Published TCEQ Guidelines for FCC units (Table 6-2, below). Also, since the permit currently specifies control requirements at least as stringent as those that will apply to the HOC Regenerator under NSPS Ja, requirements at 40 CFR § 52.21(j)(1) are satisfied.

Table 6-2 TCEQ Tier I BACT Guidelines for FCC Units

Pollutant	Emission Limit (1-hr, 0% O_2)	Emission Limit (annual, 0% O_2)
SO_2	300 ppmvd	100 ppmvd
NO_X	200 ppmvd	100 ppmvd
CO	500 ppmvd	—
PM	1 lb/100 lb coke burn off 15–20% opacity (6-min avg)	—
VOC	< 10 ppmvd	—

Step 1 of the three-tier process involves a review of recently-issued permits for the same type of facility to determine the level of control that has been accepted as BACT for similar projects. Valero has reviewed the recently-issued permits and RBLC entries summarized below. Since numerous refineries entered into Consent Decrees establishing emission limits for FCC units, and the consent decrees required that such requirements be incorporated into the refineries' operating permits, Valero has also reviewed several recently-approved consent decrees.

Table 6-3 Recently-approved Control Determinations for FCC Units

Data Source	Refinery	SO_2 Limits	PM Limits	NO_X Limits	CO Limits
RBLC (LA-0261)	Alon Krotz Springs, LA	25 ppmvd		80 ppmvd	
RBLC (TX-0587)	Phillips 66 Sweeny		0.67 lb/1000 lb		
RBLC (TX-0562) PSDTX653M1	CITGO East Plant	25 ppmvd (365 d) 50 ppmvd (7 d) 200 ppmvd (1 hr)	2 lb/1000 lb	20 ppmvd (365 d) 40 ppmvd (7 d) 180 ppmvd (1 hr)	100 ppmvd (365 d) 500 ppmvd (1-hr)
RBLC (DE-0020)	Valero Delaware City	25 ppmvd		20 ppmvd	
RBLC (OH-0308)	Sunoco Toledo			40 ppmvd	180 ppmvd
PSDTX762M3	TOTAL Port Arthur	50 ppmvd (1-hr)	0.82 lb/1000 lb	70 ppmvd (1-hr)	500 ppmvd (1-hr)
PSDTX402M3	BP Texas City	—	—[8]	—	—
2501A	Valero Houston	25 ppmvd (365 d) 50 ppmvd (7 d) 300 ppmvd (1 hr)	1 lb/1000 lb 20% opacity	19 ppmvd (365 d) 38 ppmvd (7 d) 200 ppmvd (1 hr)	500 ppmvd (1-hr)
39142	Valero Texas City	25 ppmvd (365 d) 50 ppmvd (7 d) 200 ppmvd (1 hr)	1 lb/1000 lb 15% opacity	19 ppmvd (365 d) 38 ppmvd (7 d) 200 ppmvd (1 hr)	400 ppmvd (365 d) 500 ppmvd (1 hr)
RBLC (TX-0290)	Shell Deer Park	25 ppmvd (365 d)		20 ppmvd (365 d)	
RBLC (AR-0061)	Lion Oil El Dorado, AK	25 ppmvd (365 d)	0.5 lb/1000 lb	20 ppmvd (365 d)	
CD	Marathon Texas City	25 ppmvd (365 d) 50 ppmvd (7 d)		20 ppmvd (365 d)	
CD	Valero (multiple refineries)		1 lb/1000 lb (each refinery)	33.4 ppmvd (365 d; system-wide coke burn-weighted)	500 ppmvd (1-hr; each refinery)
CD	ExxonMobil Joliet, IL	25 ppmvd (365 d) 50 ppmvd (7 d)		20 ppmvd (365-d) 40 ppmvd (7 d)	
CD	ExxonMobil Billings, MT	25 ppmvd (365 d) 50 ppmvd (7 d)		40 ppmvd (365-d) 80 ppmvd (7 d)	

The available information reviewed indicates that recent control determinations for FCC unit regenerators are consistent with emission limits in NSPS Ja, with the exception of annual average NO_X limits.[9] Particulate matter limits for NSPS Ja are 0.5 lb/1000 lb coke burn off (new units) and

[8] PSD BACT was triggered for H_2SO_4. The PDS identifies maximum H_2SO_4 emissions as 0.33 lb/1000 lb coke burn off, but this limit does not appear in the permit.

[9] EPA considered a 365-day rolling average NO_X limit of 20 ppmv for FCC regenerators during the NSPS Ja rulemaking, but ultimately rejected it based on economic and secondary environmental impacts. 73 Fed. Reg. 35846–35848. Jun. 24, 2008.

1.0 lb/1000 lb coke burn off (modified and reconstructed units), which may account for some of the variation between the observed PM emission limits. The current permit limits track NSPS Ja.

The only pollutant for which NSPS Ja requirements differ from control requirements observed in recent permits is NO_X. NSPS Ja limits NO_X emissions from FCC regenerators to 80 ppmvd (0% O_2) on a 7-day rolling average, while lower limits of 40 ppmvd (rolling 7 day average) and 20 ppmvd (rolling 365-day average) are observed in several recently-issued permits.

6.2.2 Three-tier analysis

6.2.2.1 Tier I

Based on the available information reviewed above, Valero believes that Tier I controls are equivalent to those specified in NSPS Ja, with the exception of NO_X. For pollutants other than NO_X, the current permit may be more stringent than NSPS Ja. Valero therefore believes that its current permits meets Tier I controls for pollutants other than NO_X.

Although review of available information yielded little information about recent control determinations for HCN, H_2SO_4, or GHG emissions from FCC regenerators, Valero believes that the following emission limits and work practices are consistent with Tier I BACT for these pollutants:

- HCN. Compliance with MACT UUU emission limitations for organic HAP.
- H_2SO_4. 0.35 lb/1000 lb coke burn off. This is comparable to the BACT determination for permit PSDTX1402M3 mentioned above in the footnotes to Table 6-3.
- GHG. Work practice consisting of operating the HOC with a high-conversion rate to minimize coke formation. This is consistent with the current operational philosophy for maximizing unit economics.

Valero believes that there are compelling technical differences between its FCC installation and those which have been issued permits with NO_X limits of 20 ppmvd or lower. These are listed below:

- The West Plant HOC is a “full burn” design, which means that catalyst is regenerated and coke is fully oxidized to CO_2 in one step, without the use of a CO boiler. Therefore, controls that would normally be applicable to a CO boiler (e.g., flue gas recirculation) are not technically feasible. Selective catalytic reduction (SCR) is also dis-preferred in practice at full burn units, with the majority (if not all) of SCR installations occurring on “partial-burn” FCC units with downstream CO boilers or process heaters.

- The most frequently used control device for achieving NO_X levels of 20 ppmvd or less on FCCs the LoTOx system. LoTOx is a control technology that uses ozone to oxidize insoluble NO_X compounds to soluble NO_X compounds, which are then recovered in the wet scrubber. It requires operation within a low temperature range (less than 300° F).[10] Based on the current configuration of the HOC and associated wet scrubber, Valero does not believe it is feasible to operate the system at optimal conditions (combination of adequate residence time and low stack temperature) without rebuilding the existing wet scrubber. Since wet scrubbers differ in their conduciveness to a LoTOx retrofit, Valero does not believe that the recent permit determinations capture this technical practicability issue.
- A large number of the permitted emission limits are based on Consent Decree requirements. Refinery Consent Decree limits are difficult to evaluate in BACT reviews for two main reasons: (1) they were negotiated so as to achieve maximum, system-wide reductions of NO_X emissions from all FCC Units owned by the respondent; (2) exact considerations (e.g., cost-effectiveness, level of mutually acceptable injunctive relief) are confidential and vary from refinery to refinery. The current NO_X permit limit for the HOC unit (37 ppmvd 365-day average) was ultimately the outcome of Valero's system-wide consent decree.

6.2.2.2 Tier II

Valero does not believe that there are similar industries for which applicable controls can be identified. While there exist other process plants that generate coke-burn off streams (e.g., propane dehydrogenation [CATOFIN process], steam cracking pyrolysis furnaces), these do not employ NO_X controls that could be readily applied to an FCC unit. Therefore, Valero believes that progression to Tier III is warranted.

6.2.2.3 Tier III

The Tier III analysis consists of a cost-effectiveness analysis following the EPA OAQPS Cost Manual and the 1990 NSR Workshop manual. In addition to cost-effectiveness, energy and environmental impacts of each control option are considered.

The following control technologies are available for NO_X emissions from FCC regenerators.

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[10] Jeff Coburn (RTI International) to Bob Lucas (EPA). Documentation of NO_X Control Cost Estimates. April 30, 2007. Docket item EPA-HQ-OAR-2007-0011-0089.

Table 6-4 Available Control Techniques for NO_X Emissions from FCC Regenerators

Control Technique	Effectiveness (% Reduction)
LoTOx™	80–90%
SCR (typically only used on "partial-burn" units)	70–90%
Non-Pt Combustion Promoters	30–50%
Control of Excess Oxygen Levels	20–40%

As noted above, LoTOx is a control technology which uses a chemical reagent (ozone) to convert insoluble NO_X to soluble compounds that can be removed with a wet scrubber. Since the same wet scrubber is otherwise used for control of PM and SO_2 emissions, LoTOx forms part of a comprehensive control system for FCC regenerator emissions. Unlike SCR, LoTOx does not require use of a catalyst to operate. However, it requires in situ generation of ozone, and therefore has utility requirements including electricity consumption and consumption of liquid oxygen. The last two listed control techniques both consist of limiting the amount of oxygen in the regenerator so that chemically-bound nitrogen is favorably converted to N_2 rather than to NO_X during combustion. Combustion promoters allow the FCC regenerator to operate with lower O_2 levels than would otherwise be necessary to comply with CO emission limits. Platinum-based combustion promoters may encourage NO_X formation, so alternatives to platinum are used in current-generation combustion promoters.

Each of the available options identified has been successfully demonstrated at other petroleum refineries and is assumed to be technically feasible. However, Valero has not been able to confirm the installation of SCR controls at any full burn FCC unit, and believes that SCR is normally dispreferred on technical grounds compared to other technologies in full burn units.[11] The pollutant stream from the regenerator poses greater reliability (catalyst plugging and fouling) issues than does the stream from a CO boiler or process heater. Because capital costs for SCR are similar to LoTOx,[12]

[11] With reference to Table 6-3, the Lion El Dorado, Marathon Texas City, Valero Houston, and Valero Texas City FCC units appear to be full burn units selecting LoTOx and not SCR. *See Petroleum Refinery Consent Decree Emission Reduction Assessment for Ozone and Regional Haze SIPs*. ENVIRON International Corporation. TCEQ Work Order 582-07-84005-01. Nov. 2007.
[12] Sadeghbeigi, A. *Fluid Catalytic Cracking Handbook*. Elsevier, 2011. At § 15.6.7.

and there exists a better data set for assessing LoTOx costs on full burn units, a separate economic impacts analysis has not been conducted for SCR.

For purposes of ranking the available control options, the use of non-platinum combustion promoters and control of excess oxygen are treated as the baseline controls since they are currently in use at the West Plant. Additionally, Valero has reviewed studies published by EPA[13] and by South Coast Air Quality Management District (SCAQMD)[14] considering the cost-effectiveness of NO_X control options for FCC units, including LoTOx and SCR. Both studies have found the two systems to have comparable cost-effectiveness levels. SCR additionally has more adverse secondary environmental impacts (in the form of ammonia slip and associated sulfate particulate emissions) than LoTOx. Since LoTOx is currently the more widely-used control system for full burn FCC Units and Valero has experience with its costs from projects at other Valero refineries, it is the basis of the cost-effectiveness calculation for achieving a limit of 20 ppmvd (0% O_2, rolling 365-day average).

Economics Impact Analysis

A quantitative cost analysis was performed as required by TCEQ guidance, and the EPA OAQPS Air Pollution Control Cost Manual (APCCM) was consulted for developing the analysis.[15] The results of the analysis are presented in Table 6-5, and key assumptions used in developing the analysis are discussed and justified immediately below.

The total capital cost for retrofit installation of LoTOx at the West Plant was estimated based on post-construction capital costs for the 2009 retrofit installation of a comparable unit at Valero's St. Charles, LA Refinery. Costs were scaled up based on plant capacity (expressed as maximum coke burn capacity), and also scaled up for inflation. The total installed capital cost for the St. Charles project was $ 39.05 MM. Valero believes that the use of a post-construction cost report for a similar project rather than a study-level estimate for the West Plant is preferable because certain line items (viz. Retrofit Factor, Contingency) recommended by the APCCM which contribute significantly to the uncertainty of an estimate can be eliminated.[16]

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[13] Id. at 4.
[14] SCAQMD. Preliminary Draft Staff Report: Proposed Amendments to Regulation XX. Regional Clean Air Incentives Market (RECLAIM). NO_X RECLAIM. July 21, 2015. Henceforth "RECLAIM Report."
[15] APDG 6110 at 45.
[16] Cf. APCCM at 2-3–2-5, 2-28–2-30.

The capacity scaling factor is the ratio of the design coke burn rate of the West Plant HOC unit (130,000 lb/hr) to the same figure for the St. Charles unit (90,000 lb/hr), raised to the power of 0.67.[17] The capacity scaling factor is therefore 1.28.

The scaling factor for inflation is based on the Urban Consumer Price Index (CPI),[18] Jan. 2009–Aug. 2021 yields a scaling factor of (273.567/211.933) = 1.29.

In order to estimate direct annual costs for operation of a LoTOx unit, Valero used actual operating expense data for the Valero Texas City Refinery FCC Unit, which has a LoTOx unit installed. Because utility consumption costs are driven by local and regional factors, data from the Texas City Refinery data was selected based on its relative proximity to the West Plant. Although the West Plant HOC has a higher throughput rate than the Texas City FCC unit, it was conservatively assumed that direct annual costs would be comparable (i.e., a scale-up factor of 1.0 was selected).[19] The most significant categories of direct annual costs are the cost of oxygen and electricity for operating the associated ozone generator. Direct annual costs of $0.85 MM are estimated.

Indirect annual costs, including insurance, administrative charges, and capital recovery were calculated following the APCCM,[20] and an equipment life of n=25 years was assumed for calculating the capital recovery factor (CRF). A sample calculation for the CRF is given below.

$$\mathrm{CRF} = \frac{i(1+i)^n}{(1+i)^n - 1} = \frac{0.07(1.07)^{25}}{(1.07)^{25} - 1} = 0.086$$

For purposes of determining the emissions reduction associated with a control alternative, the reduction for a pollutant in tons per year is equal to the “uncontrolled” baseline emission rate minus the controlled emission rate, where the baseline emission rate is “a realistic scenario of upper boundary uncontrolled emissions for the source.”[21] The current NO_X emission limit for the HOC is

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[17] This is a customary figure used for economic analysis at Valero, and is in line with published values. E.g., 0.6 is given in Perry, R. H. and Chilton, C. H. *Chemical Engineers’ Handbook*. 5th ed. New York: McGraw-Hill Book Company. 1973. Eqn. 25-9; 0.7 is used in the RECLAIM Report.
[18] U.S. Bureau of Labor Statistics. Published Monthly. bls.gov/cpi
[19] Reported throughput capacities are 95,500 BPSD and 86,000 BPSD, respectively. U.S. Energy Information Administration. Refinery Capacity Report (2019). https://www.eia.gov/petroleum/refinerycapacity/
[20] APCCM guidelines include a discount rate of 7%, insurance costs based on 1% of the total capital investment (TCI), and administrative charges based on 2% of the TCI.
[21] EPA OAQPS. NSR Workshop Manual. 1990. At B.37.

473.81 tpy, which is based on a NO_X limit of 37 ppmvd. Lowering this limit to 20 ppmvd would correspond to a reduction of 218 tpy.

The analysis is presented in Table 6-5.

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Table 6-5 Cost-effectiveness analysis

Item	Description	Basis	Value
Capital Costs			
1	Similar Project Cost	Post-construction report for St. Charles Refinery LoTOx unit retrofit.	$ 39,054,171.00
2	Cost (scaled for unit size)	Ratio of design coke burn rates raised to 0.67 power.	$ 49,965,126.15
3	Cost (scaled for inflation to 2021 dollars)	IHS Markit Downstream Capital Cost Index.	$ 64,455,012.73
Direct Costs			
4	Purchased Equipment Costs	Included in item 1	
5	Instrumentation	Included in item 1	
6	Tax	Included in item 1	
7	Freight	Included in item 1	
8	Foundations	Included in item 1	
9	Electrical	Included in item 1	
10	Piping	Included in item 1	
11	Instrumentation	Included in item 1	
12	Painting	Included in item 1	
Indirect Costs			
13	Engineering	Included in item 1	
14	Construction/Demolition	Included in item 1	
15	Inspection/Testing	Included in item 1	
16	Total Capital Investment	Item 3	$ 64,455,012.73
Annual Costs			
Direct Costs			
17	Raw Materials (Oxygen)	Texas City Refinery, 2019 data	$442,996.30
18	Utilities (Electricity)	Texas City Refinery, 2019 data	$210,388.00
19	Maintenance	Texas City Refinery, 2017--2018 average	$200,000.00
20	Total Direct Annual Costs	Sum Items 12--13	$853,384.30
21	Total Direct Annual Costs (scaled)	Scaling factor of 1.0.	$853,384.30
Indirect Costs			
22	Property Taxes	TAX CODE § 11.31	$0.00
23	Insurance and Administrative Charges	3% of TCI (APCCM § 2.5.5.8).	$ 1,933,650.38
24	Capital Recovery	CRF based on i=0.07 and n=25 yrs (APCCM § 1.5.2)	$ 5,543,131.10
Recovery Credits			
25	Materials	No materials recovered.	$0.00
26	Energy	No additional energy recovery.	$0.00
Totals			
27	Total Annualized Costs	Sum Items 21--26	$ 8,330,165,78
Cost Effectiveness			
28	NO_X Emission Rate (Current PTE)		473.81 tpy
29	NO_X Emission Rate (20 ppmv)		256.11 tpy
30	Emissions Reduction	Difference between Items 29 and 28	217.70 tpy
31	Cost Effectiveness	Item 27 / Item 30	**$ 38,264 per ton**

Summary of Tier III Analysis

When the baseline control technique (excess oxygen control and non-Pt combustion promoters) is compared with the alternative control technique, considering economic, energy, and environmental impacts, Valero believes that an emission limitation of 20 ppmvd (based on LoTOx technology) has unacceptable impacts and that a limit of 37 ppmvd (based on the combined operational practices noted) satisfies BACT requirements.

Table 6-6 Comparison of Control Alternatives

Emission Limitation	Reference Technology	Emission Reduction (tpy)	Annualized Cost ($/yr)	Cost Effectiveness ($/t)	Energy and Environmental Impacts
20 ppmvd	LoTOx	218	8.92 MM	38,264	Electricity generation, vaporizer, ozone slip.
37 ppmvd	Control of excess oxygen, non-Pt combustion promoter	—	—	—	Negligible.

6.3 Boiler

Valero will construct a new boiler (EPN 30-B-05) to provide steam for the project. The boiler will emit typical products of combustion including NO_X, VOC, CO, PM/PM_{10}/$PM_{2.5}$, and SO_2. The boiler will have maximum hourly and annual average firing rates of 462 MMBtu/hr and 420 MMBtu/hr, respectively. Results from an RBLC query for similar sized refinery fuel gas fired boilers are provided in Appendix C. In addition, the following relevant permits were identified and reviewed.

Table 6-7 Permits for Boilers

State	Permit No.	Owner/Operator	Site/Plant	RBLC ID
IL	6050052	Phillips 66 Company	Wood River Refinery	IL-0115
TX	49138, PSDTX1506M1, PSDTX768M2, PSDTX799M1, PSDTX802M1, PSDTX932M1, PSDTX992M2, GHGPSDTX161M1	ExxonMobil Oil Corporation	ExxonMobil Beaumont Refinery	-
TX	85872, PSDTX1158M1	Phillips 66 Company	Borger Refinery	TX-0763
TX	107939, PSDTX1342	C3 Petrochemicals LLC	Propane Dehydrogenation Plant	TX-0744
TX	107764, PSDTX1340	Natgasoline LLC	Gas to Gasoline Plant	TX-0656
TX	6825A, PSDTX49M2, GHGPSDTX167M	The Premcor Refining Group Inc.	Port Arthur Refinery	TX-0906

Nitrogen Oxide Emissions

Valero proposes a 0.015 lb/MMBtu hourly and annual emission limit of NO_X associated with the boiler included in this application, which will be fired with refinery fuel gas. The emission limits proposed will be met with the use of ultra-low NOx burners and SCR. A review of recently issued permits noted in the RBLC for similar sized refinery fuel gas fired boilers indicate emissions controls for NO_X that include the use of ultra-low NO_X burners and/or SCR to meet NO_X emission limits that range from 0.01 lb/MMBtu to 0.04 lb/MMBtu. TCEQ project 303824 (Permit 49138) recently authorized two 442.9 MMBtu/hr boilers with an emission limit of 0.015 lb/MMBtu when firing refinery gas, to be achieved with ultra-low NOx burners and SCR.

During transient and MSS activities, Valero proposes a 0.15 lb/MMBtu hourly emission limit of NO_X for the boiler included in this application. The TCEQ MSS Model permit provides a waiver of NO_X emission limits during planned MSS activities but specifies that MAERT limits continue to apply.

Valero's NO_X BACT proposal is consistent with recent TCEQ BACT determinations and control technologies shown in the RBLC. Therefore, the proposed control is considered appropriate BACT.

Carbon Monoxide Emissions

Emissions of CO associated with the boiler are the result of incomplete fuel combustion. Conditions that can increase CO formation include low combustion temperatures, insufficient residence time or lack of oxygen in the combustion zone caused by low air-to-fuel ratio and inadequate mixing.

Valero proposes good combustion and proper design to meet a CO concentration limit of 50 ppmvd at 3% O_2 (0.036 lb/MMBtu) as BACT for the boiler on an annual average basis. A review of recently issued permits noted in the RBLC for similar sized refinery gas fired boilers indicate good combustion practices and proper equipment design and operation as the only control methods used to reduce CO emissions. CO emission limits range from 0.02 lb/MMBtu to 0.036 lb/MMBtu. The permit for the 0.02 lb/MMBtu (30-day average) emission limit (RBLCID IL-0115, Permit 6050052) indicates BACT for CO is maintaining and operating the affected boiler with good combustion practices. The next lowest emission limit in the RBLC entries is 0.0363 lb/MMBtu (50 ppmvd at 3% O_2), which is more consistent with expected CO concentrations for similar sized combustion units employing good combustion practices. TCEQ project 303824 (Permit 49138) recently authorized two 442.9 MMBtu/hr boilers with an emission limit of 50 ppmvd at 3% O_2 on an annual basis to be achieved through good combustion practices.

On an hourly basis, Valero proposes a CO concentration limit of 100 ppmvd at 3% O_2 for the boiler included in this application. This is consistent with TCEQ permit 49138. During transient and MSS activities, Valero proposes a limit of 500 ppmvd at 3% O_2 (0.363 lb/MMBtu). The TCEQ MSS Model permit provides a waiver of CO emission limits during planned MSS activities but specifies that MAERT limits continue to apply.

The proposed concentration limits are consistent with recent TCEQ BACT determinations and control technologies shown in the RBLC. Therefore, the proposed limits are considered appropriate BACT.

Particulate Matter Emissions

Emissions of PM associated with the boiler result from inert solids in the fuel, combustion air and unburned hydrocarbons that form particles in the exhaust stream. Valero proposes to use good combustion practices and clean burning gaseous fuel to maintain opacity less than 5%. A review of recently issued permits noted in the RBLC for similar sized refinery gas fired boilers indicate good combustion practices and proper equipment design and operation as the only control methods used to reduce PM emissions. When converted to consistent units of lb/MMBtu, PM emission limits in the RBLC range from 0.0041 lb/MMBtu to 0.01 lb/MMBtu. TCEQ projects 303824 (Permit 49138) recently authorized two 442.9 MMBtu/hr boilers with control of PM emissions to be achieved through good combustion practices and firing clean-burning gaseous fuel. Permit 49138 also specifies an opacity limit of 5%.

The proposed opacity limit satisfies BACT and is consistent with recent TCEQ BACT determinations and control technologies shown in the RBLC for similar sized boilers. Therefore, the proposed operating practices are considered appropriate BACT.

Sulfur Dioxide Emissions

Emissions of SO_2 are formed through combustion of sulfur containing fuel. Valero proposes to burn refinery fuel gas with a maximum H_2S concentration in the fuel of 87 ppmv on a 1-hour average per Standard Condition 15 in Permit 38754. On an annual basis, the H_2S concentration in the fuel will be limited to 60 ppmv per NSPS Ja. A review of recently issued permits noted in the RBLC for similar sized refinery gas fired boilers included no entries for SO_2. TCEQ project 303824 (Permit 49138) recently authorized two 442.9 MMBtu/hr boilers with refinery fuel gas specifications based on the requirements of NSPS Subparts J and Ja, which allow a less stringent H_2S concentration in the fuel of 162 ppmv on a 1-hour average.

Valero's proposed use of low sulfur complying with NSPS standards is consistent with recent TCEQ BACT determinations and control technologies for similar sized boilers firing refinery fuel gas. Therefore, the proposed fuel specification is considered appropriate BACT.

Volatile Organic Compound Emissions

Emissions of VOC from gas-fired boilers are the result of incomplete fuel combustion. The same operating parameters that result in higher emissions of CO will result in higher emissions of VOC. Valero proposes to minimize VOC emissions by maintaining good combustion efficiency and proper combustion design and practices. Good combustion and design practices have historically been used to meet VOC BACT for similar sized refinery fuel gas fired boilers. A review of recently issued permits noted in the RBLC for similar sized refinery gas fired boilers indicate good combustion and operating practices and clean fuel as the only control methods used to reduce VOC emissions. TCEQ projects 216446 and 216464 (Permit 85872, PSDTX1158M1) specified good combustion practices as BACT for VOC.

The proposed design and operating practices satisfy BACT and are consistent with recent TCEQ BACT determinations and control technologies shown in the RBLC for similar sized refinery fuel gas fired boilers. Therefore, the proposed operating practices are considered appropriate BACT.

Ammonia Emissions

Ammonia emissions occur due to slip of excess ammonia from the SCR system. Valero proposes to control the ammonia injection system to minimize ammonia slip to a maximum outlet concentration of 10 ppmvd at 3% O_2 from the stack. A review of recently issued permits noted in the RBLC for similar sized refinery gas fired boilers included no entries for ammonia. Recently issued TCEQ project 303824 (Permit 49138) limited ammonia slip from the SCR to a concentration of 10 ppmvd at 3% O_2.

The proposed emission limit satisfies BACT and is consistent with recent TCEQ BACT determinations and control technologies for similar sized refinery fuel gas fired boilers. Therefore, the proposed emission limit is considered appropriate BACT.

Greenhouse Gas Emissions

GHG emissions from fuel combustion result from the conversion of carbon in the fuel to CO_2. Fuels used in industrial processes and power generation typically include coal, fuel oil, natural gas, and process fuel gas. Valero proposes to burn refinery fuel gas and/or natural gas in the proposed boiler. 40 CFR Part 98, Tables C-1 and C-2 emission factors for GHGs indicate that fuel gas will result in the lower emissions of GHGs in comparison to coal or fuel oil. Valero proposes to minimize GHG emissions through the use of low carbon fuel (refinery fuel gas), good combustion practices, and proper operation and maintenance to achieve a net thermal efficiency of 78%.

A review of recently issued permits noted in the RBLC indicate control of GHG emissions from similar sized boilers through good combustion practices, energy efficient design, and proper operation and maintenance. One RBLC entry for a 2014 Texas permit (RBLCID TX-0744 for C3 Petrochemicals LLC) includes a thermal efficiency requirement of 82%. The C3 Petrochemicals plant was never constructed; therefore, the 82% thermal efficiency has not been demonstrated in practice. A more recent Texas permit issued by TCEQ in 2019 (Permit 148643, PSDTX1528, GHGPSDTX175) specified a minimum thermal efficiency of 77% (LHV) for three large boilers equipped with SCR, with BACT as use of good combustion/operating/maintenance practices, numerical limitations, and low carbon fuel for the boilers.

The proposed operating practices and minimum efficiency are consistent with recent TCEQ BACT determinations and control methods shown in the RBLC. Therefore, the proposed operating practices are considered appropriate BACT.

6.4 Cooling Tower

One cooling tower (EPN: HOC-PP-CT) will be constructed and have the potential to emit pollutants that include VOC, PM, PM_{10} and $PM_{2.5}$. Results from an RBLC query for similar cooling towers are provided in Appendix C. In addition, the following relevant permits were identified and reviewed.

Table 6-8 Permits for Cooling Towers

State	Permit No.	Owner/Operator	Site/Plant	RBLC ID
FL	1050472-001-AC	Nucor Steel Florida, Inc.	Nucor Steel Florida Facility	FL-0368
TX	978B	BASF Corporation	BASF Beaumont Agro Plant	-
TX	18142, N278	Phillips 66 Company	Sweeny Refinery	TX-0877
TX	109923, PSDTX1502, GHGPSDTX159	Buckeye Texas Processing, LLC	Buckeye Texas Processing Corpus Christi Facility	TX-0861
TX	160299, PSDTX1576, GHGPSDTX200	Diamond Green Diesel	Diamond Green Diesel Port Arthur Facility	TX-0905

Volatile Organic Compound Emissions

Valero proposes control of VOC emissions from the cooling tower through non-contact cooling tower design and monthly monitoring of VOC in the water performed per Appendix P procedures or an approved equivalent. In addition, VOC leaks above a concentration of 0.08 ppmw will be repaired as soon as possible, but no later than the next scheduled shutdown of the process unit in which the leak occurs. A review of recently issued permits noted in the RBLC for similar sized cooling towers indicate the same design and monitoring methods to reduce VOC emissions. TCEQ project 302826 (Permit 978B) recently authorized a cooling tower with non-contact design, monthly monitoring, and leaks repaired as soon as possible.

The proposed control is consistent with recent TCEQ BACT determinations and control technologies shown in the RBLC. Therefore, the proposed control is considered appropriate BACT.

Particulate Matter Emissions

Diamond proposes use of drift eliminators with a vendor guaranteed drift < 0.001%. A review of recently issued permits noted in the RBLC for similar sized cooling towers indicate drift limits ranging from 0.0005% to 0.005% to be achieved through the use of drift eliminators. Recently issued permits in Florida and Texas support a drift rate of 0.001% is BACT. TCEQ project 302826 (Permit 978B) recently authorized a cooling tower with a drift limit of <0.001% achieved by drift eliminators.

The proposed control is consistent with recent TCEQ BACT determinations and control technologies shown in the RBLC. Therefore, the proposed control is considered appropriate BACT.

6.5 Equipment Leak Fugitives

Special Conditions 31–33 of the permit currently require quarterly instrumental monitoring of accessible valves, flanges, and pump and compressor seals in VOC service, using a leak definitions of 500 ppmv (valves and flanges) and 2000 ppmv (pump and compressor seals). Since gas detectors used for LDAR inspections are capable of detecting leaks of methane, these requirements also limit emissions of GHG. These requirements (i.e., 28VHP + 28CNTQ) are comparable to the most stringent work practice requirements for minimizing piping leaks in any of the permits reviewed, and Valero believes that they satisfy BACT requirements for VOC and GHG emissions from equipment leaks.

6.6 Merox Unit Vent

Tier I BACT for process vents of non-halogenated VOC is use of a flare, any oxidizer, adsorber, absorber/scrubber, etc. In the case of the Merox Unit off-gas vent, the control used is combustion in an existing SRU Tail Gas Incinerator and/or the firebox of the new boiler. The use of the SRU Tail Gas Incinerator and/or the firebox of the new boiler is equivalent to a vapor combustor, and they will meet or exceed the required 99% destruction efficiency for vapor combustors. Therefore, the control proposed for the Merox Unit vent satisfies TCEQ's current Tier I BACT guidelines.

6.7 Sulfur Recovery Units

Although the Sulfur Recovery Units (SRUs) are not being modified by this project, Valero is nonetheless addressing BACT on the SRUs as a part of this application. Because the project will generate additional sour water and because the project involves the installation of a new sour water stripper, Valero is proposing the following requirements for the sour water storage system.

The refinery currently operates a large sour water tank (Tank 83TK25, at 80,000 barrels capacity). This tank feeds an existing Sour Water Stripper and the overhead acid gas from that stripper is routed to any one of three existing SRU trains. The new sour water stripper will likewise have the ability to go to any one of the three existing SRU trains. The multiple SRU trains provide redundancy to one another. In the unlikely event that one train trips off line, acid gas flow can rapidly be diverted to any of the other two SRU trains, thereby minimizing the risk for acid gas flaring events. Because this project will result in only a small incremental increase in sulfur production (< 28 LTPD), the SRUs themselves will not require any physical or operational modifications and the SRUs' permitted emission limits are not being increased.

TCEQ's Tier I boilerplate BACT language for sour water calls for 3 days of retention time in order to allow good separation of oil/water and help prevent hydrocarbon carryover into the SRU. Hydrocarbon carryover could lead to a trip of the SRU and result in acid gas flaring. These boilerplate conditions were established by TCEQ in the 1990's when many refineries still had single SRU systems without redundancy/backup. In light of the industry's improved track record, brought about by the installation of redundant SRU trains and advanced process control systems, the TCEQ began in 2008 allowing 2.0 days of sour water retention coupled with: 1) a requirement for a hydrocarbon detection system in the sour water tank effluent line, paired with an automatic flow diversion system designed to shut off flow to the sour water stripper(s) in the event that unacceptable levels of hydrocarbons are detected; and 2) a requirement to engage a 3rd-party consultant to investigate any acid gas flaring events that might be traceable to hydrocarbon carryover from the sour water system and, should such hydrocarbon carryover be confirmed to have been caused by inadequate retention time, a requirement to submit to the TCEQ within 60 days either a proposed implementation schedule for achieving 3 days of retention time or design information and an implementation schedule for a proposed alterative.

Since 2008, Valero's Port Arthur Refinery (Premcor Refinery) has been operating under the 2.0-day retention time requirements described above (see TCEQ Permit No. 6825A, Special Conditions 27.D and 27.F). Since that time (13 years), the Port Arthur refinery has not experienced a single acid gas flaring event due to sour water tank hydrocarbon carryover. The Valero Texas City Refinery has a similar permit condition (see TCEQ Permit 39142, Special Condition 35) and that refinery has not had an acid gas flaring event in over 15 years. Both of these are examples which demonstrate the effectiveness of the 2.0-day retention time requirements in reducing the risk for acid gas flaring events. Although the Valero Corpus Christi West Plant does not yet have a retention time requirement, it has not experienced an acid gas flaring event due to hydrocarbon carryover from the sour water tank in at least 13 years.

Valero is proposing for this project a set of requirements equivalent to those in the Premcor Refinery permit (TCEQ Permit No. 6825A, Special Conditions 27.D and 27.F). In addition, Valero is proposing that during MSS conditions (i.e., turnaround/maintenance on the sour water tank), a minimum of 1.5 days retention time be maintained, which is consistent with the requirements contained in Special Condition No. 102 of TCEQ Permit 6825A (Premcor Refining).

6.8 Wastewater Collection System

A Carbon Absorption System (CAS) (EPN CAS-HOCPP) will be installed on the new wastewater lift station in the new Gas Plant to control VOC emissions. The CAS will consist of two adsorbers, connected in series and operating in standard lead/lag configuration. The outlet of the first adsorber is the breakthrough monitoring point. The frequency of monitoring depends on the inlet benzene loading and expected frequency of breakthrough, based on vendor data. The carbon systems are essentially 100% efficient for control of benzene and other organic constituents until breakthrough is detected.

Breakthrough is defined as 5 ppmv benzene or 100 ppmv VOC at the outlet of the primary canister. If breakthrough is detected, the carbon adsorber is considered spent and must be replaced. When breakthrough is reached on the primary (lead) adsorber, the secondary (lag) adsorber is also monitored at the outlet for breakthrough. If the secondary canister has not broken through, it is moved to the primary position and a fresh adsorber is moved into the secondary position within 24 hours. If the secondary canister has also broken through, then both canisters will be replaced within 24 hours.

The use of dual carbon adsorbers operated in series is BACT for controlling wastewater VOC emissions.

6.9 Maintenance, Startup, and Shutdown Emissions

The purpose of any maintenance activity is to effectively and efficiently complete any needed repairs while minimizing product losses, limiting process unit downtime, and ensuring worker safety.

Preparation for essentially all maintenance and shutdown activities at the new Gas Plant involves the following:

1. Depressurizing process vessels to flare;
2. Steam purging and/or nitrogen sweeping the process vessels to flare

Purges to the flare are minimized so as to not lose valuable product, which, in turn, minimizes emissions to the atmosphere. These procedures, when implemented together, represent Best Management Practices (BMPs) for reducing and eliminating emissions from MSS activities.

As was discussed above, process vessel purge gases will be routed to one of three West Plant flares. Each of these flares has been designed for smokeless operation and is operated as required by the conditions of Permit No. 38754 to ensure 98% destruction of any organic or sulfur compounds contained in the purge gas. Valero proposes to flare purge gas from any process vessels that contained liquids with vapor pressures equal or greater than 0.5 psia until a prescribed condition is met. Examples of these conditions include, but are not limited to:

- VOC partial pressure of less than 0.5 psia,
- 34,000 ppmv or less, measured as methane,
- 50 % or less of the Lower Explosive Limit (LEL), or
- three times the volume of the vessel has been nitrogen or steam purged.

This proposal represents BACT for maintenance purging activities.

Any residual process liquids and vapors are reduced to the best extent possible via process fluid recovery, followed by flaring before opening the process vessels for inspection and maintenance. Process vessel vapor space will also be tested with a gas sensor to confirm the vessel is “VOC-free” and, therefore, safe for worker entry. In addition to recovering valuable process fluids and limiting worker exposure to potential adverse health effects, these procedures have an additional benefit of reducing emissions to the atmosphere. These procedures represent best management practice and are proposed as BACT.

Section 7
Major New Source Review

This section identifies the Major NSR requirements applicable to the project.

7.1 Nonattainment New Source Review

The project is located in an attainment area for all pollutants. Nonattainment NSR requirements do not apply.

7.2 Prevention of Significant Deterioration (PSD) Review

The project is located in an attainment area for at least one pollutant. The West Plant is a named source (Petroleum Refinery) with a Potential to Emit (PTE) of 100 tpy or greater for at least one pollutant. Based on the applicability analysis described further below, the HOC Reconfiguration Project constitutes a major modification for purposes of PSD review. Based on the netting analysis, substantive PSD requirements (control technology review and air quality analysis) apply to the following pollutants: NO_X, CO, VOC, SO_2, PM, PM_{10}, $PM_{2.5}$, and H_2SO_4. BACT requirements apply to GHG.

7.3 Project Emissions Increases

Project emissions increases for each PSD pollutant are summarized in Table 7-1.

7.4 PSD Permitting Requirements

PSD permitting requirements specified in 30 TAC § 116.160(c) are addressed in other sections of this application as follows:

- Source information (40 CFR § 52.21(n)) is addressed in Form PI-1, Sections 2–5, and Appendix A.
- The source impact analysis and air quality analysis (40 CFR §§ 52.21(k)–(m)) are addressed in Section 9.10, and will be addressed in additional detail in the Air Quality Analysis (AQA) to be submitted on TCEQ request.
- The required control technology review (40 CFR § 52.21(j)) is contained in Sections 6–8 and Appendix C.

Table 7-1
PSD Emission Summary
HOC Reconfiguration Project
Valero Refining - Texas - West Plant Refinery, Corpus Christi

EPN(s)	FIN(s)	Source Description	CO			NO_X			VOC			PM		
			Baseline	PTE	Increase	Baseline	PTE	Increase	Baseline	PTE	Increase	Baseline	PTE	Increase
New/Modified Sources														
121	24-ST-01	Heavy Oil Cracker (HOC) Belco Scrubber	1402.67	1559.15	156.48	302.72	473.81	171.09	99.11	122.74	23.63	362.89	569.40	206.51
121/ 30-B-05	MEROX	MEROX Unit			0.00			0.00	0.00	1.05	1.05			0.00
30-B-05	30-B-05	Boiler	0	70.84	70.84		30.14	30.14		10.25	10.25		14.16	14.16
HOC-PP-CT	HOC-PP-CT	Cooling Tower			0.00			0.00		4.78	4.78		3.42	3.42
Various	Various	Piping Fugitives			0.00			0.00			29.33			0.00
MSS Caps	MSS Caps	MSS			40.74			6.98			0.39			1.55
Affected Sources														
17	70-TK-110	Gasoline Blendstock Tank (70-TK-110)									0.15			
187	83-TK-25	Sour Water Tank									0.18			
164/165	50-TK-64/65	Iso-octene Tanks			0.00			0.00			0.10			0.00
13	70-TK-105	Distillate Storage Tanks									0.49			
7/8/34/35	-TK-95/96/97/	Distillate Storage Tanks			-						0.36			
121	SRU, SCOT	Sulfur Recovery			16.91			3.70			0.26			8.40
118	13-H-01A. 13-H-01B, 13-H-01C	SMR (Heater Combustion)			4.09			6.60			0.63			0.83
118	SMR-VENT	SMR (Hydrogen Production)												
150	47-H-01. 47-H-02, 47-H-03, 47-H-04	HCU Heaters	0.14	24.38	24.24	16.21	48.76	32.55	2.87	4.38	1.51	3.73	6.06	2.33
Various (See Table B-8)	Various (See Table B-8)	Wastewater Treatment			1.74			0.42			4.89			0.00
SHIP-FUG	SHIP FUG	Loading - Ship Fugitives									0.76			
VRU	VRU	Loading - MVRU									0.96			
TRUCKFUG	LOADINGFUG	Loading - Truck Fugitives									1.30			
TRUCKCOMB	T-RACK	Loading - Truck Combustor			1.70			0.85			0.16			0.03
		Project Total:			316.74			252.34			81.17			237.22
		Contemporaneous Changes:			96.54			46.49			29.54			4.52
		Total:			413.28			298.82			110.71			241.74
		PSD Significance Level:			100			40			40			25
		Subject to PSD Review:			Yes			Yes			Yes			Yes

Table 7-1
PSD Emission Summary
HOC Reconfiguration Project
Valero Refining - Texas - West Plant Refinery, Corpus Christi

EPN(s)	FIN(s)	Source Description	PM_{10}			$PM_{2.5}$			SO_2			H2SO4		
			Baseline	PTE	Increase	Baseline	PTE	Increase	Baseline	PTE	Increase	Baseline	PTE	Increase
New/Modified Sources														
121	24-ST-01	Heavy Oil Cracker (HOC) Belco Scrubber	362.89	569.40	206.51	362.89	569.40	206.51	47.01	420.12	373.11	30.74	199.30	168.56
121/ 30-B-05	MEROX	MEROX Unit			0.00			0.00	0.00	16.91	16.91			0.00
30-B-05	30-B-05	Boiler		14.16	14.16		14.16	14.16		21.15	21.15		0.00	0.00
HOC-PP-CT	HOC-PP-CT	Cooling Tower		0.81	0.81		0.01	0.01			0.00			0.00
Various	Various	Piping Fugitives			0.00			0.00			0.00			0.00
MSS Caps	MSS Caps	MSS			1.55			1.55			1.66			
Affected Sources														
17	70-TK-110	Gasoline Blendstock Tank (70-TK-110)												
187	83-TK-25	Sour Water Tank												
164/165	50-TK-64/65	Iso-octene Tanks			0.00			0.00			0.00			
13	70-TK-105	Distillate Storage Tanks												
7/8/34/35	-TK-95/96/97/	Distillate Storage Tanks												
121	SRU, SCOT	Sulfur Recovery			8.40			8.40			7.45			
118	13-H-01A. 13-H-01B, 13-H-01C	SMR (Heater Combustion)			0.83			0.83			0.09			
118	SMR-VENT	SMR (Hydrogen Production)												
150	47-H-01. 47-H-02, 47-H-03, 47-H-04	HCU Heaters	3.73	6.06	2.33	3.73	6.06	2.33	0.81	8.63	7.82			
Various (See Table B-8)	Various (See Table B-8)	Wastewater Treatment			0.00			0.00			0.03			
SHIP-FUG	SHIP FUG	Loading - Ship Fugitives												
VRU	VRU	Loading - MVRU												
TRUCKFUG	LOADINGFUG	Loading - Truck Fugitives												
TRUCKCOMB	T-RACK	Loading - Truck Combustor			0.03			0.03			0.00			
		Project Total:			234.61			233.81			428.23			168.56
		Contemporaneous Changes:			4.52			4.52			19.46			0.00
		Total:			239.13			238.33			447.68			168.56
		PSD Significance Level:			15			10			40			7
		Subject to PSD Review:			Yes			Yes			Yes			Yes

VAL_000077

Table 7-1
PSD Emission Summary
HOC Reconfiguration Project
Valero Refining - Texas - West Plant Refinery, Corpus Christi

EPN(s)	FIN(s)	Source Description	H2S			CO2e		
			Baseline	PTE	Increase	Baseline	PTE	Increase
New/Modified Sources								
121	24-ST-01	Heavy Oil Cracker (HOC) Belco Scrubber	0.00	0.00	0.00	1,641,332	2,457,772	816,440
121/ 30-B-05	MEROX	MEROX Unit	0.00	0.004	0.00			
30-B-05	30-B-05	Boiler		0.00	0.00	0	222,594	222,594
HOC-PP-CT	HOC-PP-CT	Cooling Tower			0.00			
Various	Various	Piping Fugitives			0.06			90
MSS Caps	MSS Caps	MSS			0.00			26
Affected Sources								
17	70-TK-110	Gasoline Blendstock Tank (70-TK-110)						
187	83-TK-25	Sour Water Tank						
164/165	50-TK-64/65	Iso-octene Tanks			0.00			
13	70-TK-105	Distillate Storage Tanks						
7/8/34/35	-TK-95/96/97/	Distillate Storage Tanks						
121	SRU, SCOT	Sulfur Recovery			0.50			4,990
118	13-H-01A. 13-H-01B, 13-H-01C	SMR (Heater Combustion)						5,882
118	SMR-VENT	SMR (Hydrogen Production)						20,854
150	47-H-01. 47-H-02, 47-H-03, 47-H-04	HCU Heaters				55,660	94,885	39,225
Various (See Table B-8)	Various (See Table B-8)	Wastewater Treatment			0.000			371
SHIP-FUG	SHIP FUG	Loading - Ship Fugitives						
VRU	VRU	Loading - MVRU						
TRUCKFUG	LOADINGFUG	Loading - Truck Fugitives						
TRUCKCOMB	T-RACK	Loading - Truck Combustor			-			397
		Project Total:			0.56			1,110,869
		Contemporaneous Changes:			NA			0
		Total:			0.56			1,110,869
		PSD Significance Level:			10			75,000
		Subject to PSD Review:			No			Yes

Section 8
Federal Rule Applicability Analysis

8.1 Introduction

This section discusses select federal performance standards (NSPS and NESHAP) applying to portions of the West Plant affected by the project.

8.2 New Source Performance Standards (NSPS)

8.2.1 Subpart J— Petroleum Refineries

The HOC is currently subject to NSPS J because it meets the definition of fluid catalytic cracking unit (FCCU) (40 CFR § 60.101). NSPS J sets limits on emissions of particulate matter, opacity, carbon monoxide, and sulfur oxides from FCCU catalyst regenerators. NSPS J additionally limits the content of hydrogen sulfide combusted in fuel gas combustion devices. Currently effective permit requirements are more stringent than the limits of NSPS J.

8.2.2 Subpart Ja Petroleum Refineries (Constructed, Modified or Reconstructed After May 14, 2007)

NSPS Ja specifies certain emission limits and continuous monitoring requirements for FCC regenerators.

The HOC is not currently subject to NSPS Ja (i.e., it is an "existing facility" for purposes of NSPS Ja). The HOC Reconfiguration Project would cause the HOC to become an "affected unit" if it constituted a modification (40 CFR § 60.14(a)) or reconstruction of the affected unit (40 CFR § 60.15(a)).

8.2.2.1 Modification

If an existing facility is modified, it becomes an affected facility with respect to each pollutant for which the emission rate will increase as the result of a physical or operational change (40 CFR § 60.14(a)). The emission rate is expressed as kg/hr of any pollutant discharged into the atmosphere, and may be determined based on material balances, continuous monitor data, or manual emission tests where the use of published emission factors (viz. AP-42) does not clearly indicate whether an increase will or will not occur (40 CFR § 60.14(b)). Additional provisions for determining an emission rate change based on multiple sampling runs are at 40 CFR Part 60, Appendix C.

Individual NSPS standards may contain special provisions that supersede conflicting portions of the general procedure for determining whether a modification will occur (40 CFR 60.14(f)). For NSPS Ja, the general modification procedures apply for facilities other than flares (40 CFR § 60.100a(c)).

Because the HOC Reconfiguration Project will cause the maximum coke burn rate of the HOC regenerator to increase, and there will be no changes to emission factors for any pollutants, Valero is considering the HOC Unit as modified for purposes of NSPS Ja applicability.

8.2.2.2 Reconstruction

If an existing facility is reconstructed, it becomes an affected facility irrespective of any change in emission rate, and must comply with the applicable NSPS with respect to each pollutant (40 CFR § 60.15(a)). Reconstruction means the replacement of components of an existing facility to such an extent that the fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable entirely new facility, and it is technologically and economically feasible to meet the applicable NSPS standard.

A determination of whether a change constitutes a reconstruction depends on the cost and scope of the actual planned changes, how "affected facility" is defined with respect to a particular NSPS standard, as well as any specific provisions in a subpart which refine and delimit the concept of reconstruction (40 CFR § 60.15(g)).[22]

Each fluid catalytic cracking unit constitutes an affected facility for purposes of NSPS Ja (40 CFR § 60.100a(a)). The fluid catalytic cracking unit affected facility includes the riser, reactor, regenerator, air blowers, spent catalyst or contact material stripper, catalyst or contact material recovery equipment, and regenerator equipment for controlling air pollutant emissions and for heat

[22] Specific provisions of NSPS Ja include an accumulation provision which requires summation of fixed capital costs for all new components which are "…replaced pursuant to all continuous programs of component replacement which are commenced within any 2-year period…" (40 CFR § 60.100a(d); i.e., no concept of "relatedness" applies). The project has only phase, which Valero intends to complete the project within a 2 year period once actual construction commences.

recovery. Two otherwise separate FCC units that share a common exhaust treatment device are considered a single affected facility (40 CFR § 60.101a).

The project consists of constructing a second riser/reactor within the HOC. Since the second riser/reactor will use the same exhaust treatment device, it would be part of the same affected facility as the HOC (if the HOC were an affected facility). Although the second riser/reactor itself is not a replacement for any component within the HOC, it accomplishes a heat removal function which will render obsolete components of the existing catalyst regenerator (cooling coils). Additionally, Valero's review of the EPA Applicability Determinations Index (ADI) has identified determinations by EPA regional offices where the installation of new equipment within an existing facility has been evaluated under NSPS Reconstruction provisions.[23] Valero has therefore treated the new secondary riser/reactor and other equipment that would fall under the definition of the FCCU affected facility as "new components" for purposes of the reconstruction determination.

In determining whether a reconstruction will occur, the cost of all new components within a facility ("numerator") is divided by the cost of constructing an entirely new facility ("denominator"). The numerator only includes the cost of those components that would form part of an FCCU affected facility, and not the cost of other project components (e.g., gas plant, boiler) outside of the affected facility.[24] The denominator corresponds to the cost of the facility as it existed prior to the project, rather than the cost of the facility as it would exist post-project.[25] While the denominator normally excludes air pollution control equipment,[26] in this case the definition of the FCCU affected facility specifically includes "*regenerator equipment for controlling air pollutant emissions and for heat recovery*." The corresponding definition in NSPS J (40 CFR § 60.101) was revised in 1989 to include the list of equipment included in the affected facility. During the rulemaking, EPA agreed to revise

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[23] John Rasnic (EPA OAQPS) to Philip Millam (EPA R10). Applicability of NSPS XX to UNOCAL VRU Relocation. August 6, 1993. ADI Nº. 9300008. (finding that a new VRU would be a "new component," because it was necessary to accommodate an operational change, though it did not replace any existing control device).
[24] Michael Alushin (EPA Office of Compliance) to Ellen Sadat (Drinker, Biddle & Reath). *Reconstruction of a Stationary Combustion Turbine*. February 28, 2008. ADI Nº. 0800031.
[25] David Howekamp (EPA R9) to Ron Krzywosinski (Chevron Products). *Gasoline Bulk Terminal Reconstruction & Comparable Facility*. April 4, 1997. ADI Nº. 0000081.
[26] 40 FR 58418 (Dec. 16, 1975). ("*Costs associated with the purchase and installation of air pollution control equipment ... are not considered in estimating the fixed capital cost of a comparable entirely new facility unless that control equipment is required as part of the process (e.g., product recovery).*")

the definition of affected facility to include "the entire FCCU,"[27] rather than each FCCU regenerator, but declined to expand the definition of affected facility to include the associated fractionator and gas plant.[28]

In sum, the numerator includes the fixed capital cost of all new components, including the new secondary riser, but does not include new "OSBL" components (e.g., boiler) or components associated with the new fractionation and gas processing equipment. The denominator includes the fixed capital cost of a new HOC unit comparable to the existing configuration (i.e., primary riser only and existing heat removal scheme), including air pollution equipment and excluding fractionation and gas processing equipment. Fixed capital cost is the capital needed to provide all depreciable components, including engineering, purchase, and installation of major process equipment, contractors' fees, instrumentation, auxiliary facilities, buildings and structures.[29]

Since Valero is treating the HOC Regenerator as modified, and because the same emission limits apply under NSPS Ja for both reconstructed and modified units, Valero has not performed the calculation to determine whether the HOC Unit is "reconstructed" for purposes of NSPS Ja applicability.

8.3 National Emission Standards for Hazardous Air Pollutants (NESHAP)

NESHAP include risk-based standards initially promulgated prior to 1990 under 40 CFR Part 61 as well as technology-based standards promulgated after 1990 under 40 CFR Part 63.

8.3.1 Part 61, Subpart FF (Benzene Waste Operations; "BWON")

The BWON NESHAP specifies control requirements for equipment used to handle Benzene waste. BWON requirements primarily apply to Wastewater Treatment Plant components at the West Plant, and are partially incorporated into MACT CC (cf. 40 CFR § 63.640(o)).

8.3.2 Part 63, Subparts CC (Petroleum Refineries; "Refinery MACT")

The West Plant is subject to the Refinery MACT and will continue to comply with its provisions. Among other requirements, Refinery MACT sets requirements for monitoring of flares and cooling

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[27] 54 FR 34012 (Aug. 17, 1989).
[28] Id. at 34025.
[29] 40 FR 58418 (Dec. 16, 1975).

tower water, and incorporates certain requirements of NSPS J and Ja applying to FCC units. Refinery MACT also requires fenceline monitoring of benzene.

8.3.3 Part 63, Subparts YY (Ethylene Production Plants; "Ethylene MACT")

The new gas plant is potentially subject to Ethylene MACT based on the definition of "ethylene production unit" quoted below:

> *Ethylene production or production unit means a chemical manufacturing process unit in which ethylene and/or propylene are produced by separation from petroleum refining process streams or by subjecting hydrocarbons to high temperatures in the presence of steam. The ethylene production unit includes the separation of ethylene and/or propylene from associated streams such as a C4 product, pyrolysis gasoline, and pyrolysis fuel oil. Ethylene production does not include the manufacture of SOCMI chemicals such as the production of butadiene from the C4 stream and aromatics from pyrolysis gasoline.*[30]

Although the new gas plant produces a dilute propylene product from a petroleum refining process stream, Valero believes that the unit is better described by the definition of "petroleum refining process unit" (40 CFR § 63.641) than "chemical manufacturing process unit" (40 CFR § 63.101(b)), since it is used to separate intermediate petroleum streams, and produces intended products other than propylene, including butylene, propane, refinery fuel gas, and cat naphtha.[31]

Control requirements for process vents under Ethylene MACT and Refinery MACT are similar, so the applicability of MACT YY (rather than MACT CC) to the gas plant would not affect the actual control measures undertaken at the unit.

8.3.4 Part 63, Subpart UUU (Petroleum Refinery Catalytic Cracking Units, Catalytic Reforming Units, and Sulfur Recovery Units)

MACT UUU sets HAP emission limitations for Catalytic Cracking Units, and therefore affects the HOC Unit. These include requirements for reducing emissions of metal HAP and organic HAP (including

[30] 40 CFR § 63.1103(e)(2)

[31] 40 CFR § 63.1103(e) does not include a definition of the term "chemical manufacturing process unit," so that from HON is assumed to apply, considering the "intended product" as ethylene and/or propylene, rather than listed SOCMI chemicals.

HCN). The standard provides for compliance with NSPS J and/or Ja emission limits for PM and CO from FCC regenerators as a compliance option (40 CFR §§ 63.1564–1565).

Section 9
State Rule Applicability Analysis

9.1 Protection of Public Health and Welfare – 30 TAC §116.111(a)(2)(A)

As outlined below, this facility will comply with all applicable air quality rules and regulations and with the intent of the TCAA, including protection of the health and physical property of the people.

9.1.1 Chapter 101 - General Air Quality Rules

The West Plant is operated in accordance with the General Rules relating to circumvention, nuisance, traffic hazard, notification requirements for major upsets, notification requirements for maintenance, sampling, sampling ports, emissions inventory requirements, sampling procedures and terminology, compliance with Environmental Protection Agency standards, the National Primary and Secondary Air Quality Standards, inspection fees, emissions fees, and all other applicable General Rules.

9.1.2 Chapter 111 – Visible Emissions and Particulate Matter

Operation of the West Plant may result in occasional visible emissions but not in excess of the opacity limits specified in §111.111. Particulate matter emissions comply with the emission limits specified in §111.151.

9.1.3 Chapter 112 – Sulfur Compounds

Emissions of sulfur compounds, including SO_2 and H_2S, comply with applicable Chapter 112 requirements, including 30 TAC §112.3 for net ground level concentrations of SO_2 and 30 TAC §112.31 for allowable H_2S emissions for residential, business, or commercial property.

9.1.4 Chapter 113 – Toxic Materials

The West Plant will comply with the applicable requirements of this chapter.

9.1.5 Chapter 114 – Motor Vehicles

All motor vehicles owned and operated by Valero will be operated and maintained as required by the applicable requirements of Chapter 114.

9.1.6 Chapter 115 - Volatile Organic Compounds (VOC)

VOC emissions will comply with the requirements specified in 30 TAC §115.322 for fugitive emissions in petroleum refineries.

9.1.7 Chapter 117 - Nitrogen Compounds

Chapter 117 requirements do not apply to facilities located in Nueces County.

9.1.8 Chapter 118 – Air Pollution Episodes

Valero will comply with the requirements for generalized and localized air pollution episodes as specified in 30 TAC §§118.2 and 118.3, respectively, upon request of the TCEQ.

9.1.9 Chapter 122 – Federal Operating Permits

Valero will file the appropriate documentation to revise its Federal Operating Permit(s) to incorporate any permit modifications concerning this permit action, consistent with TCEQ guidance.

9.1.10 Impact on Schools

There are no schools located within 3,000 feet of the West Plant.

9.2 Measurement of Emissions - 30 TAC §116.111(a)(2)(B)

Emissions will be sampled upon request of the Executive Director of the TCEQ.

9.3 BACT Technology - 30 TAC §116.111(a)(2)(C)

Please refer to Section 6 of this application for the best available control technology (BACT) analysis.

9.4 NSPS - 30 TAC §116.111(a)(2)(D)

Applicability of select NSPS standards is discussed in Section 8. A listing of all NSPS standards that the West Plant is subject to is listed below.

Subpart A – General Provisions;

Subpart J – Standards of Performance for Petroleum Refineries;

Subpart Ja – Standards of Performance for Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After May 14, 2007;

Subpart K – Standards of Performance for Petroleum Liquid Storage Vessels for which Construction, Reconstruction, or Modification Commenced after June 11, 1973, and prior to May 19, 1978;

Subpart Ka – Standards of Performance for Storage Vessels for Petroleum Liquids for which Construction, Reconstruction, or Modification Commenced after May 18, 1978, and prior to July 23, 1984;

Subpart Kb – Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for which Construction, Reconstruction, or Modification Commenced after July 23, 1984;

Subpart VV – Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemical Manufacturing Industry;

Subpart XX – Standards of Performance for Bulk Gasoline Terminals;

Subpart GGG – Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries;

Subpart NNN - Standards of Performance for Volatile Organic Compound (VOC) Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations;

Subpart QQQ – Standards of Performance for VOC Emissions from Petroleum Refinery Wastewater Systems; and

Subpart RRR - Standards of Performance for Volatile Organic Compound Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Reactor Processes.

9.5 NESHAP - 30 TAC §116.111(a)(2)(E)

Applicability of select Part 61 NESHAP standards is discussed in Section 8. A listing of all NSPS standards that the West Plant is subject to is listed below.

Subpart A – General Provisions;

Subpart M – National Emission Standards for Asbestos; and

Subpart FF – Benzene Waste Operations.

9.6 NESHAP for Source Categories – 30 TAC §116.111(a)(2)(F)

Applicability of select Part 63 NESHAP standards is discussed in Section 8. A listing of all NSPS standards that the West Plant is subject to is listed below.

Subpart A – General Provisions;

Subpart F – National Emission Standards for Hazardous Air Pollutants for the Synthetic Organic Chemical Manufacturing Industry (SOCMI);

Subpart G – National Emission Standards for Hazardous Air Pollutants for SOCMI Process Vents, Storage Vessels, Transfer Operations, and Wastewater;

Subpart H – National Emission Standards for Hazardous Air Pollutants from Equipment Leaks;

Subpart R – National Emission Standards for Hazardous Air Pollutants for Gasoline Distribution Facilities;

Subpart Y – National Emission Standards for Hazardous Air Pollutants from Marine Vessel Loading and Unloading Operations;

Subpart CC – National Emissions Standards for Hazardous Air Pollutants for Petroleum Refineries;

Subpart UUU – National Emission Standards for Hazardous Air Pollutants for Petroleum Refineries, Catalytic Cracking Units, Catalytic Reforming Units, and Sulfur Recovery Units;

Subpart DDDDD - National Emission Standards for Hazardous Air Pollutants: Industrial, Commercial, and Institutional Boilers and Process Heaters, and

Subpart GGGGG – National Emission Standards for Hazardous Air Pollutants: Site Remediation.

9.7 Performance Demonstration - 30 TAC §116.111(a)(2)(G)

Emissions resulting from the sources addressed in this application will perform as represented and as required by conditions of the amended permit.

9.8 Nonattainment Review - 30 TAC §116.111(a)(2)(H)

Nueces County has been designated as attainment or unclassified with regard to all National Ambient Air Quality Standards. Therefore, nonattainment New Source Review requirements do not apply.

9.9 Prevention of Significant Deterioration Review – 30 TAC §116.111(a)(2)(I)

As discussed in Section 7, the project associated with the permit amendment will not result in a significant net increase in emissions of any pollutant regulated by the TCEQ PSD program; therefore, PSD review is not required.

9.10 Air Dispersion Modeling – §116.111(a)(2)(J)

An Air Quality Analysis (AQA) Protocol associated with the facilities included in this application will be provided in a separate submittal. The AQA Protocol for pollutants subject to PSD review will outline the proposed air dispersion modeling methodologies to demonstrate compliance with the NAAQS and any other applicable air quality standards and guidelines upon request by the TCEQ. An EMEW has been submitted for the pollutants subject to minor NSR and health effects review.

9.11 Hazardous Air Pollutants – 30 TAC §116.111(a)(2)(K)

The Hazardous Air Pollutants requirements of §116.111 do not apply to the proposed project.

9.12 Mass Cap and Trade Allowances – 30 TAC §116.111(a)(2)(L)

The West Plant is not located in a county that is subject to the Mass Emissions Cap and Trade (MECT) program; therefore, this rule does not apply.

9.13 Public Notice – 30 TAC §116.130

Public notice will be made as required by this rule.

Appendix A

New/Modified Source Emission Calculations

Table A-1

HOC Emission Calculations

HOC Reconfiguration Project

Valero Refining - Texas - West Plant Refinery, Corpus Christi

Name: Heavy Oil Cracker (HOC) Belco Scrubber

FIN: 24-ST-01 EPN: 121

Maximum Coke Burn Rate:	140,000	lb/hr
Annual Average Coke Burn Rate:	130,000	lb/hr
Maximum Stack Flow Rate:	432,923	dscfm @ 0% O2
Annual Average Stack Flow Rate:	402,000	dscfm @ 0% O2
Standard Temperature:	60	°F
Standard Pressure:	1	atm
Standard Volume:	379.58	ft3/lbmol

Constituent	Maximum Emission Factor	Average Emission Factor	Units	MW lb/lbmol	Calculated Emission Rates lb/hr	Calculated Emission Rates tpy
NOx (MSS) (1)	122		ppmvd @ 0% O2	46.01	384.12	NA
NOx (Routine)	70	37	ppmvd @ 0% O2	46.01	220.40	473.81
CO (2)	500	200	ppmvd @ 0% O2	28.01	958.40	1559.15
SO2 (3)	50	23.56	ppmvd @ 0% O2	64.07	219.22	420.12
VOC	10	10	ppmvd @ 0% O2	44.1	30.18	122.74
PM	1	1	lb/1000 lb		140.00	569.40
PM10	1	1	lb/1000 lb		140.00	569.40
PM2.5	1	1	lb/1000 lb		140.00	569.40
H2SO4 (4)	0.35	0.35	lb/1000 lb		49.00	199.30
HCN (5)	0.611	0.611	lb/1000 lb		80.47	320.40
NH3 (6)	0.0345	0.0314	lb/1000 lb		4.84	17.88
CO2 (7)						2,451,673
CH4						72.08
N2O						14.42

1. NOx concentration of 122 ppmvd is used for current permit limit. Concentrations above 70 ppmvd occur very infrequently, less than 50 hours per year.
2. Annual CO concentration set to result in annual emission rate similar to existing limit.
3. Annual emission rate for SO2 was developed for 2010 Deflex alterations and based on analysis of historical emissions at the time.
4. H2SO4 factor based on previous permit representation.
5. The proposed HCN emission limits are not changing from current permit limits.
6. NH3 emission factors derived from 2007 stack testing. Maximum factor is based on stack test plus 10%.
7. CO2 emissions based on Equation Y-6 from 40 CFR 98 Subpart Y. The annual average stack flow rate is used for Qr and the maximum CO and CO2 concentrations are the following:

CO2	20	%
CO	0.020	%

Example Calcs

NOx lb/hr = 70.0/1000000 * 432,923 / 379.58 * 46.01 *60 = 220.40 lb/hr

HCN lb/hr = 0.6110 lb/1000 lb * 140000 lb/hr / 1000 = 80.47 lb/hr

Table A-2
Boiler Emission Calculations
HOC Reconfiguration Project
Valero Refining - Texas - West Plant Refinery, Corpus Christi

Name: Boiler 30-B-05 FIN: 30-B-05 EPN: 30-B-05

Fuel Input Data

Fuel Type: Refinery Fuel Gas

	MMBtu/hr	scf/hr	lbmol/hr	lb/hr
Max. Fuel Input:	477.4	525,014	1383.1	21,301
Avg. Fuel Input:	434	477,285	1257.4	19,365

Standard Temperature: 60 °F
Standard Pressure: 1 atm
Standard Volume: 379.58 ft3/lbmol

Emission Calculations

Annual start-up Hours: 50

Pollutant	Scenario	Basis	Units	Emission Factor (lb/MMBtu)	lb/hr	tpy	Comments
NOx	1-hr	0.015	lb/MMBtu	0.015	7.16		
NOx Startup	1-hr	0.15	lb/MMBtu	0.15	71.61		
NOx	Annual	0.015	lb/MMBtu	0.015		30.14	Includes higher emissions during startup periods
CO	1-hr	100	ppmv in stack @ 3% O2	0.0701	33.48		
CO Startup	1-hr	500	ppmv in stack @ 3% O2	0.3506	167.39		
CO	Annual	50	ppmv in stack @ 3% O2	0.0351		70.84	TCEQ BACT level at 3% oxygen
SO2	1-hr	87	ppmv H_2S in fuel	0.0161	7.70		Current limit for refinery fuel gas at Corpus West
SO2	Annual	60	ppmv H_2S in fuel	0.0111		21.15	Based on NSPS Ja limit.
VOC	1-hr/Annual	5.5	lb/MMscf @ 1020 btu/scf	0.0054	2.57	10.25	AP-42 Table 1.4-2
PM/PM10/PM2.5	1-hr/Annual	7.6	lb/MMscf @ 1020 btu/scf	0.0075	3.56	14.16	AP-42 Table 1.4-2
NH3	1-hr/Annual	10	ppm from SCR	0.0046	2.18	8.68	

Example Calc.
NOx = 0.015 lb/MMBtu * 477.4 MMBtu/hr = 7.16 lb/hr
NOx = 0.015 lb/MMBtu * 434 * 8760 hrs/yr / 2000 tpy = 30.14 tpy

Calculated Fuel Gas Properties

Average Molecular Weight: 15.4008 lb/lbmol
Fuel gas HHV: 909.3 btu/scf
Carbon Content: 67.152 %
Fd Factor: 8225.7 dscf/MMBtu
CO2 Emission Factor: 109.8 lb/MMBtu

Stack Parameters

Diameter: 7.83
Temperature: 300
Exit Flow: 138,433 acfm
Exit Velocity: 47.87 ft/s

Fuel Composition

Component		MW (lb/lbmole	Vol%	Wt%	Fuel Molar Flow Rate (lbmol/hr)	HHV (BTU/lbmol)	N2 Atoms	C Atoms	H2 Atoms	O2 Atoms	O2 Stoic. Coeff.	CO2 Stoic. Coeff.	H2O Stoic. Coeff.
Nitrogen	N2	28.01	4.60	8.4	63.62	0	2	0	0	0	0	0	0
Carbon Dioxide	CO2	44.01	0.40	1.1	5.53	0	0	1	0	2	0	1	0
Carbon Monoxide	CO	28.01	0.50	0.9	6.92	122,225	0	1	0	1	0.5	1	0
Hydrogen	H2	2.02	32.50	4.3	449.52	123,364	0	0	2	0	0.5	0	1
Oxygen	O2	32.00	0.04	0.1	0.55	0	0	0	0	2	0	0	0
Methane	CH4	16.04	47.90	49.9	662.52	384,517	0	1	4	0	2	1	2
Ethane	C2H6	30.07	4.90	9.6	67.77	680,211	0	2	6	0	3.5	2	3
Ethylene	C2H4	28.05	2.10	3.8	29.05	612,645	0	2	4	0	3	2	2
Acetylene	C2H2	26.04	0.00	0.0	0.00	508,260	0	2	2	0	4.5	3	3
Propane	C3H8	44.10	3.40	9.7	47.03	983,117	0	3	8	0	5	3	4
Propylene	C3H6	42.08	0.75	2.0	10.37	886,703	0	3	6	0	4.5	3	3
n-Butane	C4H10	58.12	0.30	1.1	4.15	1,279,191	0	4	10	0	6.5	4	5
Iso-Butane	C4H10	58.12	1.70	6.4	23.51	1,276,534	0	4	10	0	6.5	4	5
Butylene	C4H8	56.11	0.50	1.8	6.92	1,170,631	0	4	8	0	6	4	4
n-Pentane	C5H12	72.15	0.04	0.2	0.55	1,524,401	0	5	12	0	8	5	6
Iso-Pentane	C5H12	72.15	0.13	0.6	1.80	1,521,365	0	5	12	0	8	5	6
Hexane Plus	C6 Plus	86.18	0.001	0.0	0.01	1,807,569	0	6	14	0	9.5	6	7
			99.761	100	1379.83		Fuel Weight %						
							8.367	67.152	23.047	1.434			

Maximum Combustion Calculations

Excess Air: 20%

Component	MW (lb/lbmol)	Wet Flow Rate (lbmol/hr)	Hourly Emissions (scfh)	Hourly Mass (lb/hr)	Conc, wet	Conc., dry
Nitrogen	28.01	10,735	4,074,783	300,578	71.70%	85.63%
Oxygen	32.00	479.93	182,174	15,358	3.21%	3.83%
Water	18.02	2435.4	924,428	43,837	16.27%	
Carbon Dioxide	44.01	1191.0	452,068	52,402	7.95%	9.50%
Argon	39.95	130.6	49,565	5,217	0.87%	1.04%
Total, wet	27.89	14971.8	5,683,018	417,392	100%	100%
Total, dry	29.81	12536.4	4,758,590	373,555		

Flow rates at specific oxygen concentrations

Stack Condition	% O2	lbmol/hr
Calculated Stack O2	3.83%	12,536.4
0% O2	0%	10,240.1
Specific O2	3%	11,956.3

Table A-3

Fugitive Emissions - Counts and Total Emissions

HOC Reconfiguration Project

West Plant Refinery, Valero Refining - Texas, L.P., Corpus Christi, Texas

New Unit	Model Unit	% for Count
Gas Plant	#20-LRU	125
SHU	#54-SHU	125
HOC	#21 HOC	10
Boiler	#30-BOILERHOUSE	120
Sour Water Stripper	#42-SOUR WATER STRIPPER	120

GV/LL Unmonitored Flange Assumption 25%

Emission Factor *Refinery*

LDAR Program *28VHP*

Unit	Stream	Component Type	Total Count	Valves					Pumps		Monitored Flanges					Unmonitored Flanges			Compressors	Relief Valves (3)	Process Drains	Total Emission Rate (lb/hr)
		Stream Type		Gas/ Vapor	Gas/ Vapor	Lt. Liq.	Lt. Liq.	Hvy. Liq.	Lt. Liq.	Hvy. Liq.	Gas/ Vapor	Gas/ Vapor	Lt. Liq.	Lt. Liq.	Hvy. Liq.	Gas/ Vapor	Lt. Liq.	Hvy. Liq.	Gas/ Vapor	Gas/ Vapor	All	
		Monitor Cat. (4)		N	D	N	D	N	N	N	N	D	N	D	N	N	N	N	N	N	N	
		Emission Factor		0.059	0.059	0.024	0.024	0.00051	0.251	0.046	0.00055	0.00055	0.00055	0.00055	0.00055	0.00055	0.00055	0.00055	1.399	0.35	0.07	
		Control Efficiency		97%	75%	97%	75%	30%	85%	30%	97%	75%	97%	75%	30%	30%	30%	30%	85%	100%	97%	
Gas Plant	20_03 INLET GAS FROM 87E01		63	0	0	28	0	0	0	0	0	0	28	0	0	0	7	0	0	0	0	0.023
Gas Plant	20_04 OUTLET 20C01		404	0	0	192	0	0	3	0	0	0	167	0	0	0	42	0	0	0	0	0.270
Gas Plant	20_05 OUTLET 20E01		6	0	0	2	0	0	0	0	0	0	3	0	0	0	1	0	0	0	0	0.002
Gas Plant	20_07 OUTLET 20E03		72	0	0	38	0	0	0	0	0	0	27	0	0	0	7	0	0	0	0	0.031
Gas Plant	20_09 OUTLET 20P02A/B		209	15	0	95	0	0	3	0	22	0	54	0	0	6	14	0	0	0	0	0.217
Gas Plant	20_10 BTMS 20V02		6	2	0	0	0	0	0	0	3	0	0	0	0	1	0	0	0	0	0	0.004
Gas Plant	20_12 STABILIZER BTMS		14	0	0	5	0	0	0	0	0	0	7	0	0	0	2	0	0	0	0	0.004
Gas Plant	20_13 PRODUCT GAS TO 87V01		42	0	0	24	0	0	0	0	0	0	14	0	0	0	4	0	0	0	0	0.019
Gas Plant	20_14 OUTLET 20E02		9	0	0	4	0	0	0	0	0	0	4	0	0	0	1	0	0	0	0	0.003
Gas Plant	20_19 OUTLET STABILIZER REBOILER		102	0	0	53	0	0	0	0	0	0	39	0	0	0	10	0	0	0	0	0.043
Gas Plant	20_30 OUTLET 20E04		61	0	0	29	0	0	0	0	0	0	25	0	0	0	7	0	0	0	0	0.024
Gas Plant	20_35 GLYCOL FEED		61	0	0	28	0	0	3	0	0	0	24	0	0	0	6	0	0	0	0	0.136
Gas Plant	20_50REFRIGERANT RECIVER BTMS		58	0	0	23	0	0	0	0	0	0	28	0	0	0	7	0	0	0	0	0.020
Gas Plant	20_51 INLET SHELLSIDE 20E03		72	13	5	24	0	0	0	0	5	5	14	0	0	2	4	0	0	0	0	0.117
Gas Plant	20_53 OFFGAS FROM 20E03		572	0	0	237	19	0	0	0	0	0	248	3	0	0	62	0	3	0	0	0.943
Gas Plant	20_54 SHELLSIDE BTMS 20E03		52	0	0	35	0	0	0	0	0	0	13	0	0	0	4	0	0	0	0	0.027
Gas Plant	20_55 OUTLET 20E10		35	0	0	18	0	0	0	0	0	0	13	0	0	0	4	0	0	0	0	0.015
Gas Plant	20_57 SHELLSIDE OFF GAS 20E04		69	0	0	45	0	0	0	0	0	0	19	0	0	0	5	0	0	0	0	0.035
Gas Plant	20_58 INLET 20C02		124	0	0	59	0	0	0	0	0	0	52	0	0	0	13	0	0	0	0	0.048
Gas Plant	20_59 OUTLET 20C02		61	0	0	24	0	0	0	0	0	0	28	0	0	0	7	0	2	0	0	0.440
Gas Plant	PROPANE		6	0	0	2	0	0	0	0	0	0	3	0	0	0	1	0	0	0	0	0.002
Gas Plant	SLOP OIL		14	0	0	2	0	0	0	0	0	0	3	0	0	0	1	0	0	0	8	0.019
SHU	54_01 SHU FEED		3595	99	0	792	42	0	5	0	172	3	1912	47	0	43	478	0	0	2	0	1.428
SHU	#38 Isobutylene		60	0	0	22	0	0	0	0	0	0	30	0	0	0	8	0	0	0	0	0.019
SHU	47_02 H2 RECYCLE		8	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.014
SHU	54_04 HYDROGEN STRIPPER OVERHEA		676	72	0	100	0	0	3	0	140	0	258	0	0	35	65	0	0	3	0	0.357
SHU	54_02 DEPENT BTMS		477	15	0	95	2	0	3	0	48	0	235	8	0	12	59	0	0	0	0	0.253
SHU	FLARE GAS		697	173	19	0	0	0	0	0	382	22	0	0	0	96	0	0	0	5	0	0.633
SHU	ALKYLATE		107	0	0	32	0	0	0	0	0	0	60	0	0	0	15	0	0	0	0	0.030
SHU	54_03 DEPENT OH PROD		1074	72	0	190	3	0	5	0	212	0	422	7	0	53	106	0	0	4	0	0.543
SHU	SLOP OIL		50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50	0.105
SHU	#21 HOC GASOLINE		70	0	0	17	0	0	0	0	0	0	42	0	0	0	11	0	0	0	0	0.017
SHU	31_08 ACID SOLUBLE OIL		2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0.001
SHU	LIGHT CYCLE OIL		2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0.001
SHU	31-06 ALKYLATE		7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.005
SHU	FUEL GAS		51	13	4	0	0	0	0	0	24	4	0	0	0	6	0	0	0	0	0	0.085
HOC	#21 HOC BUTANE		34	0	0	8	1	0	0	0	0	0	19	1	0	0	5	0	0	0	0	0.014
HOC	#21 HOC DEBUTANIZER FEED		34	1	1	5	0	0	1	0	4	2	14	1	0	1	4	0	0	0	0	0.060
HOC	#21 HOC DEBUTANIZER OVERHEAD		608	16	0	33	2	0	1	0	339	0	100	6	0	85	25	0	0	1	0	0.152
HOC	#21 HOC DEPROPANIZER FEED		4	0	0	1	0	0	0	0	0	0	2	0	0	0	1	0	0	0	0	0.001
HOC	#21 HOC DEPROPANIZER OVERHEAD		45	2	0	10	0	0	1	0	4	0	21	0	0	1	6	0	0	0	0	0.051
HOC	#21 HOC FLARE GAS		124	31	4	1	0	0	0	0	60	7	1	0	0	15	1	2	0	2	0	0.123
HOC	#21 HOC FUEL GAS		53	14	1	0	0	0	0	0	28	3	0	0	0	7	0	0	0	0	0	0.043
HOC	#21 HOC GAS OIL FEED		92	1	0	2	0	23	0	1	3	0	5	0	0	1	2	54	0	0	0	0.066

Table A-3
Fugitive Emissions - Counts and Total Emissions
HOC Reconfiguration Project
West Plant Refinery, Valero Refining - Texas, L.P., Corpus Christi, Texas

New Unit	Model Unit	% for Count
Gas Plant	#20-LRU	125
SHU	#54-SHU	125
HOC	#21 HOC	10
Boiler	#30-BOILERHOUSE	120
Sour Water Stripper	#42-SOUR WATER STRIPPER	120

GV/LL Unmonitored Flange Assumption 25%

Emission Factor *Refinery*
LDAR Program *28VHP*

Unit	Stream	Component Type	Total Count	Valves					Pumps		Monitored Flanges					Unmonitored Flanges			Compressors	Relief Valves (3)	Process Drains	Total Emission Rate (lb/hr)
		Stream Type		Gas/ Vapor	Gas/ Vapor	Lt. Liq.	Lt. Liq.	Hvy. Liq.	Lt. Liq.	Hvy. Liq.	Gas/ Vapor	Gas/ Vapor	Lt. Liq.	Lt. Liq.	Hvy. Liq.	Gas/ Vapor	Lt. Liq.	Hvy. Liq.	Gas/ Vapor	Gas/ Vapor	All	
		Monitor Cat. (4)		N	D	N	D	N	N	N	N	D	N	D	N	N	N	N	N	N	N	
		Emission Factor		0.059	0.059	0.024	0.024	0.00051	0.251	0.046	0.00055	0.00055	0.00055	0.00055	0.00055	0.00055	0.00055	0.00055	1.399	0.35	0.07	
		Control Efficiency		97%	75%	97%	75%	30%	85%	30%	97%	75%	97%	75%	30%	30%	30%	30%	85%	100%	97%	
HOC	#21 HOC GASOLINE		2306	18	1	108	4	0	3	0	665	1	1060	12	0	167	265	1	0	1	0	0.458
HOC	#21 HOC HCO		212	1	0	1	0	56	0	1	1	0	11	1	0	1	3	135	0	1	0	0.109
HOC	#21 HOC LEAN AMINE		18	0	0	0	0	5	0	0	0	0	1	0	0	0	1	11	0	0	0	0.006
HOC	#21 HOC LPG		33	1	0	6	0	0	0	0	2	0	17	1	0	1	5	0	0	0	0	0.009
HOC	#21 HOC NAPHTHA		535	0	0	20	1	0	1	0	0	0	409	1	0	0	103	0	0	0	0	0.105
HOC	#21 HOC RICH AMINE		74	0	0	0	0	22	0	1	0	0	1	0	0	0	1	49	0	0	0	0.059
HOC	#21 HOC SLOP OIL		1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0.038
HOC	#21 HOC SLURRY		192	1	0	1	0	52	0	1	1	0	1	0	0	1	1	133	0	0	0	0.105
HOC	#21 HOC STRIPPER BOTTOMS		56	0	0	10	1	0	0	0	0	0	36	0	0	0	9	0	0	0	0	0.017
HOC	#21 HOC STRIPPER FEED		95	1	0	19	0	0	1	0	1	0	57	0	0	1	15	0	0	0	0	0.060
HOC	#21 HOC VRU RELEASE GAS		307	31	2	0	0	0	0	0	213	5	0	0	0	54	0	0	1	1	0	0.319
HOC	#21 HOC WET GAS COMPRESSOR		3	0	1	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0.015
HOC	21_07 HOC LIGHT CYCLE OIL		217	0	0	1	0	45	0	1	1	0	3	0	0	1	1	164	0	0	0	0.113
HOC	NATURAL GAS		5	1	0	0	0	0	0	0	3	0	0	0	0	1	0	0	0	0	0	0.002
HOC	SLOP OIL		18	0	0	1	0	0	0	0	0	0	3	0	0	0	1	1	0	0	12	0.027
HOC	SOUR H2O		7	0	0	1	1	1	0	0	0	0	1	1	0	0	1	1	0	0	0	0.008
Boiler	#38 Fuel Gas		3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.044
Boiler	#38 Lean Amine		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.000
Boiler	#38 Rich Amine		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.000
Boiler	18_01 HR LEU FEED		4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.024
Boiler	18_02 DEPROP OVHD		3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.018
Boiler	18_05 DEBUT BTMS		3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.018
Boiler	49_01 REFORMATE FEED		3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.018
Boiler	FUEL GAS		821	297	14	0	0	0	0	0	401	4	0	0	0	101	0	0	0	4	0	0.778
Boiler	NATURAL GAS		152	54	2	0	0	0	0	0	75	2	0	0	0	19	0	0	0	0	0	0.134
Boiler	SLOP		2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.004
Boiler	SLOP OIL		3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.018
Sour Water Stripper	#43-AMINE SLOP		75	0	0	0	0	30	0	3	0	0	0	0	0	0	0	42	0	0	0	0.123
Sour Water Stripper	BENZENE WASTE WATER		871	0	0	228	6	0	4	0	0	0	495	14	0	0	124	0	0	0	0	0.409
Sour Water Stripper	FUEL GAS		193	53	0	0	0	0	0	0	112	0	0	0	0	28	0	0	0	0	0	0.106
Sour Water Stripper	NATURAL GAS		146	38	0	0	0	0	0	0	86	0	0	0	0	22	0	0	0	0	0	0.077
Sour Water Stripper	SLOP OIL		12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	0.025
			16352	1043	57	2678	98	238	38	8	3007	60	6029	103	0	761	1525	593	6	24	84	9.69

Notes:
1. Emission Factors from TCEQ Air Permit Technical Guidance for Chemical Sources: Equipment Leak Fugitives (February 2001). Emission factors used in calculations are Refinery Average Emission Factors.
2. 28VHP fugitive monitoring program.
3. Gas/Vapor relief valves are routed to a flare.
4. The monitoring categories and "N" for normal and "D" for difficult.

Table A-4

Fugitive Emissions - Speciation

HOC Reconfiguration Project

West Plant Refinery, Valero Refining - Texas, L.P., Corpus Christi, Texas

Current Allowable Emission Rates

FIN	EPN	VOC (lb/hr)	VOC (tpy)	H2S (lb/hr)	H2S (tpy)	NH3 (lb/hr)	NH3 (tpy)	CH4 (tpy)
SWS-FUG	42F			<0.01	0.02			
HOC-FUG	21/22F			0.03	0.12			
Various	FUG-CAP	101.17	443.11	0	0	0	0	

New Allowable Emission Rates

SWS-FUG	42F			<0.01	0.02			
HOC-FUG	21/22F			0.03	0.14			
Various	FUG-CAP	107.87	472.44	0.01	0.06	0.01	0.06	3.59

	Short-Term Emission Rates					Overall Speciation				
New Unit	Total	VOC	H2S	NH3	CH4	VOC	H2S	NH3	CH4	Inerts
	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	%	%	%	%	%
Gas Plant	2.441	2.063	0.000	0.000	0.045	85%	0%	0%	2%	13.7%
SHU	3.491	2.899	0.008	0.011	0.040	83%	0%	0%	1%	15.3%
HOC	1.962	1.323	0.004	0.002	0.132	67%	0%	0%	7%	25.6%
Boiler	1.057	0.353	0.000	0.000	0.484	33%	0%	0%	46%	20.8%
Sour Water Stripper	0.741	0.059	0.000	0.000	0.119	8%	0%	0%	16%	75.8%
Total	9.692	6.70	0.01	0.01	0.82	69%	0%	0%	8%	22.2%

	Annual Emission Rates				
	Total	VOC	H2S	NH3	CH4
	tpy	tpy	tpy	tpy	tpy
Total	42.45	29.33	0.06	0.06	3.59

Table A-5
Cooling Tower Emissions
HOC Reconfiguration Project
Valero Refining - Texas - West Plant Refinery, Corpus Christi

	FIN	HOC-PP-CT
	EPN	HOC-PP-CT
Input	Max Recirculation Rate (gpm)	26,000
	Annual Average Circulation Rate (gal/min)	26,000
	VOC Factor Maximum (lb/MMgal)	0.7
	VOC Factor Annual Average (lb/MMgal)	0.7
	Drift (%)	0.001
	Maximum TDS (ppm)	6,000
	Annual Average TDS (ppm)	6,000
Calculated Emissions	VOC (lb/hr)	1.09
	VOC (tpy)	4.78
	PM (lb/hr)	0.78
	PM (tpy)	3.42
	PM10 (lb/hr)	0.18
	PM10 (tpy)	0.81
	PM2.5 (lb/hr)	0.001
	PM2.5 (tpy)	0.01

PM Particle Size Calculations

Typical Cooling Tower Droplet Size		Particle Size
Mean	Distribution	
(Dd, microns)	(% Mass Smaller Than)	(Dp, microns)
10	0.000	1.397
20	0.196	2.794
30	0.226	4.191
40	0.514	5.589
50	1.816	6.986
60	5.702	8.383
70	21.348	9.780
90	49.812	12.574
110	70.509	15.369
PM 10 %Mass		23.59
PM2.5 %Mass		0.15

Dp = Dd * [(pd/pp) * (TDS) / 1,000,000)] ^ 1/3

where: Density of Water (pd)= 1

Density of TDS (pp) = 2.2

Example Calculation

VOC (lb/hr) = 26000 gpm x 60 min/hr /1,000,000 x 0.7 lb/MMgal = 1.09

PM (lb/hr) = 26000 gpm x 60 min/hr x 8.34 lb/gal x 0.001/100 x 6000 parts / 1,000,000 parts = 0.78

Calculation of Dp:

for Dd of 10 = 1 / 2.2 * 6000 ppm / 1000000)^(1/3) * Drift (%) microns)

Linear Interpolation:

0.196 + (2.5 - 2.794) * ((0.226 - 0.196) / (4.191 - 2.5)) = 0.15 % Mass PM2.5

Annual Emissions of PM2.5:

3.42 total tpy PM * 0.15 % PM2.5 = 0.01 tpy PM2.5

Table A-6
Merox Unit Emissions
West Plant Refinery, Valero Refining - Texas, L.P., Corpus Christi, Texas

Basis:

Merox vent flow rates:	22.1	scfm
SRU Incinerator/Boiler DRE:	99%	

Constituent	Vent Gas Composition		MW	Vent Gas Flow Rate
	wt%	mol%	lb/lbmol	lbmol/hr
Oxygen	12	21.8	16	0.76
Fuel Gas	15	18.2	24	0.64
H2S	0.1	0.1	34	0.00
C3s/C4s	24	12.0	58	0.42
Water	1.8	2.9	18	0.10
Dimethyl Disulfide	5	1.5	94.20	0.05
Diethyl Disulfide	0.4	0.1	122.3	0.00
Nitrogen	41.7	43.3	28	1.51

Emissions (EPN 121 or 30-B-05)

	lb/hr	tpy
VOC	0.24	1.05
SO2	3.86	16.91
H_2S	0.001	0.004
RSSR (organic disulfides)	0.05	0.22

Notes:
1. Stack gas flow rate is from refinery mass balance calculations for the stream.
2. Tons per year based on the hourly emissions * 8760 hours/year, converted to tons.
3. C3/C4 MW is assumed to be butane.

Sample Calculation

VOC Emissions

22.1 scfm * 60 min/hr * 12.0% / 379.5 ft3/mol * 58 lb/lbmol *(1-99%) = 0.24 lb/hr

0.24 lb/hr * 8760 / 2000 = 1.05 tpy

Table A-7
Wastewater Collection System

HOC Reconfiguration Project

Valero Refining - Texas - West Plant Refinery, Corpus Christi

FIN (1)	EPN (2)	Location	Monitoring Frequency	Vapor Flow Rate @ 70°F & 50% Relative Humidity (scfm)	Inlet Benzene Concentration (ppmv)	Benzene Breakthrough (ppm)	VOC (Based on Benzene breakthrough) (ppm)	Benzene Emissions (lb/hr)	Benzene Emissions (tpy)	VOC Emissions (lb/hr)	VOC Emissions (tpy)
CAS-HOCPP	CAS-HOCPP	HOC Gas Plant	every 2 weeks	3	300	5	100	0.0002	0.001	0.005	0.020

Temp	70	°F	Benzene MW (lb/lbmole)	78.11
Pressure	1	atm	VOC MW (lb/lbmole)	100
Volume	386.89	ft3/lbmol		

NOTES:

1. CAS denotes carbon adsorption system

Table A-8
Increased HOC Startup Emission Calculations
HOC Reconfiguration Project
Valero Refining - Texas - West Plant Refinery, Corpus Christi

Input Data		
Flowrate	432,923	scfm
Max CO concentration	1,200	ppmv
Max NOx concentration	125	ppmv
Max SO2 concentration	21.5	ppmv
PM concentration	3.31E-06	lb/scf
VOC emission factor	0.15	lb/ton coke
Duration	36	hr
MW CO	28	lb/lbmole
MW NOx	46	lb/lbmole
MW SO2	64	lb/lbmole
Specific volume	386.73	ft3/lbmole
Coke burn rate	130,000	lb/hr
Ave coke burn rate	65,000	lb/hr

Emission Rates		
Pollutant		tpy
CO		40.62
NOx		6.95
SO2		1.66
PM/PM10		1.55
VOC		0.09

Sample Calculation

CO, NOx, SO2

tpy = Flowrate (scfm) * Concentration (ppmv) * MW * 60 min/hr * Duration (hr/yr) / (Specific volume (scf/lbmole) * 2000 lb/ton)

CO = 432,923 * 60 min/hr * 1200 ppm/1,000,000 * 28 lb/lbmol * 36 hrs/yr / 386.73 scf/lbmol * 2000 lb/ton

CO = 40.62 tpy

PM

tpy = Ave flowrate (scfm) * PM concentration (lb/scf) * 60 min/hr * Duration (hr) * ton/2000 lb

PM = 432,923 * 60 min/hr * 0.000003 lb/scf * 36 hrs/yr / 2000 lb/ton

VOC

tpy = VOC factor (lb/ton coke) * Ave coke burn rate (lb/hr) * ton/2000 lb * Duration (hr) * ton/2000 lb

CO = 65,0000.15 lb/ton coke * 36 hrs/yr / 2000 lb/ton

Note:

Emissions exhaust through Belco Scrubber Stack, EPN 121

Current CO permit limits for routine HOC operation are 500 ppmv and 970.1 lb/hr

CO, NOx, and SO2 concentrations are based on hourly maximum concentrations recorded during 2005 HOC startup

PM emissions based on January 2007 performance test results

VOC emissions based on AP-42, Table 1.2-6, for anthracite coal combustion in stoker-fired

Table A-9
Project Increases Controlled MSS
HOC Reconfiguration Project
West Plant Refinery, Valero Refining - Texas, L.P., Corpus Christi, Texas

Basis		
Pressure [4]:	19.7	psia
Temperature	60.0	°F
Temperature:	520	°R
Ideal Gas Constant:	10.731	ft3 psi / °R lbmol
Volume [1]:	110,241	ft3
Material MW [3]:	56	lb/lbmol
Material Avg. Heat Content	20000	btu/lb
Flare DRE	98	%
VOC Concentration After Flaring	10,000	ppm
Number of events per year:	1	events / yr
Max Vapor H_2S Concentration:	20	ppmw
NOx Factor [2]:	0.138	lb/MMBtu
CO Factor [2]:	0.5496	lb/MMBtu

Calculations

VOC (to Flare)	21809	lb/yr
H2S (to Flare)	0.44	lb/yr
VOC (Uncontrolled Venting)	162.7	lb/yr
Flare Heat Input	436	MMBtu/yr

Increased Annual Emission Rates

Pollutant	tpy
NOx	0.03
CO	0.12
VOC (Controlled)	0.22
VOC (Uncontrolled)	0.08
VOC (Total)	0.30
SO_2	0.0004
H_2S	0.000006

Notes:
1. Estimated volume of all equipment in new Gas Plant, based on preliminary design
2. Emissions are based on the worst-case emission factor for air assist flares.
3. Based on molecular Weight of 56 lb/lbmol and 98% DRE.
4. During shut down the process unit pressure is reduced to 5 psig prior to purging remaining vapors to the flare with nitrogen

Example Calculations

VOC to Flare

$$\frac{19.7\ \text{psia}}{} \cdot \frac{110{,}241\ \text{FT3}}{} \cdot \frac{°\text{R mol}}{10.731\ \text{ft3 psia}} \cdot \frac{}{520\ °\text{R}} \cdot \frac{56\ \text{lb}}{\text{lbmol}} = 21809\ \text{lb/yr}$$

VOC (Uncontrolled Venting)

$$\frac{14.7\ \text{psia}}{} \cdot \frac{110{,}241\ \text{FT3}}{} \cdot \frac{°\text{R mol}}{10.731\ \text{ft3 psia}} \cdot \frac{}{520\ °\text{R}} \cdot \frac{56\ \text{lb}}{\text{lbmol}} \cdot \frac{10000\ \text{ppmv}}{1{,}000{,}000} = 162.7\ \text{lb/yr}$$

Controlled VOC Emission Rate

$$\frac{21809\ \text{lb}}{\text{yr}} \cdot \frac{(1\text{-}98/100)}{} \cdot \frac{\text{ton}}{2000\ \text{lbs}} = 0.22\ \text{tpy}$$

NOx Emission Rate

$$\frac{436\ \text{MMBtu}}{\text{yr}} \cdot \frac{0.138\ \text{lb}}{\text{MMBtu}} \cdot \frac{\text{ton}}{2000\ \text{lb}} = 0.030\ \text{tpy}$$

Table A-10

MSS Emission Cap Summary

HOC Reconfiguration Project

West Plant Refinery, Valero Refining - Texas, L.P., Corpus Christi, Texas

Pollutant	Existing Cap (tpy)	HOC Startup (tpy)	Gas Plant Shutdown (tpy)	Total New Cap (tpy)	MSS Increase (tpy)
CO	53.9	40.62	0.12	94.64	40.74
H_2S	0.22		0.000006	0.22	0.00
NH_3	0.17			0.17	0.00
NO_x	11.05	6.95	0.03	18.03	6.98
PM	1.41	1.55		2.96	1.55
PM_{10}	1.31	1.55		2.86	1.55
$PM_{2.5}$	1.29	1.55		2.84	1.55
SO_2	37.33	1.66	0.0004	38.99	1.66
VOC	44.83	0.09	0.30	45.22	0.39
Exempt Solvents	0.6			0.6	0.00

Table A-11

Greenhouse Gas Emission Calculations

HOC Reconfiguration Project

Valero Refining - Texas - West Plant Refinery, Corpus Christi

Emission Factors				
Pollutant	CO2	N2O	CH4	Note
kg/MMBtu	53.06	0.0001	0.001	[1]
kg/MMBtu	102.4100	0.0110	0.002	[2]
GWP	1	298	25	

[1] Tables C-1 and C-2; 40 CFR 98 Subpart C—Default Emission Factors for Natural Gas Fuel

[2] Tables C-1 and C-2; 40 CFR 98 Subpart C—Default Emission Factors for Petroleum Coke Fuel

FIN	EPN	Source	Annual Firing Rate	Average Firing Rate	CO2	N2O	CH4	CO2e
			mmbtu/yr	Mmbtu/hr	tpy	tpy	tpy	tpy
New Sources								
30-B-05	30-B-05	Boiler (Routine)	3,801,840	434.0	222,364	0.4	4.2	222,594
Various	FUG-CAP	Piping Fugitives (1)	(See Table A-4)		--	--	3.59	90
Modified Sources								
24-ST-01	121	Heavy Oil Cracker (HOC) Belco Scrubber	(See Table A-1)		2,451,673	14.42	72.08	2,457,772
Affected Sources								
SRU, SCOT	121	Sulfur Recovery Units	(See Table B-5)		4,952	0.09	0.46	4,990
13-H-01A. 13-H-01B, 13-H-01C	118	SMR (Heater Combustion)	(See Table B-5)		5,836	0.11	0.54	5,882
SMR-VENT	118	SMR (Hydrogen Production)	(See Table B-5)		20,854			20,854
47-H-01. 47-H-02, 47-H-03, 47-H-04	150	HCU Heaters	1,620,600	185	94,787	0.18	1.79	94,885
T-RACK	TRUCKCOMB	Loading - Truck Combustor	6,780	0.774	397	0.00	0.01	397
Various (See Table B-8)	Various (See Table B-8)	Wastewater Treatment	6,340	0.7	371	0.00	0.01	371
MSS Caps	MSS Caps	MSS	436	0.05	26	0.00	0.00	26

Total: 2,807,861

Appendix B

Affected Source Emission Calculations

Table B-1

Emissions Summary - Affected Sources

HOC Reconfiguration Project

West Plant Refinery, Valero Refining - Texas, L.P., Corpus Christi, Texas

EPN	FIN	Source Name	Notes	VOC	CO	NO_X	$PM/PM_{10}/PM_{2.5}$	SO_2	CO2e	H2S
				tpy	tpy	tpy	tpy	tpy	tpy	tpy
17	70-TK-110	Gasoline Blendstock Tank (70-TK-110)	1	0.15	-	-	-	-		-
187	83-TK-25	Sour Water Tank	1	0.175	-	-	-	-		-
164/165	50-TK-64/65	Iso-octene Tanks	1	0.105						
13	70-TK-105	Distillate Storage Tanks	1	0.49	-	-	-	-		-
7/8/34/35	70-TK-95/96/97/98	Distillate Storage Tanks	1	0.36	-	-	-	-		-
121	SRU, SCOT	Sulfur Recovery	1	0.26	16.91	3.70	8.40	7.45	4,990	0.50
118	13-H-01A. 13-H-01B, 13-H-01C	SMR (Heater Combustion)	1	0.63	4.09	6.60	0.83	0.09	5,882	-
118	SMR-VENT	SMR (Hydrogen Production)	1						20,854	
150	47-H-01. 47-H-02, 47-H-03, 47-H-04	HCU Heaters	2	1.51	24.24	32.55	2.33	7.82	39,225	-
SHIP-FUG	SHIP FUG	Loading - Ship Fugitives	1	0.76	-	-	-	-		-
VRU	VRU	Loading - MVRU	1	0.96	-	-	-	-		-
TRUCKFUG	LOADINGFUG	Loading - Truck Fugitives	1	1.30	-	-	-	-		-
TRUCKCOMB	T-RACK	Loading - Truck Combustor	1	0.16	1.70	0.85	0.03	0.002	397	-
Various (See Table B-8)	Various (See Table B-8)	Wastewater Treatment	1	4.89	1.74	0.42		0.031	371	
		Total Emission Rates:		*11.75*	*48.68*	*44.12*	*11.58*	*15.40*	71,719	*0.50*

Notes:

1. Emission shown are based on the incremental change in the process rates as a result of the HOC Reconfiguration Project.

2. Emission increase based on PTE minus 2019 and 2020 baseline emisison rate

Table B-2
Project Increases for Floating Roof Tanks
HOC Reconfiguration Project
West Plant Refinery, Valero Refining - Texas, L.P., Corpus Christi, Texas

Parameter Name & Variable		Units	Equation	AP-42 Eq. No.			
FIN					83-TK-25	50-TK-64/65	70-TK-110
EPN					187	164/165	17
Material					Sour Water (U83 Slop Oil)	Iso-octene	Gasoline Blendstock
Material Type					Petroleum	Organic	Petroleum
Diameter	D	ft			107.5	95	60
Tank Type					EFR	IFR	IFR
Incremental Throughput Increase		BPD			10286	6000.0	6000.0
Throughput	Q	bbl/yr			3,754,286	2,190,000	2,190,000
Shell Clingage	C	bbl/ft^2			0.0015	0.0015	0.0015
No. of Columns	N_C	-			0	6	1
Column Diameter	F_C	ft			1	1	1
Deck (Welded or Bolted)	-	-			Welded	Welded	Welded
Deck Seam Loss Factor	K_D	lb-mole/ft·yr			0	0	0
Deck Seam Length Factor	S_D	ft/ft^2			0	0	0
Product Factor	K_C	-			1.00	1.00	1.00
Period		-			Annual	Annual	Annual
Crude Oil Service?	-	Y/N			N	N	N
Liquid Density	W_l	lb/gal			7.10	6.05	5.60
Withdrawal Loss	L_{WD}	lb/yr	$[(0.943)(Q)(C)(W_l)/(D)](1+[(N_c)(F_C)]/D)$	2-19	350.74	209.73	293.94
Total VOC Loss	L_T	lb/yr	$(L_R+L_F+L_D+L_{WD})$	2-1, 2-2	350.74	209.73	293.94
Total VOC Loss	L_T	**ton/yr**	$L_t/2000$		**0.175**	**0.105**	**0.147**

Notes:
1. Annual emission rate calculations taken from AP-42 5th Ed., Section 7.
2. The iso-octene is stored in either of identical tanks 50-TK-64 or 50-TK-65. Iso-octene is blended into gasoline in any of multiple tanks, but tank 70-TK-110 is used for the calculation because it has the smallest diameter, which is worst-case.

Table B-3
Project Increases for Fixed Roof Tanks
HOC Reconfiguration Project
Valero Refining - Texas - West Plant Refinery, Corpus Christi

	Parameter	Var.	Units	Equation	AP-42 Eq. No.		
	FIN					70-TK-105	70-TK-95/96/97/98
	EPN					13	7/8/34/35
Tank Data	Material					Distillate	Distillate
	Material Type					Petroleum	Petroleum
	Tank Type					VFR	VFR
	Continuous Level Tank		(Yes / No)			No	No
	Throughput	Q	BPD			1600	1600
	Throughput	Q	bbl/yr			584000	584000
	Tank Shell Height	H_S	ft			40	40
	Max Liquid Height	H_{LX}	ft			39	39
	Average Liquid Height	H_L	ft	H_S / 2		19.5	19.5
	Diameter	D	ft			100	45
	Effective Diameter (for horizontal tanks)	De	ft	SQRT(LD/(PI/4))	1-14	NA	NA
	Tank Volume	V_{LX}	ft3	(D/2)^2 * pi * H_{LX}		306,305	62,027
	Tank Volume	T_{CG}	gal	VLX * 7.481		2,291,323	463,993
	Turnovers	N		5.614*Q / V_{LX}	1-37	10.70	52.86
	Paint Color					White	White
	Heated/Hot Product					No	No
	Paint Solar Absorptance	α	-			0.25	0.25
	Breather Vent Pressure	P_{BP}	psig			-0.03	-0.03
	Breather Vent Vacuum	P_{BV}	psig			0.03	0.03
Climatological Data	Period		-			Annual	Annual
	Daily Total Solar Insolation Factor	I	Btu/ft^2-d			1497.00	1497.00
	Daily Maximum Ambient Temperature	T_{AX}	°F			81.10	81.10
	Daily Minimum Ambient Temperature	T_{AN}	°F			63.40	63.40
	Daily Ambient Temp. Change	DT_A	°F	T_{AX} - T_{AN}	1-11	17.700	17.700
	Daily Avg. Ambient Temperature	T_{AA}	°F	((T_{AX}+459.67)+(T_{AN}+459.67))/2	1-30	72.3	72.3
	Bulk Temperature Source					Ambient	Ambient
	Liquid Bulk Temperature	T_B	°F	T_{AA} + 0.003 α I or Input	1-31	73.4	73.4
	Insulated?					No	No
	Avg. Liquid Surface Temp.	T_{LA}	°F	0.4T_{AA} + 0.6T_B + 0.005 α I if not insulated; otherwise TLA based on measurements from tank	1-28	74.8	74.8
	Max. Avg. Liq. Surf. Temp.	T_{LX}	°F	T_{LA}+0.25*DT_V	Fig. 7.1-17	79.8	79.8
	Min. Avg. Liq. Surf. Temp.	T_{LN}	°F	T_{LA}-0.25*DT_V	Fig. 7.1-17	69.8	69.8
	Avg. Vapor Temperature	T_V	°F	0.7 T_{AA} + 0.3 T_B + 0.009 α I	1-33	76.0	76.0
	Daily Vapor Temperature Range	DT_V	°R	0.7*DT_A+0.02*α*I or 0 for insulated tanks	1-7	19.88	19.88
Product Data	Liquid Molecular Wt.	M_L	lb/lb-mole			162.00	162.00
	Vapor Molecular Wt.	M_V	lb/lb-mole			130.00	130.00
	Reid Vapor Pressure	RVP	psi			NA	NA
	Slope	Sl	°F/vol %			NA	NA
	C-C Vapor Pressure Constant A	A	dim			12.390	12.390
	C-C Vapor Pressure Constant B	B	°R			8933	8933
	True Vapor Pressure @ T_{LA}	P_{VA}	psia @ T_{LA}			0.01325	0.01325
	True Vapor Pressure @ T_{LX}	P_{VX}	psia @ T_{LX}			0.01545	0.01545
	True Vapor Pressure @ T_{LN}	P_{VN}	psia @ T_{LN}			0.01132	0.01132
	Daily Vapor Pressure Range	dPv	psia	P_{VX} - P_{VX}	1-9	0.004	0.004
	Vapor Pressure Function	P*	dimensionless	P_{VA}/P_A/(1+(1-(P_{VA}/P_A))^0.5)^2		0.00045	0.00045

Table B-3

Project Increases for Fixed Roof Tanks

HOC Reconfiguration Project

Valero Refining - Texas - West Plant Refinery, Corpus Christi

	Parameter	Var.	Units	Equation	AP-42 Eq. No.		
	FIN					70-TK-105	70-TK-95/96/97/98
	EPN					13	7/8/34/35
	Material					Distillate	Distillate
Annual or Monthly Emissions	Vapor Space Expansion Factor	K_E	per day	$(DT_V/T_{LA}) + (DP_V - DP_B)/(P_A - P_{VA}))$	1-5	0.042	0.042
	Vent Setting Correction Factor	K_B		$K_N (DP_B + P_A)/(P_I + P_A))$	1-40	1.00	0.73
				$K_N (DP_B + P_A)/(P_I + P_A)) >1$	1-40	No	No
			dimensionless	$((P_1 + P_A)/ K_N) - P_A)/[(P_{BP} + P_A - P_{VA})$	1-41	1.00	1.00
	Net Working Loss Throughput	V_Q	ft3/yr	5.614 Q	1-39	3,278,576	3,278,576
	Turnover Factor	K_N	dimensionless	turnovers < 36 = 1, turnovers > 36 = (180 + N)/6N		1.00	0.73
	Working Loss Product Factor	K_P	dimensionless	0.75 for crude oils, 1.0 all other organic liquids		1.00	1.00
	Vapor Density	Wv	lb/ft3	$(M_V * P_{VA}) / (10.731*T_{VA})$	1-22	0.00030	0.00030
	Standing Losses	L_S	lb/yr	No. Days * V_V * W_V * K_E * K_S	1-2		
	Working Losses	L_W	lb/yr	$V_Q * K_N * K_P * W_V * K_B$	1-35	982.4	721.3
	Total Losses	L_T	lb/yr	$L_S + L_W$	1-1	982.4	721.3
	Annual Emission Rate		ton/yr	L_T / 2000		0.4912	0.3606

Notes:

1. Annual emission rate calculations taken from AP-42 5th Ed., Section 7.

Table B-4

Hydrogen (H2) Consumption Increase

HOC Reconfiguration Project

West Plant Refinery, Valero Refining - Texas, L.P., Corpus Christi, Texas

Selective Hydrogenation Unit (SHU)

H2 Factor Determination

Max Annual H2/Diene Ratio [1]	5.872	
Safety Factor	10%	
Annual H2/Diene Ratio	6.459	

H2 Increase

New SHU Feed Capacity	6700	BPD
	12	MLB/Hr
Diene %	1.1	%
Diene Production	2.3	Mole/hr
	14.9	Mole/hr
Hydrogen Consumption	29.8	LB/HR
	260.6	**MLB/YR**

1. Based on data from existing SHU reactors.

Hydrocracker Unit (HCU)

H2 Factor Determination

Year	HCU Feed FCF47004BPD (BPD)	Hydrogen Consumption FCF47987MSCF (MMSCFD)	Hydrogen Consumption (LB/DAY)	H2 / HCU Feed Ratio (LB/BPD)
2019	29,935	42	221,473	7.398
2020	18,869	26	137,086	7.265
		Maximum:		7.398
		Safety Factor:		10%
		Average H2/HCU Feed Factor:		8.138

H2 Increase

Incremental HCU Feed from Project:	1600	BPD
Hydrogen Consumption:	13,021	LB/DAY
	4752.8	**MLB/YR**

Total Project H2 Increase

260.6 + 4752.8 = 5013 MLB/YR

Table B-5
Project Increases for Sulfur Recovery and Hydrogen Production
HOC Reconfiguration Project
Valero Refining - Texas - West Plant Refinery, Corpus Christi

	Affected Sources		
FIN(s)	SRU, SCOT	13-H-01A. 13-H-01B, 13-H-01C	SMR-VENT
EPN(s)	121	118	118
Name	Sulfur Recovery Units	SMR (Heater Combustion)	SMR (Hydrogen Production)
Increased Rate			
	Sulfur Production	Hydrogen	Hydrogen
	LTPD	MLB/YR	MLB/YR
Feed Rate/Sulfur Production	28.0	5013	5013
Emission Factors			
	lb/LTPD (1)	lbs/yr/MLB/yr (2)	lbs/yr/MLB/yr (2)
NO_x	0.724	2.632	
CO	3.307	1.633	
VOC	0.05	0.253	
SO_2	1.458	0.034	
$PM/PM_{10}/PM_{2.5}$	1.642	0.33	
H_2S	0.098		
CO2	969	2328	8319
CH4	0.089	0.214	
N2O	0.0177	0.0430	
Annual Emissions (tpy)			
NO_x	3.7	6.60	
CO	16.91	4.09	
VOC	0.256	0.63	
SO_2	7.5	0.09	
$PM/PM_{10}/PM_{2.5}$	8.40	0.83	
H_2S	0.501		
CO2	4952	5836	20854
CH4	0.46	0.54	
N2O	0.09	0.11	
CO2e	4990	5882	20854

Note:
1. Calculated from 2019 and 2020 emissions and corresponding actual sulfur production rate.
2. Calculated from 2019 and 2020 emissions and corresponding actual hydrogen production rate.

Table B-6

Project VOC Increases for Loading Operations

HOC Reconfiguration Project

Valero Refining - Texas - West Plant Refinery, Corpus Christi

Product [5]	Throughput Increase (bbl/yr)	Assumed Percent Thru Marine Docks	Assumed Percent Thru Truck Rack	FIN	EPN	Name	Gasoline Emissions (tpy)	Distillate Emissions (tpy)	Annual Emissions, VOC (tpy)
Gasolines	2,190,000	70%	30%	SHIP FUG	SHIP-FUG	Loading - Ship Fugitives	0.76	0.25	0.76
Distillates	584,000			VRU	VRU	Loading - MVRU	0.96		0.96
				LOADINGFUG	TRUCKFUG	Loading - Truck Fugitives	1.30	0.49	1.30
				T-RACK	TRUCKCOMB	Loading - Truck Combustor	0.16		0.16

TRUCK LOADING

Controlled Emissions - EPN: TRUCKCOMB

Product	Emission Factor(1) (mg/l)	Percent of Total Product	Throughput (bbl/yr)	Annual Emissions, VOC (tpy)
Gasolines	1.347	30%	657,000	0.16

Fugitive Emissions - EPN: TRUCKFUG (West Plant)

Product	Saturation Factor	Temperature (°F)	Vapor Pressure, P (psia)	MW (lb/lbmol)	Loading Losses(2) (lb/1000 gal)	Percent of Total Product	Truck Throughput (bbl/yr)	Collection Efficiency(3) (%)	Annual Emissions, VOC(4) (tpy)
Gasolines	1	73.4	7.417	68	11.789	30%	657,000	99.2%	1.301271
Distillates	1	73.4	0.013	130	0.040	100%	584,000	0	0.49

Table B-6

Project VOC Increases for Loading Operations

HOC Reconfiguration Project

Valero Refining - Texas - West Plant Refinery, Corpus Christi

MARINE LOADING

Controlled Emissions - EPN: VRU

Product	Emission Factor[1] (mg/l)	Percent of Total Product	Throughput (bbl/yr)	Annual Emissions, VOC (tpy)
Gasolines	2.5	100%	2,190,000	0.96

Fugitive Emissions - EPNs: 31, SHIP-FUG

Product	Saturation Factor	Temperature (°F)	Vapor Pressure, P (psia)	MW (lb/lbmol)	Loading Losses[2] (lb/1000 gal)	Percent of Total Product	Throughput (bbl/yr)	Collection Efficiency[3] (%)	Annual Emissions, VOC[4] (tpy)
Ship Loading									
Gasolines	0.2	73.4	7.417	68	2.36	70%	1,533,000	99%	0.76
Distillates	0.2	73.4	0.01	130	0.01	100%	584,000	0%	0.10
Barge Loading									
Gasolines	0.5	73.4	7.417	68	5.89	70%	1,533,000	100.0%	0.0
Distillates	0.5	73.4	0.01	130	0.02	100%	584,000	0%	0.25

NOTES:

1. From most recent stack test.
2. Loading losses (LL) calculated using AP-42, Section 5.2, LL = 12.46*S*P*M/T
   - LL = Loading Loss (lb/1000 gal of liquid loaded)
   - S = Saturation factor from AP-42, Table 5.2-1.
   - P = True vapor pressure of liquid loaded (psia)
   - M = Molecular weight of vapors (lb/lb-mol)
   - T = Temperature of bulk liquid loaded (°R)
3. TRUCK LOADING: 99.2% is the collection efficiency for gasoline trucks with annual leak testing per MACT.
   MARINE LOADING: 99% is the collection efficiency for marine vessels, 100% for vacuum loading of barges.
4. Loading Loss Emissions = LL/1000 x throughput x (1- collection efficiency); VCU/MVRU Emissions = LL/1000 x throughput x collection efficiency x (1 - control efficiency)
5. Incremental gasoline throughput is total of gasoline blendstocks and iso-octene.

Table B-7

Project Increases for Truck Loading Combustor Combustion Emissions

HOC Reconfiguration Project

West Plant Refinery, Valero Refining - Texas, L.P., Corpus Christi, Texas

									Assist Gas	
							Waste Gas		909.10	btu/scf
							20,000.00	Btu/lb	1,000.00	scfh
Product	Maximum Loading Rate (bbl/hr)	Truck Throughput (bbl/yr)	MW (lb/lbmole)	Vapor Pressure (psia)	Temperature (°R)	Flowrate (lb/mol/yr)	Q - Waste Gas (MMBtu/yr)	Hours	Q - Assist Gas (MMBtu/yr)	Q - TOTAL (MMBtu/yr)
Gasolines	2,333.00	657,000	68.00	7.417	531.50	4,796.98	6,523.89	282.00	256	6,780
							TOTAL:	282		6,780

Pollutant	Emission Factors		Annual Emissions (tpy)
NO_x	0.25	lb/MMBtu	0.85
CO	0.50	lb/MMBtu	1.70
PM/PM10/PM2.5	0.0075	lb/MMBtu	0.03
SO_2	0.60	lb/MMscf	0.002

NOx and CO factors based on manufacturer's data

SO2 factor from AP-42, Table 1.4-2

Table B-8

Project Increases for Wastewater Treatment

HOC Reconfiguration Project

West Plant Refinery, Valero Refining - Texas, L.P., Corpus Christi, Texas

Wastewater Source (gpm)	New Flow Rates (gpm)	Comment
Stripped Sour Water	250	
New Boiler blowdown	12	2% of 300,000 lbs/hr
Iso-Octene Unit Process Wastewaters	1	based on ratio of 2017/2018 Actual Iso-Octene production (6,387 BPD) vs. Max production of 11,300 BPD, applied to a unit design water discharge rate of 1.75 gpm
Other Misc. incremental wastewaters	5	conservative estimate
Total Project Increase:	268	

Permit Basis (WATER9 Input) Flow to WWTP:		
	70.1	l/s
	1111.1	gpm
	13,904,719	bbl/yr

Name	FIN	EPN	Service	Permit Basis	Percent of Total WWTP Flow [3]	Pollutant	Permit Limit	Emission Basis	Project Flow Increase (Q)	Tank Diameter (D)	Number of IFR Columns (N)	Column Diameter (F_C)	Density (W_L)	Clingage Factor ©	Calculated Emission Factor [1]	Project Emission Increase [2]
				bbl/yr	%		tpy		bbl/yr	feet		ft	lb/gal	bbl/1000 ft2	lb/gpm	lb/yr
Tank 26	83-TK-26	186	Wastewater Slop Oil	54,704	0.39%	VOC	0.45	AP-42 Chapter 7	13,195	40	1	1	7.1	0.006		13.6
Tank 159	83-TK-159	184	Wastewater Slop Oil	54,704	0.39%	VOC	0.39	AP-42 Chapter 7	13,195	40	1	1	7.1	0.006		13.6
Tank 160	83-TK-160	185	Wastewater Slop Oil	54,704	0.39%	VOC	0.39	AP-42 Chapter 7	13,195	40	1	1	7.1	0.006		13.6
Tank 97	83-V-97	188	API Oil Skimmings	83,480	0.60%	VOC	0.4	AP-42 Chapter 7	20,135	16	1	1	7.1	0.006		53.7
Tank 58	83-V-58	180	Wastewater Good Oil	86,071	0.62%	VOC	0.44	AP-42 Chapter 7	20,760	35	1	1	7.1	0.006		24.5
Tank 59	83-V-59	181	Wastewater Good Oil	86,071	0.62%	VOC	0.44	AP-42 Chapter 7	20,760	35	1	1	7.1	0.006		24.5
Tank 162	83-TK-162a	183a	Wastewater/ Stormwater	676,821	4.87%	VOC	1.77	AP-42 Chapter 7	163,250	120	7	1	7.1	0.006		57.8
Tank 155	83-TK-155	182	Wastewater/ Stormwater	676,821	4.87%	VOC	1.77	AP-42 Chapter 7	163,250	120	7	1	7.1	0.006		57.8
API/DGF Combustor	APISEP	124	NA			CO	7.22	WATER9/Combustor							13.0	3482.9
						NO_x	1.76	WATER9/Combustor							3.2	849.0
						SO_2	0.13	WATER9/Combustor							0.2	62.7
						VOC	12.88	WATER9/Combustor							23.2	6213.3
equalization tank	83-TK-23	62	NA			VOC	3.51	WATER9							6.3	1693.2
bio oxidation reactor tank	83-TK27	83-TK27	NA			VOC	2.22	WATER9							4.0	1070.9
aeration basin	WWTP-AERB	WWTP-AERB	NA			VOC	1.09	WATER9							2.0	525.8
clarifier	WWTP-CLRF	WWTP-CLRF	NA			VOC	0.04	WATER9							0.1	19.3

NOTES

1. Calculated emission factor based on permit limit divided by flow rate used in model to determine permit limits.
2. Tank working loss emissions based on AP-42 Chapter 7, Equation 2-19 - $L_{WD} = ((0.943)\ Q\ C\ W_L / D)\ (1+((N_C F_C) / D))$. There is no increase in standing losses.
3. The permit basis tank throughput was divided by the total WWTP throughput used for the permit basis to determine a percentage that was multiplied by the wastewater increase for the project to obtain the incremental tank throughput.

Pollutant	Permit Limit (tpy)	Maximum Actual Emissions (2018-2020) (tpy)	Project Emission Increase (lb/yr)	Project Emission Increase (tpy)
CO	7.22	3.3	3483	1.74
NOx	1.76	0.6	849	0.42
SO2	0.13	0.0	63	0.03
VOC	25.79	10.7	9782	4.89

Appendix C

RBLC Entries Consulted

RBLC Search Results: FCC Units

RBLC ID	PERMIT	DATE	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
*OK-0182	2017-1908-C(M-2)PSD	02/10/2020	TULSA REFINERY EAST	50.003	Fluid Catalytic Cracking Unit	Nitrogen Oxides (NOx)	20 PPM (365-DAY @ 0% O2); 40 PPM (7-DAY @ 0% O2)	BACT-PSD
				50.003	Fluid Catalytic Cracking Unit	Carbon Monoxide	500 PPM (1-HR @ 0% O2)	BACT-PSD
				50.003	Fluid Catalytic Cracking Unit	Particulate matter, total < 10 µ (TPM10)	1 LB PM/1000 LB COKE (3-HR)	BACT-PSD
				50.003	Fluid Catalytic Cracking Unit	Particulate matter, total < 2.5 µ (TPM2.5)	1 LB PM/1000 LB COKE (3-HR)	BACT-PSD
TX-0871	PSDTX1062M4, GHGPSDTX121,	01/31/2020	PORT ARTHUR REFINERY	50.999	Controlled floating roof landings	Volatile Organic Compounds (VOC)	0	BACT-PSD
				50.999	Uncontrolled tank landing MSS is combined with pipeline pigging	Visible Emissions (VE)	0	BACT-PSD
TX-0886	106921, N270	03/31/2020	MONT BELVIEU NGL FRACTIONATION UNIT	50.999	PRESSURIZED LOADING	Volatile Organic Compounds (VOC)	0	LAER
*TX-0903	5920A, N292, PSDTX103M4	09/09/2020	SWEENY REFINERY	50.999	Railcar Loading	Volatile Organic Compounds (VOC)	0	LAER
*TX-0904	156571, PSDTX1564, GHGPSDTX195	09/09/2020	MOTIVA POLYETHYLENE MANUFACTURING COMPLEX	50.999	FLOATING ROOF TANK LANDINGS	Volatile Organic Compounds (VOC)	0	BACT-PSD
*TX-0905	160299, PSDTX1576, GHGPSDTX200	09/16/2020	DIAMOND GREEN DIESEL PORT ARTHUR FACILITY	50.999	Floating roof tank landings	Volatile Organic Compounds (VOC)	0	BACT-PSD
TX-0912	101616 AND N214M2	02/05/2021	MONT BELVIEU FRACTIONATOR	50.999	PROCESS VENTS	Volatile Organic Compounds (VOC)	0	LAER
				50.999	COOLING TOWER	Volatile Organic Compounds (VOC)	0	LAER
PA-0312	23-0003Z	01/11/2016	MONROE ENERGY, LLC MONROE ENERGY LLC/TRAINER	50.999	Cooling Tower 1	Particulate matter, total (TPM)	0.00200 GR	OTHER CASE-BY-CASE
				50.999	Cooling Tower 1	Process Notes:	Alky Cooling Tower #2 equipped with drift eliminators, drift rate 0.0005%.	
				50.999	Cooling Tower 1	Volatile Organic Compounds (VOC)	31.0000 PPMW	LAER
				50.999	Crude Cooling Tower	Particulate matter, total (TPM)	0.0200 GR	
				50.999	Crude Cooling Tower	Process Notes:	Crude Cooling Tower equipped with drift eliminators, drift rate 0.0005%	
				50.999	Crude Cooling Tower	Volatile Organic Compounds (VOC)	31.0000 PPMW	LAER
				50.999	FCC Cooling Tower	Particulate matter, total (TPM)	2.0000 GRAIN	OTHER CASE-BY-CASE
				50.999	FCC Cooling Tower	Process Notes:	FCC Cooling Tower equipped with drift eliminators, drift rate 0.0005%	
				50.999	FCC Cooling Tower	Volatile Organic Compounds (VOC)	31.0000 PPMW	LAER
LA-0261	PSD-LA-745(M-2)	04/26/2012	ALON REFINING KROTZ SPRINGS, INC. KROTZ SPRINGS REFINERY	50.003	Fluid Catalytic Cracking Unit (FCCU) (1-85, EQT 0071)	Volatile Organic Compounds (VOC)	73334.0000 LB/H	BACT-PSD
				50.003	Fluid Catalytic Cracking Unit (FCCU) (1-85, EQT 0071)	Nitrogen Oxides (NOx)	80.0000 PPMVD @ 0% O2	
				50.003	Fluid Catalytic Cracking Unit (FCCU) (1-85, EQT 0071)	Process Notes:		BACT-PSD
				50.003	Fluid Catalytic Cracking Unit (FCCU) (1-85, EQT 0071)	Sulfur Dioxide (SO2)	25.0000 PPMVD @ 0% O2	BACT-PSD
				50.003	Fluid Catalytic Cracking Unit (FCCU) (1-85, EQT 0071)	Nitrogen Oxides (NOx)	80.0000 PPMVD @ 0% O2	
				50.003	Fluid Catalytic Cracking Unit (FCCU) (1-85, EQT 0071)	Process Notes:		BACT-PSD
TX-0587	5920A AND PSDTX103M4	12/29/2010	CONOCO PHILLIPS COMPANY SWEENY REFINERY	50.003	Fluid Catalytic Cracking Unit (FCCU)	Process Notes:		BACT-PSD
				50.003	Fluid Catalytic Cracking Unit (FCCU)	Particulate matter, total < 2.5 µ (TPM2.5)	1.3340 LB/TON OF COKE BURN	
				50.003	Fluid Catalytic Cracking Unit (FCCU)	Process Notes:		BACT-PSD
				50.003	Fluid Catalytic Cracking Unit (FCCU)	Particulate matter, total < 2.5 µ (TPM2.5)	1.3340 LB/TON OF COKE BURN	
TX-0562	9604A/PSD-TX-653M1	07/09/2010	CITGO REFINING AND CHEMICALS COMPANY LP CORPUS CHRISTI EAST PLANT	50.002	No. 2 FCCU	Carbon Monoxide	500.0000 PPMVD	BACT-PSD
				50.002	No. 2 FCCU	Nitrogen Oxides (NOx)	180.0000 PPMVD	BACT-PSD
				50.002	No. 2 FCCU	Particulate matter, total (TPM)	2.0000 LB/1000 LB COKE BURN	OTHER CASE-BY-CASE
				50.002	No. 2 FCCU	Process Notes:	Hydrotreated, unhydrotreated and/or purchased gas oil is processed in the No. 2 FCCU to catalytically cract into lighter components.	
				50.002	No. 2 FCCU	Sulfur Dioxide (SO2)	25.0000 PPMVD	BACT-PSD
				50.002	No. 2 FCCU	Sulfuric Acid (mist, vapors, etc)	1.0000 LB/1000 LB COKE BURN	OTHER CASE-BY-CASE
				50.002	No. 2 FCCU	Volatile Organic Compounds (VOC)	10.0000 PPMVD	BACT-PSD
				50.002	No. 2 FCCU	Carbon Monoxide	500.0000 PPMVD	BACT-PSD
				50.002	No. 2 FCCU	Nitrogen Oxides (NOx)	180.0000 PPMVD	BACT-PSD
				50.002	No. 2 FCCU	Particulate matter, total (TPM)	2.0000 LB/1000 LB COKE BURN	OTHER CASE-BY-CASE
				50.002	No. 2 FCCU	Process Notes:	Hydrotreated, unhydrotreated and/or purchased gas oil is processed in the No. 2 FCCU to catalytically cract into lighter components.	
				50.002	No. 2 FCCU	Sulfur Dioxide (SO2)	25.0000 PPMVD	BACT-PSD
				50.002	No. 2 FCCU	Sulfuric Acid (mist, vapors, etc)	1.0000 LB/1000 LB COKE BURN	OTHER CASE-BY-CASE
				50.002	No. 2 FCCU	Volatile Organic Compounds (VOC)	10.0000 PPMVD	BACT-PSD
DE-0020	AQM-003/00016	02/26/2010	VALERO ENERGY CORP VALERO DELAWARE CITY REFINERY	50.003	FLUIDIZED BED CATALYTIC CRACKING UNIT (FCCU)	Nitrogen Dioxide (NO2)	20 PPMVD (365-DAY ROLLING AV); 40 PPMVD (7-DAY ROLLING AV)	RACT
				50.003	FLUIDIZED BED CATALYTIC CRACKING UNIT (FCCU)	Sulfur Dioxide (SO2)	25 PPMVD@0%O2 (365 DAY ROLLING AVERAGE); 50 PPMVD@0%O2 (7 DAY ROLLING AVERAGE)	BACT-PSD
				50.003	FLUIDIZED BED COKING UNIT (FCU)	Sulfur Dioxide (SO2)	25 PPMVD @ 0% O2 (365 DAY ROLLING AVERAGE); 50 PPMVD @ 0% O2 (7 DAY ROLLING AVERAGE)	BACT-PSD
				12.39	PACKAGE BOILERS (2004)	Nitrogen Oxides (NOx)	0.02 LB/MMBTU (3-HR AVERAGE); 24.9 T (12 MONTHS)	RACT
				12.39	PACKAGE BOILERS (2004)	Process Notes:	216 MMBtu/hr; TWO PACKAGE BOILERS FIRST PROPOSED IN 2004.	RACT
				62.019	SULFUR RECOVERY UNIT	Sulfur Dioxide (SO2)	250 PPMVD @ 0% O2 (12-HR ROLLING AV); 122 LB/H (24-HR ROLLING AV)	BACT-PSD
				62.019	SULFUR RECOVERY UNIT	Process Notes:	822 LONG TONS PER DAY EQUIVALENT SULFUR CAPACITY	BACT-PSD
				11.39	CRUDE UNIT ATMOSPHERIC HEATER 21-H-701	Ammonia (NH3)	10 PPMVD @ 3% O2; 16.5 T (12 MONTHS)	RACT

RBLC Search Results: FCC Units

RBLC ID	PERMIT	DATE	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				11.39	CRUDE UNIT ATMOSPHERIC HEATER 21-H-701	Nitrogen Oxides (NOx)	0.04 LB/MMBTU (3-HR ROLLING AV); 20 LB/H (24-HR ROLLING AV)	RACT
				11.39	CRUDE UNIT ATMOSPHERIC HEATER 21-H-701	Process Notes:	456 MMBTU/HR ON 12-MONTH ROLLING BASIS AND 504 MMBTU/HR ON 24-HOUR ROLLING AVEREAGE	RACT
				12.39	CRUDE UNIT VACUUM HEATER 21-H-2	Ammonia (NH3)	10 PPMVD @ 3% O2; 16.5 T (12-MONTHS)	RACT
				12.39	CRUDE UNIT VACUUM HEATER 21-H-2	Nitrogen Oxides (NOx)	0.04 LB/MMBTU (3-HR ROLLING AV); 20 LB/H (24-HR ROLLING AV)	RACT
				12.39	CRUDE UNIT VACUUM HEATER 21-H-2	Process Notes:	240 MMBTU/HR ON 12-MONTH ROLLING AVERAGE BASIS; 249 MMBTU/HR ON 24-HOUR ROLLING AVERAGE BASIS	RACT
				11.39	DCPP BOILER 1	Nitrogen Oxides (NOx)	0.015 LB/MMBTU (24-HOUR ROLLING AVERAGE); 40.6 (12-MONTHS)	BACT-PSD
				11.39	DCPP BOILER 3	Nitrogen Oxides (NOx)	0.015 LB/MMBTU (24-HOUR ROLLING AVERAGE); 40.6 T (12-MONTHS)	BACT-PSD
				13.31	PACKAGE BOILERS (2009)	Ammonia (NH3)	10 PPMVD @ 3% O2; 11.9 T (12 MONTHS)	RACT
				13.31	PACKAGE BOILERS (2009)	Nitrogen Oxides (NOx)	0.015 LB/MMBTU	RACT
				13.31	PACKAGE BOILERS (2009)	Process Notes:	FOUR PACKAGE BOILERS	RACT
OH-0308	04-01447	02/23/2009	SUNOCO, INC. SUN COMPANY, INC., TOLEDO REFINERY	11.390	BOILER (2)	Carbon Monoxide	28.0000 LB/H	BACT-PSD
				11.390	BOILER (2)	Nitrogen Oxides (NOx)	13.6000 LB/H	N/A
				11.390	BOILER (2)	Particulate matter, filterable < 10 µ (FPM10)	2.5300 LB/H	BACT-PSD
				11.390	BOILER (2)	Sulfur Dioxide (SO2)	9.1500 LB/H	N/A
				11.390	BOILER (2)	Visible Emissions (VE)	20.0000 % OPACITY	N/A
				11.390	BOILER (2)	Volatile Organic Compounds (VOC)	1.8300 LB/H	N/A
				11.390	BOILER (2)	Process Notes:	TWO BOILERS FIRED WITH REFINERY PROCESS GAS, NATURAL GAS, RESIDUAL #6 OIL, AND CO FROM FLUIDIZED CATALYTIC CRACKING UNIT; NEW LOW NOX BURNERS TO BE INSTALLED	N/A
				50.003	FLUIDIZED CATALYTIC CRACKING UNIT	Sulfur Dioxide (SO2)	1286.0000 LB/H	N/A
				50.003	FLUIDIZED CATALYTIC CRACKING UNIT	Ammonia (NH3)	5.0000 PPMV	BACT-PSD
				50.003	FLUIDIZED CATALYTIC CRACKING UNIT	Carbon Monoxide	180.0000 PPMVD@ 0% O2	N/A
				50.003	FLUIDIZED CATALYTIC CRACKING UNIT	Nitrogen Oxides (NOx)	40.0000 PPMVD @ 0% O2	N/A
				50.003	FLUIDIZED CATALYTIC CRACKING UNIT	Particulate matter, filterable (FPM)	0.4500 LB/1000 LB	BACT-PSD
				50.003	FLUIDIZED CATALYTIC CRACKING UNIT	Particulate matter, filterable < 10 µ (FPM10)	331.9200 T/YR	
				50.003	FLUIDIZED CATALYTIC CRACKING UNIT	Process Notes:	FLUIDIZED CATALYTIC CRACKING UNIT (FCCU) WITH CAPACITY OF 100,000 BARRELS/DAY; W/ CO CONTROLLED BY TWO BOILERS (WHICH SHARE EMISSIONS LIMITS WITH THE FCCU); AN SCR SYSTEM FOR NOX, AND A WET GAS SCRUBBER FOR SO2 AND PM CONTROL.	N/A
				50.003	FLUIDIZED CATALYTIC CRACKING UNIT	Sulfur Dioxide (SO2)	316.0000 LB/H	N/A
				50.003	FLUIDIZED CATALYTIC CRACKING UNIT	Sulfuric Acid (mist, vapors, etc)	263.1100 T/YR	N/A
				50.003	FLUIDIZED CATALYTIC CRACKING UNIT	Visible Emissions (VE)	20.0000 % OPACITY	N/A
				50.003	FLUIDIZED CATALYTIC CRACKING UNIT	Volatile Organic Compounds (VOC)	3.6700 LB/H	N/A
				50.003	FLUIDIZED CATALYTIC CRACKING UNIT	Ammonia (NH3)	5.0000 PPMV	BACT-PSD
				50.003	FLUIDIZED CATALYTIC CRACKING UNIT	Carbon Monoxide	180.0000 PPMVD@ 0% O2	N/A
				50.003	FLUIDIZED CATALYTIC CRACKING UNIT	Nitrogen Oxides (NOx)	40.0000 PPMVD @ 0% O2	N/A
				50.003	FLUIDIZED CATALYTIC CRACKING UNIT	Particulate matter, filterable (FPM)	0.4500 LB/1000 LB	BACT-PSD
				50.003	FLUIDIZED CATALYTIC CRACKING UNIT	Particulate matter, filterable < 10 µ (FPM10)	331.9200 T/YR	
				50.003	FLUIDIZED CATALYTIC CRACKING UNIT	Sulfur Dioxide (SO2)	316.0000 LB/H	N/A
				50.003	FLUIDIZED CATALYTIC CRACKING UNIT	Sulfuric Acid (mist, vapors, etc)	263.1100 T/YR	N/A
				50.003	FLUIDIZED CATALYTIC CRACKING UNIT	Visible Emissions (VE)	20.0000 % OPACITY	N/A
				50.004	PROPYLENE-PROPANE LOADING RACK	Volatile Organic Compounds (VOC)	1.6 T/YR (PER ROLLING 12-MONTH PERIOD); 0.0935	N/A
				50.006	SULFUR RECOVERY UNIT	Sulfur Dioxide (SO2)	0.07 LB/LB (LB SO2/LB OF SULFUR PROCESSED); 250 PPMVD @ 0% AIR (AS ROLLING 12-HR AVERAGE, 0% EXCESS AIR)	N/A
				50.006	SULFUR RECOVERY UNIT	Visible Emissions (VE)	10 % OPACITY (AS A 6-MINUTE AVERAGE)	N/A
				50.006	SULFUR RECOVERY UNIT	Volatile Organic Compounds (VOC)	0.89 LB/H; 3.89 T/YR (BASED ON 365-DAY SUM OF DAILY EMISSIONS)	N/A
				50.006	SULFUR RECOVERY UNIT	Hydrogen Sulfide	10 PPMVD; 0.95 T/YR (BASED ON 365-DAY SUM OF DAILY EMISSIONS)	N/A
				50.006	SULFUR RECOVERY UNIT	Carbon Monoxide	2.59 LB/H; 11.34 T/YR (BASED ON 365-DAY SUM OF DAILY EMISSIONS)	BACT-PSD
				50.006	SULFUR RECOVERY UNIT	Nitrogen Oxides (NOx)	2.55 LB/H; 11.17 T/YR (BASED ON 365-DAY SUM OF DAILY EMISSIONS)	N/A
				50.006	SULFUR RECOVERY UNIT	Particulate matter, filterable < 10 µ (FPM10)	1.36 LB/H; 5.96 T/YR (BASED ON 365-DAY SUM OF DAILY EMISSIONS)	BACT-PSD
				50.006	SULFUR RECOVERY UNIT	Sulfur Dioxide (SO2)	9.88 LB/H; 43.28 T/YR (BASED ON 365-DAY SUM OF DAILY EMISSIONS)	N/A
				50.006	SULFUR RECOVERY UNIT	Process Notes:	CLAUS SULFUR RECOVERY UNIT AND SULFUR PIT WITH TAIL GAS UNIT AND INCINERATOR CONTROL. STACK GAS FLOW RATE OF 4020 DSCFM OR 3899 DSCFM AT 0% O2. BURN NATURAL GAS OR REFINERY FUEL GAS ONLY CONTINUOUS MONITORING SYSTEM FOR SO2 EACH SRU IS SUBJECT TO THE REQUIREMENTS OF PART 60 SUBPARTS A AND J, AND PART 63 SUBPARTS A AND UUU	
				50.007	LEAK DETECTION AND REPAIR (LDAR) PROGRAM	Volatile Organic Compounds (VOC)	385.43 T/YR (PER ROLLING 12 MONTHS)	MACT

RBLC Search Results: FCC Units

RBLC ID	PERMIT	DATE	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				50.008	FLARE, STEAM ASSISTED	Visible Emissions (VE)	0 % OPACITY (NO VE EXCEPT FOR 5 MIN DURING ANY 2 HRS)	MACT
				50.008	FLARE, STEAM ASSISTED	Volatile Organic Compounds (VOC)	0.84 LB/H; 3.68 T/YR (BASED ON 365-DAY SUM OF DAILY EMISSIONS)	MACT
				50.008	FLARE, STEAM ASSISTED	Carbon Monoxide	12.8 LB/H; 56.07 T/YR (BASED ON 365-DAY SUM OF DAILY EMISSIONS)	BACT-PSD
				50.008	FLARE, STEAM ASSISTED	Nitrogen Oxides (NOx)	15.23 LB/H; 66.71 T/YR (BASED ON 365-DAY SUM OF DAILY EMISSIONS)	N/A
				50.008	FLARE, STEAM ASSISTED	Particulate matter, filterable < 10 µ (FPM10)	1.16 LB/H; 5.08 T/YR (BASED ON 365-DAY SUM OF DAILY EMISSIONS)	BACT-PSD
				50.008	FLARE, STEAM ASSISTED	Sulfur Dioxide (SO2)	4.2 LB/H; 18.4 T/YR (BASED ON 365-DAY SUM OF DAILY EMISSIONS)	N/A
				50.008	FLARE, STEAM ASSISTED	Process Notes:	FLARE, STEAM ASSISTED, TO CONTROL HYDROCARBON EMISSIONS FROM PROCESS VENTS. SUBJECT TO PART 63, SUBPART CC AND PART 60, SUBPARTS A, J, AND GGG.	
				50.009	WASTEWATER STREAMS	Volatile Organic Compounds (VOC)	91.19 T/YR	MACT
				50.999	COOLING TOWER	Visible Emissions (VE)	10 % OPACITY (AS A 6-MINUTE AVERAGE, EXCEPT PER RULE)	BACT-PSD
				50.999	COOLING TOWER	Volatile Organic Compounds (VOC)	0.084 LB/H; 0.37 T/YR	N/A
				50.999	COOLING TOWER	Particulate matter, filterable (FPM)	0.12 LB/H; 0.52 T/YR (AS A ROLLING 12-MONTH SUMMATION)	N/A
				50.999	COOLING TOWER	Process Notes:	NON-CONTACT, INDUCED DRAFT, WITH DRIFT ELIMINATION	
TX-0290	21262/PSD-TX-928	09/27/2007	SHELL OIL COMPANY DEER PARK REFINERY LIMITED PARTNERSHIP	50.003	FLUIDIZED-BED CATALYTIC CRACKING UNIT (FCCU)	Nitrogen Oxides (NOx)	20.0000 PPMVD @ 0% O2	LAER
				50.003	FLUIDIZED-BED CATALYTIC CRACKING UNIT (FCCU)	Process Notes:		
IL-0079	01100084	08/05/2002	PREMCOR REFINING GROUP INC PREMCOR REFINING GROUP INC	50.003	FCCU	Volatile Organic Compounds (VOC)	9.8000 LB/H	BACT-PSD
				50.003	FCCU	Particulate Matter (PM)	1.0000 LB/1000 LB	
				50.003	FCCU	Process Notes:		BACT-PSD
OK-0102	2003-336-C PSD	08/18/2004	CONOCOPHILLIPS PONCA CITY REFINERY	50.003	FCCU, (2)	Sulfur Dioxide (SO2)	25.0000 PPMVD@0%O2	BACT-PSD
				50.003	FCCU, (2)	Carbon Monoxide	150.0000 PPMVD @ 0% O2	
				50.003	FCCU, (2)	Process Notes:	FCCU units 4 & 5, Unit 5 future max rate: 48,000 bbl/day	BACT-PSD
				12.3	PROCESS HEATERS AND BOILERS	Volatile Organic Compounds (VOC)	0.0054 LB/MMBTU	BACT-PSD
				12.3	PROCESS HEATERS AND BOILERS	Carbon Monoxide	0.04 LB/MMBTU	BACT-PSD
				12.3	PROCESS HEATERS AND BOILERS	Process Notes:	Process heaters H-1001, H-9901, H-9902, USLD-5/5a, NH-6007, H-6014, H-6015, H-5001, H-0057, H-0058, and H-0059, and steam boilers B-0009 and B-0010. Maximum heat rate ranges from 12 mmBtu/h to 241 mmBtu/h. Ultra low NOx burners.	BACT-PSD
				50.007	EQUIPMENT LEAKS	Volatile Organic Compounds (VOC)	0	BACT-PSD
				50.004	TANK T-1101	Volatile Organic Compounds (VOC)	0	BACT-PSD
				50.007	FCCU COOLING TOWER	Volatile Organic Compounds (VOC)	0	BACT-PSD
				50.005	HYDROGEN PLANT DEAERATOR VENT	Methanol	0	BACT-PSD

RBLC Search Results: FCC-related terms

RBLC ID	PERMIT	DATE	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
PA-0312	23-0003Z	2016-01-11	MONROE ENERGY, LLC MONROE ENERGY LLC/TRAINER	50.999	FCC Cooling Tower	Particulate matter, total (TPM)	2.0000 GRAIN	OTHER CASE-BY-CASE
				50.999	FCC Cooling Tower	Process Notes:	FCC Cooling Tower equipped with drift eliminators, drift rate 0.0005%	
				50.999	FCC Cooling Tower	Volatile Organic Compounds (VOC)	31.0000 PPMW	LAER
LA-0261	PSD-LA-745(M-2)	2012-04-26	ALON REFINING KROTZ SPRINGS, INC. KROTZ SPRINGS REFINERY	50.003	Fluid Catalytic Cracking Unit (FCCU) (1-85, EQT 0071)	Nitrogen Oxides (NOx)	80.0000 PPMVD @ 0% O2	BACT-PSD
				50.003	Fluid Catalytic Cracking Unit (FCCU) (1-85, EQT 0071)	Process Notes:		
				50.003	Fluid Catalytic Cracking Unit (FCCU) (1-85, EQT 0071)	Sulfur Dioxide (SO2)	25.0000 PPMVD @ 0% O2	BACT-PSD
TX-0587	5920A AND PSDTX103M4	2010-12-29	CONOCO PHILLIPS COMPANY SWEENY REFINERY	50.003	Fluid Catalytic Cracking Unit (FCCU)	Particulate matter, total < 2.5 µ (TPM2.5)	1.3340 LB/TON OF COKE BURN	BACT-PSD
				50.003	Fluid Catalytic Cracking Unit (FCCU)	Process Notes:		
TX-0562	9604A/PSD-TX-653M1	2010-07-09	CITGO REFINING AND CHEMICALS COMPANY LP CORPUS CHRISTI EAST PLANT	50.002	No. 2 FCCU	Carbon Monoxide	500.0000 PPMVD	BACT-PSD
				50.002	No. 2 FCCU	Nitrogen Oxides (NOx)	180.0000 PPMVD	BACT-PSD
				50.002	No. 2 FCCU	Particulate matter, total (TPM)	2.0000 LB/1000 LB COKE BURN	OTHER CASE-BY-CASE
				50.002	No. 2 FCCU	Process Notes:	Hydrotreated, unhydrotreated and/or purchased gas oil is processed in the No. 2 FCCU to catalytically cract into lighter components.	
				50.002	No. 2 FCCU	Sulfur Dioxide (SO2)	25.0000 PPMVD	BACT-PSD
				50.002	No. 2 FCCU	Sulfuric Acid (mist, vapors, etc)	1.0000 LB/1000 LB COKE BURN	OTHER CASE-BY-CASE
				50.002	No. 2 FCCU	Volatile Organic Compounds (VOC)	10.0000 PPMVD	BACT-PSD
TX-0592	38754 AND PSDTX324M13	2010-03-29	VALERO REFINING-TEXAS LP CORPUS CHRISTI WEST REFINERY	50.003	FCCU	Carbon Monoxide	2085.0000 LB/H	OTHER CASE-BY-CASE
				50.003	FCCU	Process Notes:	CO limits are established during FCC Unit startup. All other pollutant limits are the same as for normal operations.	
DE-0020	AQM-003/00016	2010-02-26	VALERO ENERGY CORP VALERO DELAWARE CITY REFINERY	50.003	FLUIDIZED BED CATALYTIC CRACKING UNIT (FCCU)	Nitrogen Dioxide (NO2)	20.0000 PPMVD	RACT
				50.003	FLUIDIZED BED CATALYTIC CRACKING UNIT (FCCU)	Process Notes:		
				50.003	FLUIDIZED BED CATALYTIC CRACKING UNIT (FCCU)	Sulfur Dioxide (SO2)	25.0000 PPMVD@0%O2	BACT-PSD
LA-0213	PSD-LA-619(M5)	2009-11-17	VALERO REFINING - NEW ORLEANS, LLC ST. CHARLES REFINERY	50.003	FCCU REGENERATOR (16-77)	Carbon Monoxide	696.8000 LB/H	BACT-PSD
				50.003	FCCU REGENERATOR (16-77)	Hydrogen Sulfide	0.9000 LB/H	BACT-PSD
				50.003	FCCU REGENERATOR (16-77)	Nitrogen Oxides (NOx)	145.3200 LB/H	BACT-PSD
				50.003	FCCU REGENERATOR (16-77)	Particulate matter, total < 10 µ (TPM10)	74.6000 LB/H	BACT-PSD
				50.003	FCCU REGENERATOR (16-77)	Process Notes:	130,000 BBLS/DAY	
				50.003	FCCU REGENERATOR (16-77)	Sulfur Oxides (SOx)	176.1200 LB/H	BACT-PSD
				50.003	FCCU REGENERATOR (16-77)	Volatile Organic Compounds (VOC)	15.5000 LB/H	BACT-PSD
LA-0222	PSD-LA-199(M-8)	2009-09-15	CHALMETTE REFINING, LLC CHALMETTE REFINERY	50.003	FLUIDIZED CATALYTIC CRACKING UNIT (FCCU)	Carbon Monoxide	732.8000 T/YR	BACT-PSD
				50.003	FLUIDIZED CATALYTIC CRACKING UNIT (FCCU)	Process Notes:		
LA-0238	PSD-LA-75(M3)	2009-07-10	CONOCOPHILLIPS COMPANY ALLIANCE REFINERY	50.003	FCCU REGEN VENT - SU/SD OPERATIONS	Carbon Monoxide	16674.1800 LB/H	BACT-PSD
				50.003	FCCU REGEN VENT - SU/SD OPERATIONS	Process Notes:		
				50.003	FCCU REGEN VENT - SU/SD OPERATIONS	Sulfur Dioxide (SO2)	1286.0000 LB/H	BACT-PSD
				12.310	FCCU FEED HEATER	Carbon Monoxide	0.5500 LB/H	BACT-PSD
				12.310	FCCU FEED HEATER	Process Notes:		
				12.310	FCCU FEED HEATER	Sulfur Dioxide (SO2)	4.7900 LB/H	BACT-PSD
LA-0261	PSD-LA-745(M-2)	2012-04-26	ALON REFINING KROTZ SPRINGS, INC. KROTZ SPRINGS REFINERY	50.003	Fluid Catalytic Cracking Unit (FCCU) (1-85, EQT 0071)	Nitrogen Oxides (NOx)	80.0000 PPMVD @ 0% O2	BACT-PSD
				50.003	Fluid Catalytic Cracking Unit (FCCU) (1-85, EQT 0071)	Process Notes:		
				50.003	Fluid Catalytic Cracking Unit (FCCU) (1-85, EQT 0071)	Sulfur Dioxide (SO2)	25.0000 PPMVD @ 0% O2	BACT-PSD
TX-0606	47256,PSDTX402M3	2011-12-13	BP PRODUCTS NORTH AMERICA INC TEXAS CITY REFINERY	50.003	Fluidized Catalytic Cracking Unit No.3	Process Notes:	Throughput is confidential	
				50.003	Fluidized Catalytic Cracking Unit No.3	Sulfuric Acid (mist, vapors, etc)	0.3300 LB H2SO4/1000 LBCOKE	BACT-PSD
TX-0587	5920A AND PSDTX103M4	2010-12-29	CONOCO PHILLIPS COMPANY SWEENY REFINERY	50.003	Fluid Catalytic Cracking Unit (FCCU)	Particulate matter, total < 2.5 µ (TPM2.5)	1.3340 LB/TON OF COKE BURN	BACT-PSD

RBLC Search Results: FCC-related terms

RBLC ID	PERMIT	DATE	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				50.003	Fluid Catalytic Cracking Unit (FCCU)	Process Notes:		
DE-0020	AQM-003/00016	2010-02-26	VALERO ENERGY CORP VALERO DELAWARE CITY REFINERY	50.003	FLUIDIZED BED CATALYTIC CRACKING UNIT (FCCU)	Nitrogen Dioxide (NO2)	20.0000 PPMVD	RACT
				50.003	FLUIDIZED BED CATALYTIC CRACKING UNIT (FCCU)	Process Notes:		
				50.003	FLUIDIZED BED CATALYTIC CRACKING UNIT (FCCU)	Sulfur Dioxide (SO2)	25.0000 PPMVD@0%O2	BACT-PSD
LA-0222	PSD-LA-199(M-8)	2009-09-15	CHALMETTE REFINING, LLC CHALMETTE REFINERY	50.003	FLUIDIZED CATALYTIC CRACKING UNIT (FCCU)	Carbon Monoxide	732.8000 T/YR	BACT-PSD
				50.003	FLUIDIZED CATALYTIC CRACKING UNIT (FCCU)	Process Notes:		
OH-0308	04-01447	2009-02-23	SUNOCO, INC. SUN COMPANY, INC., TOLEDO REFINERY	50.003	FLUIDIZED CATALYTIC CRACKING UNIT	Ammonia (NH3)	5.0000 PPMV	N/A
				50.003	FLUIDIZED CATALYTIC CRACKING UNIT	Carbon Monoxide	180.0000 PPMVD@ 0% O2	BACT-PSD
				50.003	FLUIDIZED CATALYTIC CRACKING UNIT	Nitrogen Oxides (NOx)	40.0000 PPMVD @ 0% O2	N/A
				50.003	FLUIDIZED CATALYTIC CRACKING UNIT	Particulate matter, filterable (FPM)	0.4500 LB/1000 LB	N/A
				50.003	FLUIDIZED CATALYTIC CRACKING UNIT	Particulate matter, filterable < 10 µ (FPM10)	331.9200 T/YR	BACT-PSD
				50.003	FLUIDIZED CATALYTIC CRACKING UNIT	Process Notes:	FLUIDIZED CATALYTIC CRACKING UNIT (FCCU) WITH CAPACITY OF 100,000 BARRELS/DAY; W/ CO CONTROLLED BY TWO BOILERS (WHICH SHARE EMISSIONS LIMITS WITH THE FCCU); AN SCR SYSTEM FOR NOX, AND A WET GAS SCRUBBER FOR SO2 AND PM CONTROL.	
				50.003	FLUIDIZED CATALYTIC CRACKING UNIT	Sulfur Dioxide (SO2)	316.0000 LB/H	N/A
				50.003	FLUIDIZED CATALYTIC CRACKING UNIT	Sulfuric Acid (mist, vapors, etc)	263.1100 T/YR	N/A
				50.003	FLUIDIZED CATALYTIC CRACKING UNIT	Visible Emissions (VE)	20.0000 % OPACITY	N/A
				50.003	FLUIDIZED CATALYTIC CRACKING UNIT	Volatile Organic Compounds (VOC)	3.6700 LB/H	N/A
TX-0606	47256,PSDTX402M3	2011-12-13	BP PRODUCTS NORTH AMERICA INC TEXAS CITY REFINERY	50.003	Fluidized Catalytic Cracking Unit No.3	Process Notes:	Throughput is confidential	
				50.003	Fluidized Catalytic Cracking Unit No.3	Sulfuric Acid (mist, vapors, etc)	0.3300 LB H2SO4/1000 LBCOKE	BACT-PSD
LA-0222	PSD-LA-199(M-8)	2009-09-15	CHALMETTE REFINING, LLC CHALMETTE REFINERY	50.003	FLUIDIZED CATALYTIC CRACKING UNIT (FCCU)	Carbon Monoxide	732.8000 T/YR	BACT-PSD
				50.003	FLUIDIZED CATALYTIC CRACKING UNIT (FCCU)	Process Notes:		
OH-0308	04-01447	2009-02-23	SUNOCO, INC. SUN COMPANY, INC., TOLEDO REFINERY	50.003	FLUIDIZED CATALYTIC CRACKING UNIT	Ammonia (NH3)	5.0000 PPMV	N/A
				50.003	FLUIDIZED CATALYTIC CRACKING UNIT	Carbon Monoxide	180.0000 PPMVD@ 0% O2	BACT-PSD
				50.003	FLUIDIZED CATALYTIC CRACKING UNIT	Nitrogen Oxides (NOx)	40.0000 PPMVD @ 0% O2	N/A
				50.003	FLUIDIZED CATALYTIC CRACKING UNIT	Particulate matter, filterable (FPM)	0.4500 LB/1000 LB	N/A
				50.003	FLUIDIZED CATALYTIC CRACKING UNIT	Particulate matter, filterable < 10 µ (FPM10)	331.9200 T/YR	BACT-PSD
				50.003	FLUIDIZED CATALYTIC CRACKING UNIT	Process Notes:	FLUIDIZED CATALYTIC CRACKING UNIT (FCCU) WITH CAPACITY OF 100,000 BARRELS/DAY; W/ CO CONTROLLED BY TWO BOILERS (WHICH SHARE EMISSIONS LIMITS WITH THE FCCU); AN SCR SYSTEM FOR NOX, AND A WET GAS SCRUBBER FOR SO2 AND PM CONTROL.	
				50.003	FLUIDIZED CATALYTIC CRACKING UNIT	Sulfur Dioxide (SO2)	316.0000 LB/H	N/A
				50.003	FLUIDIZED CATALYTIC CRACKING UNIT	Sulfuric Acid (mist, vapors, etc)	263.1100 T/YR	N/A
				50.003	FLUIDIZED CATALYTIC CRACKING UNIT	Visible Emissions (VE)	20.0000 % OPACITY	N/A
				50.003	FLUIDIZED CATALYTIC CRACKING UNIT	Volatile Organic Compounds (VOC)	3.6700 LB/H	N/A

RBLC Search Results: FCC-related terms

RBLC ID	PERMIT	DATE	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
DE-0020	AQM-003/00016	2010-02-26	VALERO ENERGY CORP VALERO DELAWARE CITY REFINERY	50.003	FLUIDIZED BED CATALYTIC CRACKING UNIT (FCCU)	Nitrogen Dioxide (NO2)	20.0000 PPMVD	RACT
				50.003	FLUIDIZED BED CATALYTIC CRACKING UNIT (FCCU)	Process Notes:		
				50.003	FLUIDIZED BED CATALYTIC CRACKING UNIT (FCCU)	Sulfur Dioxide (SO2)	25.0000 PPMVD@0%02	BACT-PSD
LA-0238	PSD-LA-75(M3)	2009-07-10	CONOCOPHILLIPS COMPANY ALLIANCE REFINERY	11.310	CO BOILERS (2)	Carbon Monoxide	379.1000 LB/H	BACT-PSD
				11.310	CO BOILERS (2)	Process Notes:		
				11.310	CO BOILERS (2)	Sulfur Dioxide (SO2)	1286.0000 LB/H	BACT-PSD

RBLC Search Results: 50.002, 50.003

RBLC ID	PERMIT	PERMIT ISSUANCE	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
TX-0886	106921, N270	03/31/2020	MONT BELVIEU NGL FRACTIONATION UNIT	50.002	PROCESS VENTS	Process Notes:	Process vent streams (a) routed to vapor recovery unit (VRU) with non-condensable combusted in hot oil heaters or (b) routed directly to hot oil heaters for combustion; hot oil heater will achieve a VOC destruction of at least 99%. When Heaters down for maintenance, process emissions sent to MSS Flare. Ch. 115 Subchapter B Division 2; Subchapter H Division 1	
				50.002	PROCESS VENTS	Volatile Organic Compounds (VOC)	0	LAER
				50.002	EQUIPMENT LEAK FUGITIVES	Process Notes:	28 LAER leak detection and repair (LDAR) program	LAER
				50.002	EQUIPMENT LEAK FUGITIVES	Volatile Organic Compounds (VOC)	0	LAER
				50.002	EQUIPMENT MSS	Process Notes:	Depressure to flare, minimize emissions by pumping liquids to recovery, degas/purge to flare until residual VOC concentration is less 10,000 ppmv NSPS OOOOa; Ch. 115 Subchapter D Division 3	LAER
				50.002	EQUIPMENT MSS	Volatile Organic Compounds (VOC)		LAER
TX-0849	101616, PSDTX696M2, N214M1,	10/16/2018	TARGA MIDSTREAM SERVICES LLC MONT BELVIEU	50.002	TEG DEHYDRATORS	Process Notes:		
				50.002	TEG DEHYDRATORS	Volatile Organic Compounds (VOC)	0	LAER
				50.002	TEG DEHYDRATORS	Process Notes:		
				50.002	TEG DEHYDRATORS	Volatile Organic Compounds (VOC)	0	LAER
				50.002	PROCESS VENTS	Carbon Dioxide Equivalent (CO2e)	0	BACT-PSD
				50.002	PROCESS VENTS	Process Notes:		
				50.002	PROCESS VENTS	Volatile Organic Compounds (VOC)	0	LAER
				50.002	PROCESS VENTS	Carbon Dioxide Equivalent (CO2e)	0	BACT-PSD
				50.002	PROCESS VENTS	Process Notes:		
				50.002	PROCESS VENTS	Volatile Organic Compounds (VOC)	0	LAER
				50.002	FUGITIVES	Process Notes:		
				50.002	FUGITIVES	Volatile Organic Compounds (VOC)	0	LAER
				50.002	FUGITIVES	Process Notes:		
				50.002	FUGITIVES	Volatile Organic Compounds (VOC)	0	LAER
LA-0331	PDS-LA-805	09/21/2018	VENTURE GLOBAL CALCASIEU PASS, LLC CALCASIEU PASS LNG PROJECT	50.002	Fugitive Equipment Leaks	Carbon Dioxide Equivalent (CO2e)	3141.0000 T/YR	BACT-PSD
				50.002	Fugitive Equipment Leaks	Process Notes:	Fugitive Emissions	
				50.002	Fugitive Equipment Leaks	Volatile Organic Compounds (VOC)	5.0000 T/YR	BACT-PSD
				50.002	Fugitive Equipment Leaks	Carbon Dioxide Equivalent (CO2e)	3141.0000 T/YR	BACT-PSD
				50.002	Fugitive Equipment Leaks	Process Notes:	Fugitive Emissions	
				50.002	Fugitive Equipment Leaks	Volatile Organic Compounds (VOC)	5.0000 T/YR	BACT-PSD
				50.002	Storage Tanks	Process Notes:	Pentane and Amine Flash Drums	
				50.002	Storage Tanks	Volatile Organic Compounds (VOC)	0	BACT-PSD
				50.002	Storage Tanks	Process Notes:	Pentane and Amine Flash Drums	
				50.002	Storage Tanks	Volatile Organic Compounds (VOC)	0	BACT-PSD
TX-0847	6825A, N65, PSDTX49M1, GHGPSDT	09/16/2018	PREMCOR REFINING GROUP VALERO PORT ARTHUR REFINERY	50.002	Cooling Towers/Heat Exchange System	Particulate matter, total < 10 µ (TPM10)	0.0010 %	BACT-PSD
				50.002	Cooling Towers/Heat Exchange System	Particulate matter, total < 2.5 µ (TPM2.5)	0.0010 %	BACT-PSD
				50.002	Cooling Towers/Heat Exchange System	Process Notes:		
				50.002	Cooling Towers/Heat Exchange System	Volatile Organic Compounds (VOC)	0.0800 PPMW	BACT-PSD
				50.002	Cooling Towers/Heat Exchange System	Particulate matter, total < 10 µ (TPM10)	0.0010 %	BACT-PSD
				50.002	Cooling Towers/Heat Exchange System	Particulate matter, total < 2.5 µ (TPM2.5)	0.0010 %	BACT-PSD
				50.002	Cooling Towers/Heat Exchange System	Process Notes:		
				50.002	Cooling Towers/Heat Exchange System	Volatile Organic Compounds (VOC)	0.0800 PPMW	BACT-PSD
TX-0841	PSDTX1328M2, N260, GHGPSDTX38M	07/01/2018	DOW CHEMICAL LHC-9	50.002	Cooling Tower/Heat Exchange System	Particulate matter, filterable (FPM)	0	BACT-PSD
				50.002	Cooling Tower/Heat Exchange System	Particulate matter, filterable < 10 µ (FPM10)	0	BACT-PSD
				50.002	Cooling Tower/Heat Exchange System	Particulate matter, filterable < 2.5 µ (FPM2.5)	0	BACT-PSD
				50.002	Cooling Tower/Heat Exchange System	Process Notes:		
				50.002	Cooling Tower/Heat Exchange System	Particulate matter, filterable (FPM)	0	BACT-PSD
				50.002	Cooling Tower/Heat Exchange System	Particulate matter, filterable < 10 µ (FPM10)	0	BACT-PSD

RBLC Search Results: 50.002, 50.003

RBLC ID	PERMIT	PERMIT ISSUANC	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				50.002	Cooling Tower/Heat Exchange System	Particulate matter, filterable < 2.5 µ (FPM2.5)	0	BACT-PSD
				50.002	Cooling Tower/Heat Exchange System	Process Notes:		
TX-0816	139479, PSDTX1496, GHGPSDTX157	02/14/2017	CORPUS CHRISTI LIQUEFACTION STAGE III, LLC CORPUS CHRISTI LIQUEFACTION	50.002	Thermal Oxidizers	Process Notes:	throughput of acid gas for each train. Each LNG train has an identical thermal oxidizer.	
				50.002	Thermal Oxidizers	Volatile Organic Compounds (VOC)	0.0300 LB/H	BACT-PSD
				50.002	Thermal Oxidizers	Process Notes:	throughput of acid gas for each train. Each LNG train has an identical thermal oxidizer.	
				50.002	Thermal Oxidizers	Volatile Organic Compounds (VOC)	0.0300 LB/H	BACT-PSD
TX-0679	GHGPSDTX123	02/27/2015	CORPUS CHRISTI LIQUEFACTION LLC CORPUS CHRISTI LIQUEFACTION PLANT	50.002	Thermal Oxidizers	Methane	0	BACT-PSD
				50.002	Thermal Oxidizers	Process Notes:		
				50.002	Thermal Oxidizers	Methane	0	BACT-PSD
				50.002	Thermal Oxidizers	Process Notes:		

RBLC Search Results: 50.002, 50.003

RBLC ID	PERMIT	PERMIT ISSUANCE	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
TX-0723	N182	11/21/2014	LONE STAR NGL FRACTIONATORS LLC NATURAL GAS LIQUIDS PROCESSING PLANT	50.002	Thermal Oxidizer	Nitrogen Oxides (NOx)	0.0250 LB/MMBTU	LAER
				50.002	Thermal Oxidizer	Process Notes:	A high efficiency TO is proposed to control any organic compounds and H2S removed with the CO2 in the amine unit and any organics carried out when the mole sieve beds are regenerated to remove the water. Unit is designed to achieve 99.9% VOC DRE.	
				50.002	Thermal Oxidizer	Volatile Organic Compounds (VOC)	0	LAER
				50.002	Thermal Oxidizer	Nitrogen Oxides (NOx)	0.0250 LB/MMBTU	LAER
				50.002	Thermal Oxidizer	Process Notes:	A high efficiency TO is proposed to control any organic compounds and H2S removed with the CO2 in the amine unit and any organics carried out when the mole sieve beds are regenerated to remove the water. Unit is designed to achieve 99.9% VOC DRE.	
				50.002	Thermal Oxidizer	Volatile Organic Compounds (VOC)	0	LAER
				50.002	Flare	Carbon Monoxide	0.2755 LB/MMBTU	LAER
				50.002	Flare	Nitrogen Oxides (NOx)	0.1380 LB/MMBTU	LAER
				50.002	Flare	Process Notes:	It is currently handling process vent and MSS flow from the 2 present fractionation units and proposed to be connected to this fractionation unit as a back up to the TO.	
				50.002	Flare	Volatile Organic Compounds (VOC)	0	LAER
				50.002	Flare	Carbon Monoxide	0.2755 LB/MMBTU	LAER
				50.002	Flare	Nitrogen Oxides (NOx)	0.1380 LB/MMBTU	LAER
				50.002	Flare	Process Notes:	It is currently handling process vent and MSS flow from the 2 present fractionation units and proposed to be connected to this fractionation unit as a back up to the TO.	
				50.002	Flare	Volatile Organic Compounds (VOC)	0	LAER
				50.002	Hot Oil Heater	Nitrogen Oxides (NOx)	0.0063 LB/MMBTU	LAER
				50.002	Hot Oil Heater	Process Notes:	Used to heat the hot oil which is pumped to the distillation column heat exchange reboilers to boil the NGL fractions for the separation. It will use good combustion practices through low NOX burners and an SCR control device to minimize emissions.	
				50.002	Hot Oil Heater	Nitrogen Oxides (NOx)	0.0063 LB/MMBTU	LAER
				50.002	Hot Oil Heater	Process Notes:	Used to heat the hot oil which is pumped to the distillation column heat exchange reboilers to boil the NGL fractions for the separation. It will use good combustion practices through low NOX burners and an SCR control device to minimize emissions.	
				50.002	Mole Sieve Regenerator Heater	Nitrogen Oxides (NOx)	0.0065 LB/MMBTU	LAER
				50.002	Mole Sieve Regenerator Heater	Process Notes:	The heater will be used to heat the oil that heats natural gas in heat exchangers for the mole sieve regeneration. It will use good combustion practices through ultra-low NOX burners with flue gas recirculation to minimize emissions.	
				50.002	Mole Sieve Regenerator Heater	Volatile Organic Compounds (VOC)	0.0013 LB/MMBTU	LAER
				50.002	Mole Sieve Regenerator Heater	Nitrogen Oxides (NOx)	0.0065 LB/MMBTU	LAER
				50.002	Mole Sieve Regenerator Heater	Process Notes:	The heater will be used to heat the oil that heats natural gas in heat exchangers for the mole sieve regeneration. It will use good combustion practices through ultra-low NOX burners with flue gas recirculation to minimize emissions.	
				50.002	Mole Sieve Regenerator Heater	Volatile Organic Compounds (VOC)	0.0013 LB/MMBTU	LAER
				50.002	Diesel Engines	Nitrogen Oxides (NOx)	0	LAER
				50.002	Diesel Engines	Process Notes:	The two diesel fired engines will meet the NSPS IIII emissions requirements for Tier III engines, and they will limit the non-emergency operations to only 100 hour/year each.	
				50.002	Diesel Engines	Volatile Organic Compounds (VOC)	0	LAER
				50.002	Diesel Engines	Nitrogen Oxides (NOx)	0	LAER

RBLC Search Results: 50.002, 50.003

RBLC ID	PERMIT	PERMIT ISSUANC	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				50.002	Diesel Engines	Process Notes:	The two diesel fired engines will meet the NSPS IIII emissions requirements for Tier III engines, and they will limit the non-emergency operations to only 100 hour/year each.	
				50.002	Diesel Engines	Volatile Organic Compounds (VOC)	0	LAER
				50.002	Storage Tanks	Process Notes:	There are two fixed roof storage tanks that vent to the atmosphere for the no-emitting heater oil tanks, two tanks to store the amine, a small diesel tank used to provide fuel for an emergency generator and firewater pump engines, and slop water tank. They will handle material with vapor pressures less than 0.014 psia at storage conditions.	
				50.002	Storage Tanks	Volatile Organic Compounds (VOC)	0	LAER
				50.002	Storage Tanks	Process Notes:	There are two fixed roof storage tanks that vent to the atmosphere for the no-emitting heater oil tanks, two tanks to store the amine, a small diesel tank used to provide fuel for an emergency generator and firewater pump engines, and slop water tank. They will handle material with vapor pressures less than 0.014 psia at storage conditions.	
				50.002	Storage Tanks	Volatile Organic Compounds (VOC)	0	LAER
				50.002	Fugitives	Process Notes:	Piping, valves, pumps, compressors, and other fittings will be subject to a leak detection and repair program with some directed to flare control as minor vents. 28 LAER will be implemented	
				50.002	Fugitives	Volatile Organic Compounds (VOC)	0	LAER
				50.002	Fugitives	Process Notes:	Piping, valves, pumps, compressors, and other fittings will be subject to a leak detection and repair program with some directed to flare control as minor vents. 28 LAER will be implemented	
				50.002	Fugitives	Volatile Organic Compounds (VOC)	0	LAER
TX-0672	PSDTX1306 105710	09/12/2014	CORPUS CHRISTI LIQUEFACTION LLC CORPUS CHRISTI LIQUEFACTION PLANT	50.002	Thermal Oxidizer	Process Notes:	This is the throughput of acid gas for each train. Each LNG train has an identical thermal oxidizer.	
				50.002	Thermal Oxidizer	Sulfur, Total Reduced (TRS)	0	BACT-PSD
				50.002	Thermal Oxidizer	Volatile Organic Compounds (VOC)	0	BACT-PSD
				50.002	Thermal Oxidizer	Process Notes:	This is the throughput of acid gas for each train. Each LNG train has an identical thermal oxidizer.	
				50.002	Thermal Oxidizer	Sulfur, Total Reduced (TRS)	0	BACT-PSD
				50.002	Thermal Oxidizer	Volatile Organic Compounds (VOC)	0	BACT-PSD
TX-0678	104840 N170 PSDTX1302	07/16/2014	FREEPORT LNG DEVELOPMENT LP FREEPORT LNG PRETREATMENT FACILITY	50.002	Thermal Oxidizer	Nitrogen Oxides (NOx)	0.0600 LB/MMBTU	LAER
				50.002	Thermal Oxidizer	Process Notes:	There are 3 LNG trains and each train has a thermal oxidizer.	
				50.002	Thermal Oxidizer	Sulfur, Total Reduced (TRS)	0	BACT-PSD
				50.002	Thermal Oxidizer	Volatile Organic Compounds (VOC)	0	BACT-PSD
				50.002	Thermal Oxidizer	Nitrogen Oxides (NOx)	0.0600 LB/MMBTU	LAER
				50.002	Thermal Oxidizer	Process Notes:	There are 3 LNG trains and each train has a thermal oxidizer.	
				50.002	Thermal Oxidizer	Sulfur, Total Reduced (TRS)	0	BACT-PSD
				50.002	Thermal Oxidizer	Volatile Organic Compounds (VOC)	0	BACT-PSD
TX-0656	PSDTX1340 AND 107764	05/16/2014	NATGASOLINE GAS TO GASOLINE PLANT	50.002	Reformer	Carbon Monoxide	50.0000 PPM	BACT-PSD
				50.002	Reformer	Nitrogen Oxides (NOx)	0.0100 LB/MM BTU	BACT-PSD
				50.002	Reformer	Particulate matter, total < 10 µ (TPM10)	43.7200 T/YR	BACT-PSD
				50.002	Reformer	Particulate matter, total < 2.5 µ (TPM2.5)	32.7900 T/YR	BACT-PSD
				50.002	Reformer	Process Notes:		
				50.002	Reformer	Volatile Organic Compounds (VOC)	5.0000 PPM	BACT-PSD
				50.002	Reformer	Carbon Monoxide	50.0000 PPM	BACT-PSD
				50.002	Reformer	Nitrogen Oxides (NOx)	0.0100 LB/MM BTU	BACT-PSD
				50.002	Reformer	Particulate matter, total < 10 µ (TPM10)	43.7200 T/YR	BACT-PSD
				50.002	Reformer	Particulate matter, total < 2.5 µ (TPM2.5)	32.7900 T/YR	BACT-PSD
				50.002	Reformer	Process Notes:		
				50.002	Reformer	Volatile Organic Compounds (VOC)	5.0000 PPM	BACT-PSD
				50.002	Cooling Tower	Process Notes:		
				50.002	Cooling Tower	Volatile Organic Compounds (VOC)	0.0800 PPM	BACT-PSD
				50.002	Cooling Tower	Process Notes:		
				50.002	Cooling Tower	Volatile Organic Compounds (VOC)	0.0800 PPM	BACT-PSD

RBLC Search Results: 50.002, 50.003

RBLC ID	PERMIT	PERMIT ISSUANC	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
TX-0657	PSDTX1340 AND 107764	05/16/2014	NATGASOLINE LLC BEAUMONT GAS TO GASOLINE PLANT	50.002	Reformer	Carbon Monoxide	50.0000 PPM	BACT-PSD
				50.002	Reformer	Nitrogen Oxides (NOx)	59.4200 TPY	BACT-PSD
				50.002	Reformer	Particulate matter, filterable < 2.5 μ (FPM2.5)	32.7900 TONS	BACT-PSD
				50.002	Reformer	Particulate matter, total (TPM)	43.7200 TPY	BACT-PSD
				50.002	Reformer	Particulate matter, total < 10 μ (TPM10)	43.7200 TPY	BACT-PSD
				50.002	Reformer	Process Notes:		
				50.002	Reformer	Volatile Organic Compounds (VOC)	5.0000 PPM	BACT-PSD
				50.002	Reformer	Carbon Monoxide	50.0000 PPM	BACT-PSD
				50.002	Reformer	Nitrogen Oxides (NOx)	59.4200 TPY	BACT-PSD
				50.002	Reformer	Particulate matter, filterable < 2.5 μ (FPM2.5)	32.7900 TONS	BACT-PSD
				50.002	Reformer	Particulate matter, total (TPM)	43.7200 TPY	BACT-PSD
				50.002	Reformer	Particulate matter, total < 10 μ (TPM10)	43.7200 TPY	BACT-PSD
				50.002	Reformer	Process Notes:		
				50.002	Reformer	Volatile Organic Compounds (VOC)	5.0000 PPM	BACT-PSD
				50.002	Boiler	Carbon Monoxide	50.0000 PPM	BACT-PSD
				50.002	Boiler	Nitrogen Oxides (NOx)	0.0100 LB/MMBTU	BACT-PSD
				50.002	Boiler	Particulate matter, filterable < 2.5 μ (FPM2.5)	17.0800 TONS	BACT-PSD
				50.002	Boiler	Particulate matter, fugitive	22.7700 TONS	
				50.002	Boiler	Particulate matter, total < 10 μ (TPM10)	22.7700 TONS	
				50.002	Boiler	Process Notes:		
				50.002	Boiler	Volatile Organic Compounds (VOC)	14.0000 TONS	BACT-PSD
				50.002	Boiler	Carbon Monoxide	50.0000 PPM	BACT-PSD
				50.002	Boiler	Nitrogen Oxides (NOx)	0.0100 LB/MMBTU	BACT-PSD
				50.002	Boiler	Particulate matter, filterable < 2.5 μ (FPM2.5)	17.0800 TONS	BACT-PSD
				50.002	Boiler	Particulate matter, fugitive	22.7700 TONS	
				50.002	Boiler	Particulate matter, total < 10 μ (TPM10)	22.7700 TONS	
				50.002	Boiler	Process Notes:		
				50.002	Boiler	Volatile Organic Compounds (VOC)	14.0000 TONS	BACT-PSD
				50.002	Heater	Carbon Monoxide	50.0000 PPM	BACT-PSD
				50.002	Heater	Nitrogen Oxides (NOx)	0.0360 LB/MMBTU	BACT-PSD
				50.002	Heater	Particulate matter, total (TPM)	0.8100 TON	BACT-PSD
				50.002	Heater	Particulate matter, total < 10 μ (TPM10)	0.8100 TON	BACT-PSD
				50.002	Heater	Particulate matter, total < 2.5 μ (TPM2.5)	0.8100 TON	BACT-PSD
				50.002	Heater	Process Notes:		
				50.002	Heater	Volatile Organic Compounds (VOC)	0.5900 TON	BACT-PSD
				50.002	Heater	Carbon Monoxide	50.0000 PPM	BACT-PSD
				50.002	Heater	Nitrogen Oxides (NOx)	0.0360 LB/MMBTU	BACT-PSD
				50.002	Heater	Particulate matter, total (TPM)	0.8100 TON	BACT-PSD
				50.002	Heater	Particulate matter, total < 10 μ (TPM10)	0.8100 TON	BACT-PSD
				50.002	Heater	Particulate matter, total < 2.5 μ (TPM2.5)	0.8100 TON	BACT-PSD
				50.002	Heater	Process Notes:		
				50.002	Heater	Volatile Organic Compounds (VOC)	0.5900 TON	BACT-PSD
				50.002	5 Heaters	Carbon Monoxide	50.0000 PPM	BACT-PSD
				50.002	5 Heaters	Nitrogen Oxides (NOx)	0.0360 LB/MMBTU	BACT-PSD
				50.002	5 Heaters	Particulate matter, total (TPM)	3.3800 TON	BACT-PSD
				50.002	5 Heaters	Particulate matter, total < 10 μ (TPM10)	2.3800 TON	BACT-PSD
				50.002	5 Heaters	Particulate matter, total < 2.5 μ (TPM2.5)	3.3800 TON	BACT-PSD
				50.002	5 Heaters	Process Notes:		
				50.002	5 Heaters	Volatile Organic Compounds (VOC)	2.4400 TON	BACT-PSD
				50.002	5 Heaters	Carbon Monoxide	50.0000 PPM	BACT-PSD
				50.002	5 Heaters	Nitrogen Oxides (NOx)	0.0360 LB/MMBTU	BACT-PSD
				50.002	5 Heaters	Particulate matter, total (TPM)	3.3800 TON	BACT-PSD
				50.002	5 Heaters	Particulate matter, total < 10 μ (TPM10)	2.3800 TON	BACT-PSD
				50.002	5 Heaters	Particulate matter, total < 2.5 μ (TPM2.5)	3.3800 TON	BACT-PSD
				50.002	5 Heaters	Process Notes:		
				50.002	5 Heaters	Volatile Organic Compounds (VOC)	2.4400 TON	BACT-PSD
				50.002	Heater	Carbon Monoxide	0.9500 TON	BACT-PSD
				50.002	Heater	Particulate matter, total (TPM)	0.2200 TON	BACT-PSD
				50.002	Heater	Particulate matter, total < 10 μ (TPM10)	0.2200 TON	BACT-PSD
				50.002	Heater	Particulate matter, total < 2.5 μ (TPM2.5)	0.2200 TON	BACT-PSD
				50.002	Heater	Volatile Organic Compounds (VOC)	0.1600 TON	BACT-PSD
				50.002	Heater	Carbon Monoxide	0.9500 TON	BACT-PSD
				50.002	Heater	Particulate matter, total (TPM)	0.2200 TON	BACT-PSD
				50.002	Heater	Particulate matter, total < 10 μ (TPM10)	0.2200 TON	BACT-PSD
				50.002	Heater	Particulate matter, total < 2.5 μ (TPM2.5)	0.2200 TON	BACT-PSD
				50.002	Heater	Volatile Organic Compounds (VOC)	0.1600 TON	BACT-PSD
				50.002	3 Fixed roof tanks	Process Notes:	Methanol Storage, Capacity = 80,000 gallon	

RBLC Search Results: 50.002, 50.003

RBLC ID	PERMIT	PERMIT ISSUANC	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				50.002	3 Fixed roof tanks	Volatile Organic Compounds (VOC)	1.6500 TON	BACT-PSD
				50.002	3 Fixed roof tanks	Process Notes:	Methanol Storage, Capacity = 80,000 gallon	
				50.002	3 Fixed roof tanks	Volatile Organic Compounds (VOC)	1.6500 TON	BACT-PSD
				50.002	Railcar and Truck loading	Process Notes:	Content: methanol	
				50.002	Railcar and Truck loading	Volatile Organic Compounds (VOC)	1.3800 TON	BACT-PSD
				50.002	Railcar and Truck loading	Process Notes:	Content: methanol	
				50.002	Railcar and Truck loading	Volatile Organic Compounds (VOC)	1.3800 TON	BACT-PSD
				50.002	Gasoline Storage	Process Notes:	462,000 gallon capacity	
				50.002	Gasoline Storage	Volatile Organic Compounds (VOC)	3.1900 TON	BACT-PSD
				50.002	Gasoline Storage	Process Notes:	462,000 gallon capacity	
				50.002	Gasoline Storage	Volatile Organic Compounds (VOC)	3.1900 TON	BACT-PSD
				50.002	Gasoline Storage	Process Notes:	capacity: 231,00 gallons	
				50.002	Gasoline Storage	Volatile Organic Compounds (VOC)	2.7300 TON	BACT-PSD
				50.002	Gasoline Storage	Process Notes:	capacity: 231,00 gallons	
				50.002	Gasoline Storage	Volatile Organic Compounds (VOC)	2.7300 TON	BACT-PSD
				50.002	Gasoline Storage	Process Notes:	Capacity = 231,000 gallons	
				50.002	Gasoline Storage	Process Notes:	Capacity = 231,000 gallons	
				50.002	Organic Material Storage	Process Notes:	2 Tanks, each with capacities of 3087 gallons of methanol and water	
				50.002	Organic Material Storage	Volatile Organic Compounds (VOC)	0.2400 TON	BACT-PSD
				50.002	Organic Material Storage	Process Notes:	2 Tanks, each with capacities of 3087 gallons of methanol and water	
				50.002	Organic Material Storage	Volatile Organic Compounds (VOC)	0.2400 TON	BACT-PSD
				50.002	Organic Material Storage	Process Notes:	2 tanks with 3087 gallon capacity each, storing methanol and water	
				50.002	Organic Material Storage	Volatile Organic Compounds (VOC)	1.0800 TONS/YR	BACT-PSD
				50.002	Organic Material Storage	Process Notes:	2 tanks with 3087 gallon capacity each, storing methanol and water	
				50.002	Organic Material Storage	Volatile Organic Compounds (VOC)	1.0800 TONS/YR	BACT-PSD
				50.002	Railcar and truck loading	Process Notes:	Railcar and truck loading of gasoline	
				50.002	Railcar and truck loading	Volatile Organic Compounds (VOC)	4.4700 TPY	BACT-PSD
				50.002	Railcar and truck loading	Process Notes:	Railcar and truck loading of gasoline	
				50.002	Railcar and truck loading	Volatile Organic Compounds (VOC)	4.4700 TPY	BACT-PSD
				50.002	Fugitive emissions in Gas to Gasoline Plant	Process Notes:	Fugitive emissions	
				50.002	Fugitive emissions in Gas to Gasoline Plant	Volatile Organic Compounds (VOC)	25.5800 TPY	BACT-PSD
				50.002	Fugitive emissions in Gas to Gasoline Plant	Process Notes:	Fugitive emissions	
				50.002	Fugitive emissions in Gas to Gasoline Plant	Volatile Organic Compounds (VOC)	25.5800 TPY	BACT-PSD
				50.002	cooling tower	Particulate matter, total (TPM)	0.0010 % DRIFT	BACT-PSD
				50.002	cooling tower	Process Notes:		
				50.002	cooling tower	Volatile Organic Compounds (VOC)	0.0800 PPMW	BACT-PSD
				50.002	cooling tower	Particulate matter, total (TPM)	0.0010 % DRIFT	BACT-PSD
				50.002	cooling tower	Process Notes:		
				50.002	cooling tower	Volatile Organic Compounds (VOC)	0.0800 PPMW	BACT-PSD
				50.002	Catalyst Regeneration	Carbon Monoxide	70.7300 TPY	BACT-PSD
				50.002	Catalyst Regeneration	Particulate matter, total (TPM)	0.0100 TPY	BACT-PSD
				50.002	Catalyst Regeneration	Particulate matter, total < 10 µ (TPM10)	0.0100 TPY	BACT-PSD
				50.002	Catalyst Regeneration	Particulate matter, total < 2.5 µ (TPM2.5)	0.0100 TPY	BACT-PSD
				50.002	Catalyst Regeneration	Process Notes:	Limiting catalyst regeneration events to 1612 hrs per year	
				50.002	Catalyst Regeneration	Carbon Monoxide	70.7300 TPY	BACT-PSD
				50.002	Catalyst Regeneration	Particulate matter, total (TPM)	0.0100 TPY	BACT-PSD
				50.002	Catalyst Regeneration	Particulate matter, total < 10 µ (TPM10)	0.0100 TPY	BACT-PSD
				50.002	Catalyst Regeneration	Particulate matter, total < 2.5 µ (TPM2.5)	0.0100 TPY	BACT-PSD
				50.002	Catalyst Regeneration	Process Notes:	Limiting catalyst regeneration events to 1612 hrs per year	
				50.002	Wastewater processing and handling	Process Notes:		
				50.002	Wastewater processing and handling	Volatile Organic Compounds (VOC)	23.4400 TPY	BACT-PSD
				50.002	Wastewater processing and handling	Process Notes:		
				50.002	Wastewater processing and handling	Volatile Organic Compounds (VOC)	23.4400 TPY	BACT-PSD

RBLC Search Results: 50.002, 50.003

RBLC ID	PERMIT	PERMIT ISSUANC	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
TX-0658	107530 AND PSDTX1338	05/16/2014	OCCIDENTAL CHEMICAL CORPORATION INGLESIDE CHEMICAL PLANT	50.002	Ethylene Unit	Carbon Monoxide	0 50	BACT-PSD
				50.002	Ethylene Unit	Nitrogen Oxides (NOx)	0.0150 LB/MMBTU	BACT-PSD
				50.002	Ethylene Unit	Particulate matter, total < 10 µ (TPM10)	0.0005 % OF TOTAL PM	BACT-PSD
				50.002	Ethylene Unit	Particulate matter, total < 2.5 µ (TPM2.5)	99.9995 % CONTROL EFFICIENCY	BACT-PSD
				50.002	Ethylene Unit	Process Notes:		
				50.002	Ethylene Unit	Sulfur Dioxide (SO2)	15.0000 PPMW SULFUR CONTENT	BACT-PSD
				50.002	Ethylene Unit	Volatile Organic Compounds (VOC)	99.9000 % CONTROL EFFICIENCY	BACT-PSD
				50.002	Ethylene Unit	Carbon Monoxide	0 50	BACT-PSD
				50.002	Ethylene Unit	Nitrogen Oxides (NOx)	0.0150 LB/MMBTU	BACT-PSD
				50.002	Ethylene Unit	Particulate matter, total < 10 µ (TPM10)	0.0005 % OF TOTAL PM	BACT-PSD
				50.002	Ethylene Unit	Particulate matter, total < 2.5 µ (TPM2.5)	99.9995 % CONTROL EFFICIENCY	BACT-PSD
				50.002	Ethylene Unit	Process Notes:		
				50.002	Ethylene Unit	Sulfur Dioxide (SO2)	15.0000 PPMW SULFUR CONTENT	BACT-PSD
				50.002	Ethylene Unit	Volatile Organic Compounds (VOC)	99.9000 % CONTROL EFFICIENCY	BACT-PSD
MS-0092	0040-00055	05/08/2014	EMBERCLEAR GTL MS LLC EMBERCLEAR GTL MS	50.002	Steam Methane Reformer	Carbon Dioxide	0.2300 T/T OF H2	BACT-PSD
				50.002	Steam Methane Reformer	Carbon Monoxide	5.0000 PPMV @ 3% O2	BACT-PSD
				50.002	Steam Methane Reformer	Particulate matter, filterable < 2.5 µ (FPM2.5)	1.7500 LB/H	BACT-PSD
				50.002	Steam Methane Reformer	Particulate matter, total (TPM)	1.8800 LB/H	BACT-PSD
				50.002	Steam Methane Reformer	Particulate matter, total < 10 µ (TPM10)	1.8800 LB/H	BACT-PSD
				50.002	Steam Methane Reformer	Process Notes:	Steam Methane Reformer, equipped with low NOx burners, SCR, and CO oxidation catalyst	
				50.002	Steam Methane Reformer	Volatile Organic Compounds (VOC)	5.0000 PPMV @ 3% O2	BACT-PSD
				50.002	Steam Methane Reformer	Carbon Dioxide	0.2300 T/T OF H2	BACT-PSD
				50.002	Steam Methane Reformer	Carbon Monoxide	5.0000 PPMV @ 3% O2	BACT-PSD
				50.002	Steam Methane Reformer	Particulate matter, filterable < 2.5 µ (FPM2.5)	1.7500 LB/H	BACT-PSD
				50.002	Steam Methane Reformer	Particulate matter, total (TPM)	1.8800 LB/H	BACT-PSD
				50.002	Steam Methane Reformer	Particulate matter, total < 10 µ (TPM10)	1.8800 LB/H	BACT-PSD
				50.002	Steam Methane Reformer	Process Notes:	Steam Methane Reformer, equipped with low NOx burners, SCR, and CO oxidation catalyst	
				50.002	Steam Methane Reformer	Volatile Organic Compounds (VOC)	5.0000 PPMV @ 3% O2	BACT-PSD
				50.002	Catalyst Decoking	Carbon Monoxide	44.7400 LB/H	BACT-PSD
				50.002	Catalyst Decoking	Process Notes:		
				50.002	Catalyst Decoking	Carbon Monoxide	44.7400 LB/H	BACT-PSD
				50.002	Catalyst Decoking	Process Notes:		
				50.002	Decarbonator	Carbon Monoxide	30.9100 LB/H	BACT-PSD
				50.002	Decarbonator	Process Notes:	Decarbonator for removing CO/CO2 from process condensate	
				50.002	Decarbonator	Carbon Monoxide	30.9100 LB/H	BACT-PSD
				50.002	Decarbonator	Process Notes:	Decarbonator for removing CO/CO2 from process condensate	
				50.002	Process fugitives	Process Notes:		
				50.002	Process fugitives	Volatile Organic Compounds (VOC)	0	BACT-PSD
				50.002	Process fugitives	Process Notes:		
				50.002	Process fugitives	Volatile Organic Compounds (VOC)	0	BACT-PSD
CO-0068	12WE2024	01/13/2014	DCP MIDSTREAM, LP LUCERNE GAS PROCESSING PLANT	50.002	Amine Unit	Carbon Dioxide Equivalent (CO2e)	154337.0000 TON CO2E	BACT-PSD
				50.002	Amine Unit	Process Notes:	One (1) methyldiethanolamine (MDEA) natural gas sweetening system for acid gas removal with a design capacity of 230 MMscf per day. This emissions unit is equipped with electric amine recirculation pumps with a total limited capacity of 945 gallons per minute of lean amine.	
				50.002	Amine Unit	Carbon Dioxide Equivalent (CO2e)	154337.0000 TON CO2E	BACT-PSD
				50.002	Amine Unit	Process Notes:	One (1) methyldiethanolamine (MDEA) natural gas sweetening system for acid gas removal with a design capacity of 230 MMscf per day. This emissions unit is equipped with electric amine recirculation pumps with a total limited capacity of 945 gallons per minute of lean amine.	
				50.002	Triethylene Glycol Dehydration Unit	Carbon Dioxide Equivalent (CO2e)	5320.0000 TON CO2E	BACT-PSD
				50.002	Triethylene Glycol Dehydration Unit	Process Notes:	triethylene glycol (TEG) dehydrator unit with a design capacity of 230 MMscf/day. This emissions unit is equipped with two (2) electric glycol pumps with a limited total combined capacity of 40 gallons per minute. This system includes a BTEX condenser, reboiler, still vent, and a flash tank.	

RBLC Search Results: 50.002, 50.003

RBLC ID	PERMIT	PERMIT ISSUANC	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				50.002	Triethylene Glycol Dehydration Unit	Carbon Dioxide Equivalent (CO2e)	5320.0000 TON CO2E	BACT-PSD
				50.002	Triethylene Glycol Dehydration Unit	Process Notes:	triethylene glycol (TEG) dehydrator unit with a design capacity of 230 MMscf/day. This emissions unit is equipped with two (2) electric glycol pumps with a limited total combined capacity of 40 gallons per minute. This system includes a BTEX condenser, reboiler, still vent, and a flash tank.	
				50.002	Fugitive emissions from leaking components	Carbon Dioxide Equivalent (CO2e)	200.0000 TON CO2E	N/A
				50.002	Fugitive emissions from leaking components	Process Notes:	Fugitive emission component leaks from a natural gas processing plant associated with the expansion project.	
				50.002	Fugitive emissions from leaking components	Carbon Dioxide Equivalent (CO2e)	200.0000 TON CO2E	N/A
				50.002	Fugitive emissions from leaking components	Process Notes:	Fugitive emission component leaks from a natural gas processing plant associated with the expansion project.	
TX-0711	103626, N164, PSDTX1296	09/16/2013	CELANESE LTD CELANESE CLEAR LAKE PLANT	50.002	Reformer	Ammonia (NH3)	10.0000 PPMV	BACT-PSD
				50.002	Reformer	Carbon Monoxide	200.0000 PPMV	BACT-PSD
				50.002	Reformer	Nitrogen Oxides (NOx)	0.0250 LB/MMBTU	BACT-PSD
				50.002	Reformer	Process Notes:	The reformer will be equipped with low-NOx burners ad a selective catalytic reduction (SCR) unit	
				50.002	Reformer	Ammonia (NH3)	10.0000 PPMV	BACT-PSD
				50.002	Reformer	Carbon Monoxide	200.0000 PPMV	BACT-PSD
				50.002	Reformer	Nitrogen Oxides (NOx)	0.0250 LB/MMBTU	BACT-PSD
				50.002	Reformer	Process Notes:	The reformer will be equipped with low-NOx burners ad a selective catalytic reduction (SCR) unit	
CO-0067	12WE1492	06/04/2013	KERR-MCGEE GATHERING LANCASTER PLANT	50.002	Four Amine units	Carbon Dioxide Equivalent (CO2e)	0	BACT-PSD
				50.002	Four Amine units	Process Notes:	The proposed Cryogenics Plant will include four amine units (A-1, A-2, A-3, and A-4), each design rated to process 150 MMscf per day of natural gas. A primary purpose of the amine units is to remove CO2 from the natural gas.	
				50.002	Four Amine units	Carbon Dioxide Equivalent (CO2e)	0	BACT-PSD
				50.002	Four Amine units	Process Notes:	The proposed Cryogenics Plant will include four amine units (A-1, A-2, A-3, and A-4), each design rated to process 150 MMscf per day of natural gas. A primary purpose of the amine units is to remove CO2 from the natural gas.	
				50.002	Fugitive emissions from leaking components	Carbon Dioxide Equivalent (CO2e)	0	BACT-PSD
				50.002	Fugitive emissions from leaking components	Process Notes:		
				50.002	Fugitive emissions from leaking components	Carbon Dioxide Equivalent (CO2e)	0	BACT-PSD
				50.002	Fugitive emissions from leaking components	Process Notes:		
LA-0271	PSD-LA-771	05/24/2013	CROSSTEX PROCESSING SERVICES, LLC PLAQUEMINE NGL FRACTIONATION PLANT	50.002	Fugitive Emissions (FUG-01)	Carbon Dioxide Equivalent (CO2e)	0	BACT-PSD
				50.002	Fugitive Emissions (FUG-01)	Process Notes:		
				50.002	Fugitive Emissions (FUG-01)	Carbon Dioxide Equivalent (CO2e)	0	BACT-PSD
				50.002	Fugitive Emissions (FUG-01)	Process Notes:		
OK-0153	2012-1393-C PSD	03/01/2013	SEMGAS LP ROSE VALLEY PLANT	50.002	AMINE UNITS - STILL VENT	Carbon Dioxide Equivalent (CO2e)	8116.0000 TPY	BACT-PSD
				50.002	AMINE UNITS - STILL VENT	Process Notes:	2 X 20,000 BBL/D UNITS. THE AMINE UNITS TREAT NATURAL GAS LIQUIDS.	
				50.002	AMINE UNITS - STILL VENT	Volatile Organic Compounds (VOC)	5.5900 TPY	BACT-PSD
				50.002	AMINE UNITS - STILL VENT	Carbon Dioxide Equivalent (CO2e)	8116.0000 TPY	BACT-PSD
				50.002	AMINE UNITS - STILL VENT	Process Notes:	2 X 20,000 BBL/D UNITS. THE AMINE UNITS TREAT NATURAL GAS LIQUIDS.	
				50.002	AMINE UNITS - STILL VENT	Volatile Organic Compounds (VOC)	5.5900 TPY	BACT-PSD
				50.002	AMINE UNITS - FLASH TANK	Process Notes:	2 X 20,000 BBL/D UNITS. THE AMINE UNITS TREAT NATURAL GAS LIQUIDS.	
				50.002	AMINE UNITS - FLASH TANK	Volatile Organic Compounds (VOC)	1.8000 TPY	BACT-PSD

RBLC Search Results: 50.002, 50.003

RBLC ID	PERMIT	PERMIT ISSUANC	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				50.002	AMINE UNITS - FLASH TANK	Process Notes:	2 X 20,000 BBL/D UNITS. THE AMINE UNITS TREAT NATURAL GAS LIQUIDS.	
				50.002	AMINE UNITS - FLASH TANK	Volatile Organic Compounds (VOC)	1.8000 TPY	BACT-PSD
TX-0617	PSDTX1266	09/27/2012	SANDRIDGE MIDSTREAM INC GREY RANCH TREATING PLANT/COMPRESSOR STATION	50.002	Gas Treatment System	Carbon Monoxide	832.0000 LB/H	BACT-PSD
				50.002	Gas Treatment System	Process Notes:	Field gas composed of CO2 (65-75%), methane (25-35%), and trace impurities (less than 1%) is compressed and then passes through a Selexol system to absorb CO2 and H2S from the gas stream. The waste stream from the Selexol system is either vented to the atmosphere or through the thermal oxidizers.	
				50.002	Gas Treatment System	Carbon Monoxide	832.0000 LB/H	BACT-PSD
				50.002	Gas Treatment System	Process Notes:	Field gas composed of CO2 (65-75%), methane (25-35%), and trace impurities (less than 1%) is compressed and then passes through a Selexol system to absorb CO2 and H2S from the gas stream. The waste stream from the Selexol system is either vented to the atmosphere or through the thermal oxidizers.	
OK-0148	2012-1026-C PSD	09/12/2012	MARKWEST BUFFALO CREEK GAS CO LLC BUFFALO CREEK PROCESSING PLANT	50.002	Fugitive Equipment Leaks (Natural Gas Plant)	Carbon Dioxide Equivalent (CO2e)	0	BACT-PSD
				50.002	Fugitive Equipment Leaks (Natural Gas Plant)	Process Notes:	Comply with baseline NSPS, Subpart OOOO.	
				50.002	Fugitive Equipment Leaks (Natural Gas Plant)	Volatile Organic Compounds (VOC)	0	BACT-PSD
				50.002	Fugitive Equipment Leaks (Natural Gas Plant)	Carbon Dioxide Equivalent (CO2e)	0	BACT-PSD
				50.002	Fugitive Equipment Leaks (Natural Gas Plant)	Process Notes:	Comply with baseline NSPS, Subpart OOOO.	
				50.002	Fugitive Equipment Leaks (Natural Gas Plant)	Volatile Organic Compounds (VOC)	0	BACT-PSD
				50.002	Blowdowns and Venting (Natural Gas Plant)	Carbon Dioxide Equivalent (CO2e)	0	BACT-PSD
				50.002	Blowdowns and Venting (Natural Gas Plant)	Process Notes:	Startup/Shutdown.	
				50.002	Blowdowns and Venting (Natural Gas Plant)	Volatile Organic Compounds (VOC)	0	BACT-PSD
				50.002	Blowdowns and Venting (Natural Gas Plant)	Carbon Dioxide Equivalent (CO2e)	0	BACT-PSD
				50.002	Blowdowns and Venting (Natural Gas Plant)	Process Notes:	Startup/Shutdown.	
				50.002	Blowdowns and Venting (Natural Gas Plant)	Volatile Organic Compounds (VOC)	0	BACT-PSD
OK-0142	2006-303-C(M-3)PSD	01/17/2012	ATLAS PIPELINE MIDCONTINENT WESTOK, LLC WAYNOKA NATURAL GAS PROCESSING PLANT	50.002	Natural Gas Processing Plants	Methane	0	BACT-PSD
				50.002	Natural Gas Processing Plants	Process Notes:	Fugitive Equipment Leaks	
				50.002	Natural Gas Processing Plants	Methane	0	BACT-PSD
				50.002	Natural Gas Processing Plants	Process Notes:	Fugitive Equipment Leaks	
TX-0562	9604A/PSD-TX-653M1	07/09/2010	CITGO REFINING AND CHEMICALS COMPANY LP CORPUS CHRISTI EAST PLANT	50.002	No. 2 FCCU	Carbon Monoxide	500.0000 PPMVD	BACT-PSD
				50.002	No. 2 FCCU	Nitrogen Oxides (NOx)	180.0000 PPMVD	BACT-PSD
				50.002	No. 2 FCCU	Particulate matter, total (TPM)	2.0000 LB/1000 LB COKE BURN	OTHER CASE-BY-CASE
				50.002	No. 2 FCCU	Process Notes:	Hydrotreated, unhydrotreated and/or purchased gas oil is processed in the No. 2 FCCU to catalytically cract into lighter components.	
				50.002	No. 2 FCCU	Sulfur Dioxide (SO2)	25.0000 PPMVD	BACT-PSD
				50.002	No. 2 FCCU	Sulfuric Acid (mist, vapors, etc)	1.0000 LB/1000 LB COKE BURN	OTHER CASE-BY-CASE
				50.002	No. 2 FCCU	Volatile Organic Compounds (VOC)	10.0000 PPMVD	BACT-PSD
				50.002	No. 2 FCCU	Carbon Monoxide	500.0000 PPMVD	BACT-PSD
				50.002	No. 2 FCCU	Nitrogen Oxides (NOx)	180.0000 PPMVD	BACT-PSD
				50.002	No. 2 FCCU	Particulate matter, total (TPM)	2.0000 LB/1000 LB COKE BURN	OTHER CASE-BY-CASE
				50.002	No. 2 FCCU	Process Notes:	Hydrotreated, unhydrotreated and/or purchased gas oil is processed in the No. 2 FCCU to catalytically cract into lighter components.	
				50.002	No. 2 FCCU	Sulfur Dioxide (SO2)	25.0000 PPMVD	BACT-PSD
				50.002	No. 2 FCCU	Sulfuric Acid (mist, vapors, etc)	1.0000 LB/1000 LB COKE BURN	OTHER CASE-BY-CASE
				50.002	No. 2 FCCU	Volatile Organic Compounds (VOC)	10.0000 PPMVD	BACT-PSD

RBLC Search Results: 50.002, 50.003

RBLC ID	PERMIT	PERMIT ISSUANC	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
TX-0847	6825A, N65, PSDTX49M1, GHGPSDT	09/16/2018	PREMCOR REFINING GROUP VALERO PORT ARTHUR REFINERY	50.002	Cooling Towers/Heat Exchange System	Particulate matter, total < 10 µ (TPM10)	0.0010 %	BACT-PSD
				50.002	Cooling Towers/Heat Exchange System	Particulate matter, total < 2.5 µ (TPM2.5)	0.0010 %	BACT-PSD
				50.002	Cooling Towers/Heat Exchange System	Process Notes:		
				50.002	Cooling Towers/Heat Exchange System	Volatile Organic Compounds (VOC)	0.0800 PPMW	BACT-PSD
				50.002	Cooling Towers/Heat Exchange System	Particulate matter, total < 10 µ (TPM10)	0.0010 %	BACT-PSD
				50.002	Cooling Towers/Heat Exchange System	Particulate matter, total < 2.5 µ (TPM2.5)	0.0010 %	BACT-PSD
				50.002	Cooling Towers/Heat Exchange System	Process Notes:		
				50.002	Cooling Towers/Heat Exchange System	Volatile Organic Compounds (VOC)	0.0800 PPMW	BACT-PSD
CO-0068	12WE2024	01/13/2014	DCP MIDSTREAM, LP LUCERNE GAS PROCESSING PLANT	50.002	Triethylene Glycol Dehydration Unit	Carbon Dioxide Equivalent (CO2e)	5320.0000 TON CO2E	BACT-PSD
				50.002	Triethylene Glycol Dehydration Unit	Process Notes:	triethylene glycol (TEG) dehydrator unit with a design capacity of 230 MMscf/day. This emissions unit is equipped with two (2) electric glycol pumps with a limited total combined capacity of 40 gallons per minute. This system includes a BTEX condenser, reboiler, still vent, and a flash tank.	
				50.002	Triethylene Glycol Dehydration Unit	Carbon Dioxide Equivalent (CO2e)	5320.0000 TON CO2E	BACT-PSD
				50.002	Triethylene Glycol Dehydration Unit	Process Notes:	triethylene glycol (TEG) dehydrator unit with a design capacity of 230 MMscf/day. This emissions unit is equipped with two (2) electric glycol pumps with a limited total combined capacity of 40 gallons per minute. This system includes a BTEX condenser, reboiler, still vent, and a flash tank.	
OK-0148	2012-1026-C PSD	09/12/2012	MARKWEST BUFFALO CREEK GAS CO LLC BUFFALO CREEK PROCESSING PLANT	50.002	Fugitive Equipment Leaks (Natural Gas Plant)	Carbon Dioxide Equivalent (CO2e)	0	BACT-PSD
				50.002	Fugitive Equipment Leaks (Natural Gas Plant)	Process Notes:	Comply with baseline NSPS, Subpart OOOO.	
				50.002	Fugitive Equipment Leaks (Natural Gas Plant)	Volatile Organic Compounds (VOC)	0	BACT-PSD
				50.002	Fugitive Equipment Leaks (Natural Gas Plant)	Carbon Dioxide Equivalent (CO2e)	0	BACT-PSD
				50.002	Fugitive Equipment Leaks (Natural Gas Plant)	Process Notes:	Comply with baseline NSPS, Subpart OOOO.	
				50.002	Fugitive Equipment Leaks (Natural Gas Plant)	Volatile Organic Compounds (VOC)	0	BACT-PSD
LA-0141	PSD-LA-614 (M-2)	01/24/2002	DUKE ENERGY FIELD SERVICES - MINDEN DUKE ENERGY FIELD SERVICES - MINDEN	50.002	Y-GRADE TRUCK LOADING AND UNLOADING	Process Notes:	EMISSION POINT 16-81D	
				50.002	Y-GRADE TRUCK LOADING AND UNLOADING	Volatile Organic Compounds (VOC)	3.6500 LB/H	Other Case-by-Case
				50.002	AMINE VENT	Process Notes:	EMISSION POINT 1-98	
				50.002	AMINE VENT	Volatile Organic Compounds (VOC)	3.6800 LB/H	Other Case-by-Case
AK-0047	0073-AC023	07/13/2001	BP EXPLORATION (ALASKA) INC. MILNE POINT PRODUCTION FACILITY	50.002	VENTS	Process Notes:	UNITS CATEGORIZED AS VENTS AND INCLUDED IN THIS ENTRY INCLUDE: OIL RESERVE TANKS; VENT HEADER (FLOTATION CELLS, COMPRESSOR VENTS, TEG REBOILER, DRAIN PURGE, VENT PURGE GAS, BACKWASH CLARIFIER, PRODUCED WATER SURGE TANK, TANK T- 5853, AND SAND SLURRY TANK); OTHER TANKS (T-2001, T-6102A, T-6102B).	
				50.002	VENTS	Volatile Organic Compounds (VOC)	0	Other Case-by-Case
MI-0341	420-97A	01/11/2001	ANR PIPELINE COMPANY - REED CITY ANR PIPELINE COMPANY - REED CITY	50.002	GLYCOL REGENERATION, REBOILER STILL VENT	Benzene	1.0000 T/YR	Other Case-by-Case
				50.002	GLYCOL REGENERATION, REBOILER STILL VENT	Process Notes:	regeneration of glycol solution.	

RBLC Search Results: 50.002, 50.003

RBLC ID	PERMIT	PERMIT ISSUANCE	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				50.002	GLYCOL REGENERATION, REBOILER STILL VENT	Volatile Organic Compounds (VOC)	90.0000 LB/D	Other Case-by-Case
WY-0056	CT-1946	07/25/2000	LOUISIANA LAND & EXPLORATION CO. - LOST CABIN GAS LA LAND & EXPLORATION CO. - LOST CABIN GAS PLANT	50.002	CLAUS/ SCOT SULFUR RECOVERY UNITS, TRAIN 3	Carbon Monoxide	330.0000 LB/H	BACT-PSD
				50.002	CLAUS/ SCOT SULFUR RECOVERY UNITS, TRAIN 3	Hydrogen Sulfide	2.2000 LB/H	BACT-PSD
				50.002	CLAUS/ SCOT SULFUR RECOVERY UNITS, TRAIN 3	Nitrogen Oxides (NOx)	13.5000 LB/H	BACT-PSD
				50.002	CLAUS/ SCOT SULFUR RECOVERY UNITS, TRAIN 3	Process Notes:	TAIL GAS INCINERATOR BURNS TAIL GAS FROM SHELL CLAUS OFF GAS TREATING (SCOT) UNIT. SULFUR RECOVERY OF TRAIN III CLAUS/ SCOT UNITS TO BE NO LESS THAN 99.8%. CEMS TO BE USED.	
				50.002	CLAUS/ SCOT SULFUR RECOVERY UNITS, TRAIN 3	Sulfur Dioxide (SO2)	312.0000 LB/H	BACT-PSD
				50.002	CO2 PRODUCT VENT, TRAIN III	Carbonyl Sulfide	360.0000 LB/H	BACT-PSD
				50.002	CO2 PRODUCT VENT, TRAIN III	Hydrogen Sulfide	2.2000 LB/H	BACT-PSD
				50.002	CO2 PRODUCT VENT, TRAIN III	Process Notes:	INCINERATION OF CARBONYL SULFIDE AND H2S IN STEAM NOT FEASIBLE DUE TO HIGH CO2 CONTENT OF STEAM.	
TX-0312	PSD-TX-920	05/13/1999	WESTERN GAS RESOURCES INC MITCHELL TREATING FACILITY	50.002	FACILITY FUGITIVE EMISSIONS, F1	Hydrogen Sulfide	0.1500 LB/H	Other Case-by-Case
				50.002	FACILITY FUGITIVE EMISSIONS, F1	Process Notes:		
				50.002	FACILITY FUGITIVE EMISSIONS, F1	Volatile Organic Compounds (VOC)	0.1100 LB/H	BACT-PSD
				50.002	SELEXOL STORAGE TANK, TANK 1	Process Notes:		
				50.002	SELEXOL STORAGE TANK, TANK 1	Volatile Organic Compounds (VOC)	0.0100 LB/H	BACT-PSD
				50.002	SULFURIC ACID TANK, TANK 2	Process Notes:		
				50.002	SULFURIC ACID TANK, TANK 2	Sulfuric Acid (mist, vapors, etc)	0.0100 LB/H	Other Case-by-Case
				50.002	(7) TANKS, TANK3-6,-10,14&15	Process Notes:	(2) CORROSION INHIBITO TANKS (TANK 3 & 4), (3) ENGINE COOLANT TANKS (TANK 5, 6 & 14), (2) ENGINE LUBE OIL TANKS (TANK 10 & 15)	
				50.002	(7) TANKS, TANK3-6,-10,14&15	Volatile Organic Compounds (VOC)	0.0100 LB/H	BACT-PSD
TX-0300	PSD-TX-795M1	10/13/1998	MOBIL EXPLORATION & PRODUCING US INC SALT CREEK GAS PLANT	50.002	GLYCOL REBOILER	Carbon Monoxide	0.1400 LB/H	Other Case-by-Case
				50.002	GLYCOL REBOILER	Nitrogen Oxides (NOx)	0.5500 LB/H	Other Case-by-Case
				50.002	GLYCOL REBOILER	Particulate matter, filterable < 10 µ (FPM10)	0.0200 LB/H	Other Case-by-Case
				50.002	GLYCOL REBOILER	Process Notes:		
				50.002	GLYCOL REBOILER	Sulfur Dioxide (SO2)	0.0100 LB/H	Other Case-by-Case
				50.002	GLYCOL REBOILER	Volatile Organic Compounds (VOC)	0.0100 LB/H	Other Case-by-Case
				50.002	GLYCOL STILL VENT	Benzene	0.3400 LB/H	Other Case-by-Case
				50.002	GLYCOL STILL VENT	Process Notes:		
				50.002	GLYCOL STILL VENT	Volatile Organic Compounds (VOC)	9.4200 LB/H	Other Case-by-Case
				50.002	FUGITIVES, GLFUG	Hydrogen Sulfide	0.0400 LB/H	Other Case-by-Case
				50.002	FUGITIVES, GLFUG	Process Notes:		
				50.002	FUGITIVES, GLFUG	Volatile Organic Compounds (VOC)	9.0800 LB/H	BACT-PSD
				50.002	FUGITIVES, O2FUG	Hydrogen Sulfide	1.2700 LB/H	Other Case-by-Case
				50.002	FUGITIVES, O2FUG	Process Notes:		
				50.002	FUGITIVES, O2FUG	Volatile Organic Compounds (VOC)	9.3300 LB/H	BACT-PSD
NM-0035	PSD-NM-1199-M-Z	07/24/1998	WILLIAMS FIELD SERVICES CO. WILLIAMS FIELD SERVICES CO.	50.002	GLYCOL DEHYDRATORS	Process Notes:		
				50.002	GLYCOL DEHYDRATORS	Volatile Organic Compounds (VOC)	5.6000 T/YR	BACT-PSD
NM-0034	1035-M5	06/10/1998	WILLIAMS FIELD SERVICES CO. WILLIAMS FIELD SERVICES CO.	50.002	NATURAL GAS COMPRESSOR STATION	Carbon Monoxide	2.6500 G/B-HP-H	BACT-PSD
				50.002	NATURAL GAS COMPRESSOR STATION	Nitrogen Dioxide (NO2)	1.5000 G/B-HP-H	BACT-PSD
				50.002	NATURAL GAS COMPRESSOR STATION	Process Notes:		
				50.002	NATURAL GAS COMPRESSOR STATION	Volatile Organic Compounds (VOC)	1.0000 G/B-HP-H	BACT-PSD
NM-0036	1031 M-4	06/10/1998	WILLIAMS FIELD SERVICES CO. WILLIAMS FIELD SERVICES CO.	50.002	GLYCOL DEHYDRATORS	Process Notes:		
				50.002	GLYCOL DEHYDRATORS	Volatile Organic Compounds (VOC)	1.4200 LB/H	BACT-PSD
NM-0038	PSD-NM-340-M5	05/22/1998	WILLIAMS FIELD SERVICES WILLIAMS FIELD SERVICES	50.002	IC ENGINE, NATURAL GAS	Carbon Monoxide	2.6500 G/B-HP-H	BACT-PSD

RBLC Search Results: 50.002, 50.003

RBLC ID	PERMIT	PERMIT ISSUANC	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				50.002	IC ENGINE, NATURAL GAS	Nitrogen Dioxide (NO2)	1.5000 G/B-HP-H	BACT-PSD
				50.002	IC ENGINE, NATURAL GAS	Process Notes:	GLYCOL DEHYDRATOR	
				50.002	IC ENGINE, NATURAL GAS	Volatile Organic Compounds (VOC)	0	BACT-PSD
				50.002	IC ENGINE, NATURAL GAS	Volatile Organic Compounds (VOC)	1.0000 G/B-HP-H	BACT-PSD
NM-0032	PSD-NM-1228-M-2	04/25/1998	WILLIAMS FIELD SERVICES CO. WILLIAMS FIELD SERVICES CO.	50.002	GLYCOL DEHYDRATORS	Process Notes:		
				50.002	GLYCOL DEHYDRATORS	Volatile Organic Compounds (VOC)	7.6620 T/Y	BACT-PSD
MI-0342	448-97	04/06/1998	CONSUMERS ENERGY COMPANY - RAY STATION CONSUMERS ENERGY COMPANY - RAY STATION	50.002	GLYCOL REGENERATION (2)	Process Notes:	Throughput is natural gas throughput. Circulation rate for each unit is 19.1 gpm. Reboiler fuel rate 1.4 mmbtu/h, each.	
				50.002	GLYCOL REGENERATION (2)	Volatile Organic Compounds (VOC)	71.0000 LB/D	Other Case-by-Case
NM-0033	PSD-1028-M-4	04/06/1998	WILLIAMS FIELD SERVICES CO. WILLIAMS FIELD SERVICES CO.	50.002	DEHYDRATORS, GLYCOL	Process Notes:	ADDING THREE NEW TEG 20 MMSCFD DEHYDRATORS FOR A TOTAL OF 8 DEHYDRATORS.	
				50.002	DEHYDRATORS, GLYCOL	Volatile Organic Compounds (VOC)	5.6000 T/YR	BACT-PSD
MI-0350	446-97	01/06/1998	MI CONSOLIDATED GAS - COLUMBUS COMPRESSOR STATION MI CONSOLIDATED GAS - COLUMBUS COMPRESSOR STATION	50.002	GLYCOL GAS DEHYDRATION, REGENERATOR STILL	Benzene	1.0440 LB/H	Other Case-by-Case
				50.002	GLYCOL GAS DEHYDRATION, REGENERATOR STILL	Hazardous Air Pollutants (HAP)	94.0000 % REDUCTION	Other Case-by-Case
				50.002	GLYCOL GAS DEHYDRATION, REGENERATOR STILL	Process Notes:	This unit processes pipeline natural gas as it is retrieved from underground storage. The process uses triethylene glycol. BTEX emissions are reduced by 94.2% by operating the regenerator still condenser at 80 degrees F.	
				50.002	GLYCOL GAS DEHYDRATION, REGENERATOR STILL	Volatile Organic Compounds (VOC)	4.4500 LB/H	Other Case-by-Case
CA-0735	9047	02/04/1997	PACIFIC OFFSHORE PIPELINE COMPANY (POPCO) PACIFIC OFFSHORE PIPELINE COMPANY (POPCO)	50.002	OIL FIELD NATURAL GAS (SOUR) PROCESSING PLANT	Process Notes:	PROCESS GAS HAS HYDROGEN SULFIDE CONTENT OF 2.67%	
				50.002	OIL FIELD NATURAL GAS (SOUR) PROCESSING PLANT	Sulfur Oxides (SOx)	100.0000 PPMV RESID. H2S	LAER
NM-0027	PSD-NM-1327-M-2	09/03/1996	WILLIAMS FIELD SERVICE/AZTEC CONTROL DELIVERY PT. WILLIAMS FIELD SERVICE/AZTEC CONTROL DELIVERY PT.	50.002	NATURAL GAS COMPRESSOR STATION	Carbon Monoxide	8.0800 LB/H	BACT-PSD
				50.002	NATURAL GAS COMPRESSOR STATION	Nitrogen Oxides (NOx)	4.5700 LB/H	BACT-PSD
				50.002	NATURAL GAS COMPRESSOR STATION	Process Notes:	12 WAUKESHA 7042 GL ENGINES. ALL LIMITS ARE PER UNIT, 12 EACH.	
				50.002	NATURAL GAS COMPRESSOR STATION	Volatile Organic Compounds (VOC)	3.0500 LB/H	BACT-PSD
CA-0718	S-1547-75-11	12/04/1995	CALRESOURCES LLC CALRESOURCES LLC	50.002	STEAM GENERATOR	Process Notes:		
				50.002	STEAM GENERATOR	Sulfur Dioxide (SO2)	30.0000 PPM	Other Case-by-Case
CA-0640	A/C NO. C-1659-82	12/07/1994	UNOCAL/FRESNO COUNTY GAS PRODUCTION UNOCAL/FRESNO COUNTY GAS PRODUCTION	50.002	GLYCOL REBOILER	Process Notes:	COMPLIANCE TO BE VERIFIED WITH SOURCE TESTS AND RECORDKEEPING	
				50.002	GLYCOL REBOILER	Volatile Organic Compounds (VOC)	3.0000 LBM/DAY	Other Case-by-Case
AL-0171	503-0014-X004	09/29/1993	MOBIL OIL EXPLORATION & PRODUCING SOUTHEAST, INC. MOBIL OIL EXPLORATION & PRODUCING SOUTHEAST, INC.	50.002	NATURAL GAS SWEETNING, DEHYRATION	Carbon Monoxide	32.7000 LB/H	BACT-PSD
				50.002	NATURAL GAS SWEETNING, DEHYRATION	Nitrogen Dioxide (NO2)	0.1500 LB/MMBTU	BACT-PSD
				50.002	NATURAL GAS SWEETNING, DEHYRATION	Process Notes:	SULFUR RECOVERY FOLLOWED BY THERMAL OXIDIZATION. THROUGHPUT ALSO INCLUDES 280 TON SULFUR/DAY	
				50.002	NATURAL GAS SWEETNING, DEHYRATION	Sulfur Dioxide (SO2)	511.0000 LB/H	BACT-PSD
				50.002	NATURAL GAS SWEETNING, DEHYRATION	Volatile Organic Compounds (VOC)	3.3000 LB/H	BACT-PSD
AL-0175	503-0014-X010	09/29/1993	MOBIL OIL EXPLORATION & PRODUCING SOUTHEAST, INC. MOBIL OIL EXPLORATION & PRODUCING SOUTHEAST, INC.	50.002	SULFUR RECOVERY UNIT	Carbon Dioxide	12.8000 LB/H VOCS	BACT-PSD
				50.002	SULFUR RECOVERY UNIT	Nitrogen Dioxide (NO2)	0.1500 LB/MMBTU	BACT-PSD
				50.002	SULFUR RECOVERY UNIT	Process Notes:		
				50.002	SULFUR RECOVERY UNIT	Sulfur Dioxide (SO2)	105.5000 LB/H	BACT-PSD

RBLC Search Results: 50.002, 50.003

RBLC ID	PERMIT	PERMIT ISSUANCE	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				50.002	SULFUR RECOVERY UNIT	Volatile Organic Compounds (VOC)	5.8000 LB/H	BACT-PSD
ND-0010	085010	08/24/1992	WESTERN GAS RESOURCES,INC. WESTERN GAS RESOURCES,INC.	50.002	AMINE TREATING AND FLARE	Process Notes:		
				50.002	AMINE TREATING AND FLARE	Sulfur Dioxide (SO2)	116.0000 LB/H	BACT-PSD
NM-0020	PSD-NM-753-M-2	11/15/1991	LIQUID ENERGY CORP. LIQUID ENERGY CORP.	50.002	AMINE UNIT	Process Notes:		
				50.002	AMINE UNIT	Sulfur Dioxide (SO2)	246.5000 T/YR	BACT-PSD
OK-0026	90-121-0	09/05/1991	SWIFT ENERGY SWIFT ENERGY	50.002	DEHYDRATION UNIT	Benzene	1.3000 T/YR	Other Case-by-Case
				50.002	DEHYDRATION UNIT	Process Notes:		
NM-0018	PSD-NM-753	05/16/1990	LIQUID ENERGY CORP. LIQUID ENERGY CORP.	50.002	AMINE UNIT	Process Notes:		
				50.002	AMINE UNIT	Sulfur Dioxide (SO2)	123.3000 T/YR	BACT-PSD
AL-0174	503-0014-X007	04/16/1990	MOBIL OIL EXPLORATION & PRODUCING SOUTHEAST, INC. MOBIL OIL EXPLORATION & PRODUCING SOUTHEAST, INC.	50.002	NATURAL GAS SWEETENING AND DEHYDRATION	Process Notes:		
				50.002	NATURAL GAS SWEETENING AND DEHYDRATION	Sulfur Dioxide (SO2)	0.2500 GRAIN/100 SCF	BACT-PSD
CA-0379	6708	05/02/1988	UNOCAL CA- OPERATOR/PPP CO- OWNER UNOCAL CA-OPERATOR/PPP CO- OWNER	50.002	HEATER TREATER -UNIT 1	Carbon Monoxide	0.8400 LB/H	Other Case-by-Case
				50.002	HEATER TREATER -UNIT 1	Nitrogen Oxides (NOx)	0.4200 LB/H	Other Case-by-Case
				50.002	HEATER TREATER -UNIT 1	Process Notes:		
				50.002	HEATER TREATER -UNIT 1	Volatile Organic Compounds (VOC)	0.0100 LB/H	Other Case-by-Case
				50.002	HEATER TREATER -UNIT 2	Carbon Monoxide	0.8100 LB/H	Other Case-by-Case
				50.002	HEATER TREATER -UNIT 2	Nitrogen Oxides (NOx)	0.4200 LB/H	Other Case-by-Case
				50.002	HEATER TREATER -UNIT 2	Process Notes:		
				50.002	HEATER TREATER -UNIT 2	Volatile Organic Compounds (VOC)	0.0050 LB/H	Other Case-by-Case
				50.002	HEATER TREATER -UNIT 3	Nitrogen Oxides (NOx)	0.3500 LB/H	Other Case-by-Case
				50.002	HEATER TREATER -UNIT 3	Process Notes:		
				50.002	REBOILER, GLYCOL	Carbon Monoxide	5.0000 PPM AT 3% O2	Other Case-by-Case
				50.002	REBOILER, GLYCOL	Nitrogen Oxides (NOx)	0.0200 LB/H	Other Case-by-Case
				50.002	REBOILER, GLYCOL	Process Notes:		
				50.002	REBOILER, GLYCOL	Volatile Organic Compounds (VOC)	0 NEGLIGIBLE	Other Case-by-Case
NM-0016	PSD-NM-623-M-1	02/04/1988	CITATION OIL & GAS CORP. CITATION OIL & GAS CORP.	50.002	REBOILER, AMINE, GAS FIRED	Nitrogen Oxides (NOx)	0 NONE	Other Case-by-Case
				50.002	REBOILER, AMINE, GAS FIRED	Process Notes:		
				50.002	DEHYDRATOR, GAS FIRED	Nitrogen Oxides (NOx)	0 NONE	Other Case-by-Case
				50.002	DEHYDRATOR, GAS FIRED	Process Notes:		
NM-0015	PSD-NM-615-M-1	10/13/1987	EAST DAGGER DRAW JOINT VENTURE EAST DAGGER DRAW JOINT VENTURE	50.002	REGENERATOR, AMINE, GAS FIRED	Nitrogen Oxides (NOx)	0 NONE	Other Case-by-Case
				50.002	REGENERATOR, AMINE, GAS FIRED	Process Notes:		
				50.002	REGENERATOR, GLYCOL, GAS FIRED	Nitrogen Oxides (NOx)	0 NONE	Other Case-by-Case
				50.002	REGENERATOR, GLYCOL, GAS FIRED	Process Notes:		
TX-0199	17451	10/17/1986	TRISTAR ENERGY, INC. TRISTAR ENERGY, INC.	50.002	VENT STACK	Carbon Dioxide	60477.4000 T/YR	BACT-PSD
				50.002	VENT STACK	Process Notes:		
TX-0196	16842	09/11/1986	AMOCO PRODUCTION CO. AMOCO PRODUCTION CO.	50.002	REGENERATOR, 3	Carbon Monoxide	0.2300 T/YR	BACT-PSD
				50.002	REGENERATOR, 3	Nitrogen Oxides (NOx)	2.1700 T/YR	BACT-PSD
				50.002	REGENERATOR, 3	Process Notes:		
				50.002	OXIDIZER-LO-CAT.	Hydrogen Sulfide	0.8600 T/YR	BACT-PSD
				50.002	OXIDIZER-LO-CAT.	Process Notes:		
				50.002	OXIDIZER-LO-CAT.	Volatile Organic Compounds (VOC)	2.9100 T/YR	BACT-PSD
TX-0191	17178	06/03/1986	MITCHELL ENERGY CORP. MITCHELL ENERGY CORP.	50.002	STILL VENT, AMINE	Carbon Dioxide	2897.0000 T/YR	BACT-PSD
				50.002	STILL VENT, AMINE	Process Notes:		
				50.002	STILL VENT, AMINE	Volatile Organic Compounds (VOC)	1.2000 T/YR	BACT-PSD
CA-0068.A	2023010 A	04/10/1985	WARREN PETROLEUM CO. WARREN PETROLEUM CO.	50.002	CO2 REMOVAL SYSTEM	Process Notes:		
				50.002	CO2 REMOVAL SYSTEM	Volatile Organic Compounds (VOC)	0	BACT-PSD
WY-0014	CT-544	05/22/1984	EXXON CO., USA EXXON CO., USA	50.002	SELEXOL VENT #1	Carbonyl Sulfide	602.5000 LB/H	BACT-PSD
				50.002	SELEXOL VENT #1	Hydrogen Sulfide	29.5000 LB/H	BACT-PSD
				50.002	SELEXOL VENT #1	Process Notes:		
				50.002	SELEXOL VENT #1	Volatile Organic Compounds (VOC)	464.8000 LB/H	BACT-PSD
				50.002	SELEXOL VENT #2	Carbonyl Sulfide	87.9000 LB/H	BACT-PSD
				50.002	SELEXOL VENT #2	Hydrogen Sulfide	4.3000 LB/H	BACT-PSD
				50.002	SELEXOL VENT #2	Process Notes:		
				50.002	SELEXOL VENT #2	Volatile Organic Compounds (VOC)	67.8000 LB/H	BACT-PSD
WY-0002	CT-479	01/20/1983	MARATHON OIL CO. MARATHON OIL CO.	50.002	STILL, GLYCOL	Nitrogen Oxides (NOx)	0.2000 LB/MMBTU	Other Case-by-Case
				50.002	STILL, GLYCOL	Process Notes:		

RBLC Search Results: 50.002, 50.003

RBLC ID	PERMIT	PERMIT ISSUANC	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
TX-0096	8628	04/29/1982	DELHI GAS PIPELINE CORP. DELHI GAS PIPELINE CORP.	50.002	PLANT, GAS PROCESSING, SULFUR	Process Notes:		
				50.002	PLANT, GAS PROCESSING, SULFUR	Sulfur Dioxide (SO2)	92.9000 T/YR	BACT-PSD
				50.002	PLANT, GAS PROCESSING	Hydrogen Sulfide	1.3000 T/YR	BACT-PSD
				50.002	PLANT, GAS PROCESSING	Process Notes:		
TX-0031	NONE	02/09/1982	EXXON CO., USA EXXON CO., USA	50.002	REGENERATOR, DIETHENOLAMINE	Process Notes:		
				50.002	REGENERATOR, DIETHENOLAMINE	Sulfur Dioxide (SO2)	0.0004 LB/MMBTU	BACT-PSD
				50.002	RECONCENTRATOR, GLYCOL	Process Notes:		
				50.002	RECONCENTRATOR, GLYCOL	Sulfur Dioxide (SO2)	0.0003 LB/MMBTU	BACT-PSD
MS-0004	NONE	08/03/1981	REPUBLIC REFINING CO. REPUBLIC REFINING CO.	50.002	BOILER, SULFUR RECOVERY, NAT GAS PROCESSING, 2	Process Notes:		
				50.002	BOILER, SULFUR RECOVERY, NAT GAS PROCESSING, 2	Sulfur Dioxide (SO2)	0.0030 LB/H EA	BACT-PSD
TX-0094	2724	01/14/1981	SID RICHARDSON CARBON & GASOLINE CO. SID RICHARDSON CARBON & GASOLINE CO.	50.002	PLANT, NAT GAS TREATING	Process Notes:		
				50.002	PLANT, NAT GAS TREATING	Sulfur Dioxide (SO2)	816.0000 T/YR	BACT-PSD
WY-0011	CT-58	08/25/1976	CIG CIG	50.002	GASIFICATION UNIT STACK, THERMAL	Process Notes:		
				50.002	GASIFICATION UNIT STACK, THERMAL	Sulfur Dioxide (SO2)	0.1350 % V AT 0% O2, DRY BA	BACT-PSD
*PA-0326	04-00740C	02/18/2021	SHELL POLYMERS MONACA SITE	50.003	Ethane Cracking Furnaces Decoking Mode	Process Notes:	The proposed changes allow two furnaces to be decoked simultaneously, no more than two furnaces to emit NOx at greater than 6.20 pounds per hour, and reduce allowable NOx emission from the furnaces during hot steam standby, feed in, feed out, and decoking from 9.30 lb/hr to 6.20 lb/hr.	
				50.003	Ethane Cracking Furnaces Decoking Mode	Nitrogen Oxides (NOx)	6.2 LB/HR	LAER
*TX-0914	160874, PSDTX1584, GHGPSDTX205	01/21/2021	BORGER REFINERY	50.003	CCR Regeneration Vent	Process Notes:		
				50.003	CCR Regeneration Vent	Nitrogen Oxides (NOx)	Route emissions from the initial catalyst purging and coke-burn off steps to a flare or control device; minimization of coke formation and good combustion practices	BACT-PSD
				50.003	CCR Regeneration Vent	Volatile Organic Compounds (VOC)	Route emissions from the initial catalyst purging and coke-burn off steps to a flare or control device; minimization of coke formation and good combustion practices	BACT-PSD
				50.003	CCR Regeneration Vent	Carbon Monoxide	Route emissions from the initial catalyst purging and coke-burn off steps to a flare or control device; minimization of coke formation and good combustion practices	BACT-PSD
				50.003	CCR Regeneration Vent	Carbon Monoxide	Route emissions from the initial catalyst purging and coke-burn off steps to a flare or control device; minimization of coke formation and good combustion practices	BACT-PSD
				50.003	CCR Regeneration Vent	Sulfur Dioxide (SO2)	Route emissions from the initial catalyst purging and coke-burn off steps to a flare or control device; minimization of coke formation and good combustion practices	BACT-PSD
				50.003	CCR Regeneration Vent	Carbon Dioxide Equivalent (CO2e)	Route emissions from the initial catalyst purging and coke-burn off steps to a flare or control device; minimization of coke formation and good combustion practices	BACT-PSD
				50.003	CCR Regeneration Vent	Carbon Dioxide Equivalent (CO2e)	Route emissions from the initial catalyst purging and coke-burn off steps to a flare or control device; minimization of coke formation and good combustion practices	BACT-PSD
TX-0888	155952, PSDTX1556, GHGPSDTX192	04/23/2020	ORANGE POLYETHYLENE PLANT	50.003	Polyethylene Product	Process Notes:		
				50.003	Polyethylene Product	Volatile Organic Compounds (VOC)	THERMAL OXIDIZER OR MPGF CONTROL	BACT-PSD
*OK-0182	2017-1908-C(M-2)PSD	02/10/2020	TULSA REFINERY EAST	50.003	Fluid Catalytic Cracking Unit	Process Notes:	24000 BBL/DAY	
				50.003	Fluid Catalytic Cracking Unit	Nitrogen Oxides (NOx)	20 PPM 365-DAY @ 0% O2	BACT-PSD
				50.003	Fluid Catalytic Cracking Unit	Nitrogen Oxides (NOx)	40 PPM 7-DAY @ 0% O2	BACT-PSD
				50.003	Fluid Catalytic Cracking Unit	Carbon Monoxide	500 PPM	BACT-PSD
				50.003	Fluid Catalytic Cracking Unit	Particulate matter, filterable < 10 µ (FPM10)	1 LB PM/1000 LB COKE	BACT-PSD
				50.003	Fluid Catalytic Cracking Unit	Particulate matter, filterable < 2.5 µ (FPM2.5)	1 LB PM/1000 LB COKE	BACT-PSD
TX-0874	PSDTX1062M3, AND GHGPSDTX156	02/04/2020	PORT ARTHUR REFINERY	50.003	Continuous Catalytic Reformer1 Vent	Process Notes:		
				50.003	Continuous Catalytic Reformer1 Vent	Nitrogen Oxides (NOx)	Good combustion practices will be used to reduce VOC including maintain proper air-to-fuel ratio, necessary residence time, temperature and turbulent.	BACT-PSD
				50.003	Continuous Catalytic Reformer1 Vent	Carbon Monoxide	Good combustion practices will be used to reduce VOC including maintain proper air-to-fuel ratio, necessary residence time, temperature and turbulent.	BACT-PSD
				50.003	Continuous Catalytic Reformer1 Vent	Particulate matter, total (TPM)	Monthly AVO or yearly leak inspection.	BACT-PSD

RBLC Search Results: 50.002, 50.003

RBLC ID	PERMIT	PERMIT ISSUANC	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				50.003	Continuous Catalytic Reformer1 Vent	Particulate matter, filterable < 10 µ (FPM10)	Monthly AVO or yearly leak inspection.	BACT-PSD
				50.003	Continuous Catalytic Reformer1 Vent	Particulate matter, filterable < 2.5 µ (FPM2.5)	Monthly AVO or yearly leak inspection.	BACT-PSD
TX-0847	6825A, N65, PSDTX49M1, GHGPSDT	09/16/2018	PREMCOR REFINING GROUP VALERO PORT ARTHUR REFINERY	50.003	COKER VENT			BACT-PSD
				50.003	COKER VENT	Hydrogen Sulfide	3.7500 LB/CYCLE	BACT-PSD
				50.003	COKER VENT	Particulate matter, filterable < 10 µ (FPM10)	1.5700 LB/CYCLE	BACT-PSD
				50.003	COKER VENT	Particulate matter, filterable < 2.5 µ (FPM2.5)	1.5700 LB/CYCLE	
				50.003	COKER VENT	Process Notes:	Depressurize coke drum to MACT CC specifications for an existing unit prior to opening to the atmosphere.	BACT-PSD
				50.003	COKER VENT	Volatile Organic Compounds (VOC)	55.0000 LB/CYCLE	BACT-PSD
				50.003	COKER VENT	Hydrogen Sulfide	3.7500 LB/CYCLE	BACT-PSD
				50.003	COKER VENT	Particulate matter, filterable < 10 µ (FPM10)	1.5700 LB/CYCLE	BACT-PSD
				50.003	COKER VENT	Particulate matter, filterable < 2.5 µ (FPM2.5)	1.5700 LB/CYCLE	
				50.003	COKER VENT	Process Notes:	Depressurize coke drum to MACT CC specifications for an existing unit prior to opening to the atmosphere.	BACT-PSD
TX-0841	PSDTX1328M2, N260, GHGPSDTX38M	07/01/2018	DOW CHEMICAL LHC-9	50.003	cracking furnaces [heaters]	Volatile Organic Compounds (VOC)	55.0000 LB/CYCLE	BACT-PSD
				50.003	cracking furnaces [heaters]	Carbon Dioxide Equivalent (CO2e)	0	LAER
				50.003	cracking furnaces [heaters]	Nitrogen Oxides (NOx)	0.0100 LB/MMBTU	BACT-PSD
				50.003	cracking furnaces [heaters]	Particulate matter, filterable (FPM)	0.8100 LB/MMSCF	BACT-PSD
				50.003	cracking furnaces [heaters]	Particulate matter, filterable < 10 µ (FPM10)	0.8100 LB/MMSCF	BACT-PSD
				50.003	cracking furnaces [heaters]	Particulate matter, filterable < 2.5 µ (FPM2.5)	0.8100 LB/MMSCF	
				50.003	cracking furnaces [heaters]	Process Notes:		BACT-PSD
				50.003	cracking furnaces [heaters]	Carbon Dioxide Equivalent (CO2e)	0	LAER
				50.003	cracking furnaces [heaters]	Nitrogen Oxides (NOx)	0.0100 LB/MMBTU	BACT-PSD
				50.003	cracking furnaces [heaters]	Particulate matter, filterable (FPM)	0.8100 LB/MMSCF	BACT-PSD
				50.003	cracking furnaces [heaters]	Particulate matter, filterable < 10 µ (FPM10)	0.8100 LB/MMSCF	BACT-PSD
				50.003	cracking furnaces [heaters]	Particulate matter, filterable < 2.5 µ (FPM2.5)	0.8100 LB/MMSCF	
LA-0326	PSD-LA-222(M-2)	11/07/2017	CITGO PETROLEUM CORPORATION LAKE CHARLES MANUFACTURING COMPLEX - REFORMER AREA	50.003	3(XXII)3 C-Reformer CCR Vent Gas	Process Notes:		BACT-PSD
				50.003	3(XXII)3 C-Reformer CCR Vent Gas	Nitrogen Oxides (NOx)	1.1200 LB/H	
				50.003	3(XXII)3 C-Reformer CCR Vent Gas	Process Notes:		BACT-PSD
				50.003	3(XXII)3 C-Reformer CCR Vent Gas	Nitrogen Oxides (NOx)	1.1200 LB/H	
LA-0312	PSD-LA-780(M-1)	06/30/2017	SOUTH LOUISIANA METHANOL LP ST. JAMES METHANOL PLANT	50.003	RV-13 - Reformer Vent (EQT0001)	Process Notes:		BACT-PSD
				50.003	RV-13 - Reformer Vent (EQT0001)	Ammonia (NH3)	0	BACT-PSD
				50.003	RV-13 - Reformer Vent (EQT0001)	Carbon Dioxide Equivalent (CO2e)	1.0500 TON CO2E/METRIC TON	BACT-PSD
				50.003	RV-13 - Reformer Vent (EQT0001)	Carbon Monoxide	11.6500 LB/HR	BACT-PSD
				50.003	RV-13 - Reformer Vent (EQT0001)	Nitrogen Oxides (NOx)	38.0900 LB/HR	BACT-PSD
				50.003	RV-13 - Reformer Vent (EQT0001)	Particulate matter, total < 10 µ (TPM10)	23.4600 LB/HR	BACT-PSD
				50.003	RV-13 - Reformer Vent (EQT0001)	Particulate matter, total < 2.5 µ (TPM2.5)	23.4600 LB/HR	
				50.003	RV-13 - Reformer Vent (EQT0001)	Process Notes:		BACT-PSD
				50.003	RV-13 - Reformer Vent (EQT0001)	Volatile Organic Compounds (VOC)	16.9700 LB/HR	BACT-PSD
				50.003	RV-13 - Reformer Vent (EQT0001)	Ammonia (NH3)	0	BACT-PSD
				50.003	RV-13 - Reformer Vent (EQT0001)	Carbon Dioxide Equivalent (CO2e)	1.0500 TON CO2E/METRIC TON	BACT-PSD
				50.003	RV-13 - Reformer Vent (EQT0001)	Carbon Monoxide	11.6500 LB/HR	BACT-PSD
				50.003	RV-13 - Reformer Vent (EQT0001)	Nitrogen Oxides (NOx)	38.0900 LB/HR	BACT-PSD
				50.003	RV-13 - Reformer Vent (EQT0001)	Particulate matter, total < 10 µ (TPM10)	23.4600 LB/HR	BACT-PSD
				50.003	RV-13 - Reformer Vent (EQT0001)	Particulate matter, total < 2.5 µ (TPM2.5)	23.4600 LB/HR	
				50.003	RV-13 - Reformer Vent (EQT0001)	Process Notes:		BACT-PSD
				50.003	RV-13-SUSD - Reformer Vent Startup/Shutdown (EQT0002)	Volatile Organic Compounds (VOC)	16.9700 LB/HR	BACT-PSD
				50.003	RV-13-SUSD - Reformer Vent Startup/Shutdown (EQT0002)	Carbon Dioxide Equivalent (CO2e)	3284.0000 TONS/YR	BACT-PSD
				50.003	RV-13-SUSD - Reformer Vent Startup/Shutdown (EQT0002)	Carbon Monoxide	0	BACT-PSD
				50.003	RV-13-SUSD - Reformer Vent Startup/Shutdown (EQT0002)	Nitrogen Oxides (NOx)	0	BACT-PSD
				50.003	RV-13-SUSD - Reformer Vent Startup/Shutdown (EQT0002)	Particulate matter, total < 10 µ (TPM10)	0	BACT-PSD
				50.003	RV-13-SUSD - Reformer Vent Startup/Shutdown (EQT0002)	Particulate matter, total < 2.5 µ (TPM2.5)	0	
				50.003	RV-13-SUSD - Reformer Vent Startup/Shutdown (EQT0002)	Process Notes:	5786 MM BTU/hr is the Max 1 hour in any 24 hour period; Operating hours limit: 114 hr/yr	BACT-PSD

RBLC Search Results: 50.002, 50.003

RBLC ID	PERMIT	PERMIT ISSUANC	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				50.003	RV-13-SUSD - Reformer Vent Startup/Shutdown (EQT0002)	Volatile Organic Compounds (VOC)	0	BACT-PSD
				50.003	RV-13-SUSD - Reformer Vent Startup/Shutdown (EQT0002)	Carbon Dioxide Equivalent (CO2e)	3284.0000 TONS/YR	BACT-PSD
				50.003	RV-13-SUSD - Reformer Vent Startup/Shutdown (EQT0002)	Carbon Monoxide	0	BACT-PSD
				50.003	RV-13-SUSD - Reformer Vent Startup/Shutdown (EQT0002)	Nitrogen Oxides (NOx)	0	BACT-PSD
				50.003	RV-13-SUSD - Reformer Vent Startup/Shutdown (EQT0002)	Particulate matter, total < 10 µ (TPM10)	0	BACT-PSD
				50.003	RV-13-SUSD - Reformer Vent Startup/Shutdown (EQT0002)	Particulate matter, total < 2.5 µ (TPM2.5)	0	
				50.003	RV-13-SUSD - Reformer Vent Startup/Shutdown (EQT0002)	Process Notes:	5786 MM BTU/hr is the Max 1 hour in any 24 hour period; Operating hours limit: 114 hr/yr	BACT-PSD
MN-0093	03700011- 101	01/13/2017	FLINT HILLS RESOURCES PINE BEND, LLC FLINT HILLS RESOURCES PINE BEND REFINERY	50.003	24H1 #4 Coker Unit Charge Heater (EQUI 1456)	Volatile Organic Compounds (VOC)	0	BACT-PSD
				50.003	24H1 #4 Coker Unit Charge Heater (EQUI 1456)	Carbon Dioxide Equivalent (CO2e)	168775.0000 TONS PER YEAR	BACT-PSD
				50.003	24H1 #4 Coker Unit Charge Heater (EQUI 1456)	Nitrogen Oxides (NOx)	0.0100 LB/MMBTU	BACT-PSD
				50.003	24H1 #4 Coker Unit Charge Heater (EQUI 1456)	Particulate matter, total < 10 µ (TPM10)	0.0075 LB/MMBTU	BACT-PSD
				50.003	24H1 #4 Coker Unit Charge Heater (EQUI 1456)	Particulate matter, total < 2.5 µ (TPM2.5)	0.0075 LB/MMBTU	
				50.003	24H1 #4 Coker Unit Charge Heater (EQUI 1456)	Process Notes:		BACT-PSD
				50.003	24H1 #4 Coker Unit Charge Heater (EQUI 1456)	Carbon Dioxide Equivalent (CO2e)	168775.0000 TONS PER YEAR	BACT-PSD
				50.003	24H1 #4 Coker Unit Charge Heater (EQUI 1456)	Nitrogen Oxides (NOx)	0.0100 LB/MMBTU	BACT-PSD
				50.003	24H1 #4 Coker Unit Charge Heater (EQUI 1456)	Particulate matter, total < 10 µ (TPM10)	0.0075 LB/MMBTU	BACT-PSD
				50.003	24H1 #4 Coker Unit Charge Heater (EQUI 1456)	Particulate matter, total < 2.5 µ (TPM2.5)	0.0075 LB/MMBTU	
				50.003	#4 Coker Drum System / EQUI24DRUMS (EQUI 1457)	Process Notes:		BACT-PSD
				50.003	#4 Coker Drum System / EQUI24DRUMS (EQUI 1457)	Carbon Dioxide Equivalent (CO2e)	0	BACT-PSD
				50.003	#4 Coker Drum System / EQUI24DRUMS (EQUI 1457)	Particulate matter, total < 10 µ (TPM10)	2.0000 PSIA	BACT-PSD
				50.003	#4 Coker Drum System / EQUI24DRUMS (EQUI 1457)	Particulate matter, total < 2.5 µ (TPM2.5)	2.0000 PSIG	
				50.003	#4 Coker Drum System / EQUI24DRUMS (EQUI 1457)	Process Notes:	Emissions activities within the new #4 Coker Drum System include coke drum venting, draining, drum opening and coke cutting, and the use and recovery of the coke drum quench water.	BACT-PSD
				50.003	#4 Coker Drum System / EQUI24DRUMS (EQUI 1457)	Carbon Dioxide Equivalent (CO2e)	0	BACT-PSD
				50.003	#4 Coker Drum System / EQUI24DRUMS (EQUI 1457)	Particulate matter, total < 10 µ (TPM10)	2.0000 PSIA	BACT-PSD
				50.003	#4 Coker Drum System / EQUI24DRUMS (EQUI 1457)	Particulate matter, total < 2.5 µ (TPM2.5)	2.0000 PSIG	
				50.003	No. 4 Hydrogen Plant Reformer - Refining Equipment (EQUI 471)	Process Notes:	Emissions activities within the new #4 Coker Drum System include coke drum venting, draining, drum opening and coke cutting, and the use and recovery of the coke drum quench water.	BACT-PSD
				50.003	No. 4 Hydrogen Plant Reformer - Refining Equipment (EQUI 471)	Carbon Dioxide Equivalent (CO2e)	771156.0000 TONS PER YEAR	BACT-PSD
				50.003	No. 4 Hydrogen Plant Reformer - Refining Equipment (EQUI 471)	Particulate matter, total < 10 µ (TPM10)	0.0075 LB/MMBTU	BACT-PSD
				50.003	No. 4 Hydrogen Plant Reformer - Refining Equipment (EQUI 471)	Particulate matter, total < 2.5 µ (TPM2.5)	0.0075 LB/MMBTU	
				50.003	No. 4 Hydrogen Plant Reformer - Refining Equipment (EQUI 471)	Process Notes:		BACT-PSD
				50.003	No. 4 Hydrogen Plant Reformer - Refining Equipment (EQUI 471)	Carbon Dioxide Equivalent (CO2e)	771156.0000 TONS PER YEAR	BACT-PSD
				50.003	No. 4 Hydrogen Plant Reformer - Refining Equipment (EQUI 471)	Particulate matter, total < 10 µ (TPM10)	0.0075 LB/MMBTU	BACT-PSD

RBLC Search Results: 50.002, 50.003

RBLC ID	PERMIT	PERMIT ISSUANC	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				50.003	No. 4 Hydrogen Plant Reformer - Refining Equipment (EQUI 471)	Particulate matter, total < 2.5 µ (TPM2.5)	0.0075 LB/MMBTU	
IL-0115	06050052	01/23/2015	PHILLIPS 66 COMPANY WOOD RIVER REFINERY	50.003	HYDROGEN PLANT 2 VENTS	Process Notes:		BACT-PSD
				50.003	HYDROGEN PLANT 2 VENTS	Carbon Dioxide Equivalent (CO2e)	350.0000 TONS/YEAR	
				50.003	HYDROGEN PLANT 2 VENTS	Process Notes:	During startup, shutdown, and malfunction, blowdown and high pressure stripper (HPS) vents at the Hydrogen Plant 2 discharge to the atmosphere. The streams are mainly steam but also contain VOM and CO2. During normal operation, these streams are recycled back to the process.	LAER
				50.003	HYDROGEN PLANT 2 VENTS	Volatile Organic Compounds (VOC)	0.1000 TONS/YEAR	BACT-PSD
				50.003	HYDROGEN PLANT 2 VENTS	Carbon Dioxide Equivalent (CO2e)	350.0000 TONS/YEAR	
				50.003	HYDROGEN PLANT 2 VENTS	Process Notes:	During startup, shutdown, and malfunction, blowdown and high pressure stripper (HPS) vents at the Hydrogen Plant 2 discharge to the atmosphere. The streams are mainly steam but also contain VOM and CO2. During normal operation, these streams are recycled back to the process.	LAER
				50.003	FRACTIONATION COLUMNS, V-3245 and V-3247	Volatile Organic Compounds (VOC)	0.1000 TONS/YEAR	
				50.003	FRACTIONATION COLUMNS, V-3245 and V-3247	Process Notes:	The existing Distilling Flare would be modified by installing additional piping to control emergency relief for two new columns, V-3245 and V-3247. Venting would occur during depressurization to ensure safe operation of process units.	LAER
				50.003	FRACTIONATION COLUMNS, V-3245 and V-3247	Volatile Organic Compounds (VOC)	0	
				50.003	FRACTIONATION COLUMNS, V-3245 and V-3247	Process Notes:	The existing Distilling Flare would be modified by installing additional piping to control emergency relief for two new columns, V-3245 and V-3247. Venting would occur during depressurization to ensure safe operation of process units.	LAER
TX-0697	107153, PSDTX1328	03/27/2014	THE DOW CHEMICAL COMPANY ETHYLENE PRODUCTION PLANT	50.003	Cracking Furnaces	Volatile Organic Compounds (VOC)	0	BACT-PSD
				50.003	Cracking Furnaces	Ammonia (NH3)	10.0000 PPMVD	BACT-PSD
				50.003	Cracking Furnaces	Carbon Monoxide	50.0000 PPMVD	BACT-PSD
				50.003	Cracking Furnaces	Nitrogen Oxides (NOx)	0.0150 LB/MMBTU	OTHER CASE-BY-CASE
				50.003	Cracking Furnaces	Particulate matter, filterable (FPM)	0.0042 LB/MMBTU	
				50.003	Cracking Furnaces	Process Notes:	There will be 8 approximately 600 MMBtu/hr steam cracking furnaces controlled with low NOx burners and selective catalytic reduction (SCR). The furnaces are designed to feed a single new back end process quench, separation and recycle system	BACT-PSD
				50.003	Cracking Furnaces	Ammonia (NH3)	10.0000 PPMVD	BACT-PSD
				50.003	Cracking Furnaces	Carbon Monoxide	50.0000 PPMVD	BACT-PSD
				50.003	Cracking Furnaces	Nitrogen Oxides (NOx)	0.0150 LB/MMBTU	OTHER CASE-BY-CASE
				50.003	Cracking Furnaces	Particulate matter, filterable (FPM)	0.0042 LB/MMBTU	
TX-0673	PSDTX324M14	01/22/2014	VALERO REFINING- TEXAS, L.P. BILL GREEHEY REFINERY	50.003	Petroleum Refinery	Process Notes:	There will be 8 approximately 600 MMBtu/hr steam cracking furnaces controlled with low NOx burners and selective catalytic reduction (SCR). The furnaces are designed to feed a single new back end process quench, separation and recycle system	BACT-PSD
				50.003	Petroleum Refinery	Carbon Monoxide	4861.4600 LB	BACT-PSD
				50.003	Petroleum Refinery	Nitrogen Oxides (NOx)	1470.2000 LB	BACT-PSD
				50.003	Petroleum Refinery	Particulate matter, filterable < 10 µ (FPM10)	269.0600 POUND	BACT-PSD
				50.003	Petroleum Refinery	Particulate matter, total < 2.5 µ (TPM2.5)	269.0600 POUND	
				50.003	Petroleum Refinery	Process Notes:	The Valero Bill Greehey Refinery - West Plant takes a heavy, sour oil feed and processes and refines it to a typical slate of refinery products. It consists of numerous units and supporting equipment.	BACT-PSD
				50.003	Petroleum Refinery	Sulfur Dioxide (SO2)	1540.6600 POUND	BACT-PSD
				50.003	Petroleum Refinery	Volatile Organic Compounds (VOC)	2769.5800 POUND	BACT-PSD
				50.003	Petroleum Refinery	Carbon Monoxide	4861.4600 LB	BACT-PSD

RBLC Search Results: 50.002, 50.003

RBLC ID	PERMIT	PERMIT ISSUANC	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				50.003	Petroleum Refinery	Nitrogen Oxides (NOx)	1470.2000 LB	BACT-PSD
				50.003	Petroleum Refinery	Particulate matter, filterable < 10 µ (FPM10)	269.0600 POUND	BACT-PSD
				50.003	Petroleum Refinery	Particulate matter, total < 2.5 µ (TPM2.5)	269.0600 POUND	
				50.003	Petroleum Refinery	Process Notes:	The Valero Bill Greehey Refinery - West Plant takes a heavy, sour oil feed and processes and refines it to a typical slate of refinery products. It consists of numerous units and supporting equipment.	BACT-PSD
				50.003	Petroleum Refinery	Sulfur Dioxide (SO2)	1540.6600 POUND	BACT-PSD
OK-0160	2007-026-C(M-5)PSD	01/07/2014	WYNNEWOOD REFINERY CO LLC WYNNEWOOD REFINERY CO	50.003	H2 Reformer	Volatile Organic Compounds (VOC)	2769.5800 POUND	N/A
				50.003	H2 Reformer	Carbon Dioxide Equivalent (CO2e)	120280.0000 LB CO2E	
				50.003	H2 Reformer	Process Notes:		N/A
				50.003	H2 Reformer	Carbon Dioxide Equivalent (CO2e)	120280.0000 LB CO2E	
OH-0362	P0114527	2013-12-23	LIMA REFINING COMPANY	50.003	Two Coker Drums & Distillation Column (P005)	Process Notes:		BACT-PSD
				50.003	Two Coker Drums & Distillation Column (P005)	Carbon Dioxide Equivalent (CO2e)	1533.0000 T/Y	
OH-0357	P0111667	09/20/2013	BP PRODUCTS, NORTH AMERICA INC. BP-HUSKY REFINING LLC	50.003	Crude Vacuum Furnace	Process Notes:	Delayed Coking process unit including two Coker Drums (PR164237/164238) and Distillation Column (PR164903), modification including installation of new Coke Pit and addition of Front End Loader Traffic to Load Coke Product into Railcars	N/A
				50.003	Crude Vacuum Furnace	Hydrogen Sulfide	0.1000 GR/DSCF	N/A
				50.003	Crude Vacuum Furnace	Nitrogen Oxides (NOx)	262.8000 T/YR	N/A
				50.003	Crude Vacuum Furnace	Particulate matter, filterable (FPM)	0.0200 LB/MMBTU	
				50.003	Crude Vacuum Furnace	Process Notes:	258 MMBtu/H at HHV basis. Furnace can only burn refinery fuel gas, natural gas, and/or liquid petroleum gas. Because they are designed to burn gas 1 subcategory fuels, only work practice standards from Table 3 of Part 63 Subpart DDDDD apply.	N/A
				50.003	Crude Vacuum Furnace	Sulfur Dioxide (SO2)	21.0200 T/YR	N/A
				50.003	Crude Vacuum Furnace	Visible Emissions (VE)	0	N/A
				50.003	Crude Vacuum Furnace	Hydrogen Sulfide	0.1000 GR/DSCF	N/A
				50.003	Crude Vacuum Furnace	Nitrogen Oxides (NOx)	262.8000 T/YR	N/A
				50.003	Crude Vacuum Furnace	Particulate matter, filterable (FPM)	0.0200 LB/MMBTU	
				50.003	Crude Vacuum Furnace	Process Notes:	258 MMBtu/H at HHV basis. Furnace can only burn refinery fuel gas, natural gas, and/or liquid petroleum gas. Because they are designed to burn gas 1 subcategory fuels, only work practice standards from Table 3 of Part 63 Subpart DDDDD apply.	N/A
				50.003	Crude Vacuum Furnace	Sulfur Dioxide (SO2)	21.0200 T/YR	N/A
				50.003	Refinery Process Heaters / Crude furnaces (2)	Visible Emissions (VE)	0	BACT-PSD
				50.003	Refinery Process Heaters / Crude furnaces (2)	Carbon Dioxide Equivalent (CO2e)	123562.0000 T/YR	N/A
				50.003	Refinery Process Heaters / Crude furnaces (2)	Carbon Monoxide	0.0600 LB/MMBTU	N/A
				50.003	Refinery Process Heaters / Crude furnaces (2)	Hydrogen Sulfide	60.0000 PPMV	N/A
				50.003	Refinery Process Heaters / Crude furnaces (2)	Nitrogen Oxides (NOx)	0.0400 LB/MMBTU	N/A
				50.003	Refinery Process Heaters / Crude furnaces (2)	Particulate matter, total < 10 µ (TPM10)	0.0075 LB/MMBTU	
				50.003	Refinery Process Heaters / Crude furnaces (2)	Process Notes:	Two furnaces/refinery process heaters fired with any combination of refinery fuel gas, natural gas, or liquid petroleum gas. Because they are designed to burn gas 1 subcategory fuels, only work practice standards from Table 3 of Part 63 Subpart DDDDD apply. Using continuous oxygen trim system to maintain optimum air to fuel ratio, with tune up every 5 years.	N/A
				50.003	Refinery Process Heaters / Crude furnaces (2)	Sulfur Dioxide (SO2)	10.5900 T/YR	N/A

RBLC Search Results: 50.002, 50.003

RBLC ID	PERMIT	PERMIT ISSUANC	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				50.003	Refinery Process Heaters / Crude furnaces (2)	Visible Emissions (VE)	0	N/A
				50.003	Refinery Process Heaters / Crude furnaces (2)	Volatile Organic Compounds (VOC)	0.0054 LB/MMBTU	BACT-PSD
				50.003	Refinery Process Heaters / Crude furnaces (2)	Carbon Dioxide Equivalent (CO2e)	123562.0000 T/YR	N/A
				50.003	Refinery Process Heaters / Crude furnaces (2)	Carbon Monoxide	0.0600 LB/MMBTU	N/A
				50.003	Refinery Process Heaters / Crude furnaces (2)	Hydrogen Sulfide	60.0000 PPMV	N/A
				50.003	Refinery Process Heaters / Crude furnaces (2)	Nitrogen Oxides (NOx)	0.0400 LB/MMBTU	N/A
				50.003	Refinery Process Heaters / Crude furnaces (2)	Particulate matter, total < 10 µ (TPM10)	0.0075 LB/MMBTU	
				50.003	Refinery Process Heaters / Crude furnaces (2)	Process Notes:	Two furnaces/refinery process heaters fired with any combination of refinery fuel gas, natural gas, or liquid petroleum gas. Because they are designed to burn gas 1 subcategory fuels, only work practice standards from Table 3 of Part 63 Subpart DDDDD apply. Using continuous oxygen trim system to maintain optimum air to fuel ratio, with tune up every 5 years.	N/A
				50.003	Refinery Process Heaters / Crude furnaces (2)	Sulfur Dioxide (SO2)	10.5900 T/YR	N/A
				50.003	Refinery Process Heaters / Crude furnaces (2)	Visible Emissions (VE)	0	N/A
				50.003	Coker 3 Furnace	Volatile Organic Compounds (VOC)	0.0054 LB/MMBTU	N/A
				50.003	Coker 3 Furnace	Carbon Monoxide	18.9400 LB/H	N/A
				50.003	Coker 3 Furnace	Hydrogen Sulfide	0.1000 GR/DSCF	N/A
				50.003	Coker 3 Furnace	Nitrogen Oxides (NOx)	14.9500 LB/H	N/A
				50.003	Coker 3 Furnace	Particulate matter, total < 10 µ (TPM10)	1.7100 LB/H	
				50.003	Coker 3 Furnace	Process Notes:	247 MMBtu/H at HHV basis. Using refinery fuel gas and/or natural gas.	N/A
				50.003	Coker 3 Furnace	Sulfur Dioxide (SO2)	4.6000 LB/H	N/A
				50.003	Coker 3 Furnace	Visible Emissions (VE)	0	N/A
				50.003	Coker 3 Furnace	Volatile Organic Compounds (VOC)	1.2400 LB/H	N/A
				50.003	Coker 3 Furnace	Carbon Monoxide	18.9400 LB/H	N/A
				50.003	Coker 3 Furnace	Hydrogen Sulfide	0.1000 GR/DSCF	N/A
				50.003	Coker 3 Furnace	Nitrogen Oxides (NOx)	14.9500 LB/H	N/A
				50.003	Coker 3 Furnace	Particulate matter, total < 10 µ (TPM10)	1.7100 LB/H	
				50.003	Coker 3 Furnace	Process Notes:	247 MMBtu/H at HHV basis. Using refinery fuel gas and/or natural gas.	N/A
				50.003	Coker 3 Furnace	Sulfur Dioxide (SO2)	4.6000 LB/H	N/A
				50.003	Coker 3 Furnace	Visible Emissions (VE)	0	N/A
				50.003	A-Diesel Hydrotreater Furnace	Volatile Organic Compounds (VOC)	1.2400 LB/H	N/A
				50.003	A-Diesel Hydrotreater Furnace	Carbon Monoxide	1.8800 LB/H	N/A
				50.003	A-Diesel Hydrotreater Furnace	Hydrogen Sulfide	0.1000 GR/DSCF	N/A
				50.003	A-Diesel Hydrotreater Furnace	Nitrogen Oxides (NOx)	1.6000 LB/H	N/A
				50.003	A-Diesel Hydrotreater Furnace	Particulate matter, total < 10 µ (TPM10)	0.1700 LB/H	
				50.003	A-Diesel Hydrotreater Furnace	Process Notes:	Can only burn refinery fuel gas, natural gas, and/or liquid petroleum gas. Because hydrotreater is designed to burn gas 1 subcategory fuels, only work practice standards from Table 3 of Part 63 Subpart DDDDD apply.	N/A
				50.003	A-Diesel Hydrotreater Furnace	Sulfur Dioxide (SO2)	0.6000 LB/H	N/A
				50.003	A-Diesel Hydrotreater Furnace	Visible Emissions (VE)	0	N/A
				50.003	A-Diesel Hydrotreater Furnace	Volatile Organic Compounds (VOC)	0.1200 LB/H	N/A
				50.003	A-Diesel Hydrotreater Furnace	Carbon Monoxide	1.8800 LB/H	N/A
				50.003	A-Diesel Hydrotreater Furnace	Hydrogen Sulfide	0.1000 GR/DSCF	N/A
				50.003	A-Diesel Hydrotreater Furnace	Nitrogen Oxides (NOx)	1.6000 LB/H	N/A
				50.003	A-Diesel Hydrotreater Furnace	Particulate matter, total < 10 µ (TPM10)	0.1700 LB/H	
				50.003	A-Diesel Hydrotreater Furnace	Process Notes:	Can only burn refinery fuel gas, natural gas, and/or liquid petroleum gas. Because hydrotreater is designed to burn gas 1 subcategory fuels, only work practice standards from Table 3 of Part 63 Subpart DDDDD apply.	N/A
				50.003	A-Diesel Hydrotreater Furnace	Sulfur Dioxide (SO2)	0.6000 LB/H	N/A
				50.003	A-Diesel Hydrotreater Furnace	Visible Emissions (VE)	0	N/A

RBLC Search Results: 50.002, 50.003

RBLC ID	PERMIT	PERMIT ISSUANC	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				50.003	Refinery Process Heater / Vacuum Furnace	Volatile Organic Compounds (VOC)	0.1200 LB/H	BACT-PSD
				50.003	Refinery Process Heater / Vacuum Furnace	Carbon Dioxide Equivalent (CO2e)	82375.0000 T/YR	N/A
				50.003	Refinery Process Heater / Vacuum Furnace	Carbon Monoxide	0.0600 LB/MMBTU	N/A
				50.003	Refinery Process Heater / Vacuum Furnace	Hydrogen Sulfide	60.0000 PPMV	N/A
				50.003	Refinery Process Heater / Vacuum Furnace	Nitrogen Oxides (NOx)	0.0400 LB/MMBTU	N/A
				50.003	Refinery Process Heater / Vacuum Furnace	Particulate matter, total < 10 µ (TPM10)	0.0075 LB/MMBTU	
				50.003	Refinery Process Heater / Vacuum Furnace	Process Notes:	Process heater fired with any combination of refinery fuel gas, natural gas, or liquid petroleum gas. Because they are designed to burn gas 1 subcategory fuels, only work practice standards from Table 3 of Part 63 Subpart DDDDD apply. Using continuous oxygen trim system to maintain optimum air to fuel ratio, with tune up every 5 years.	N/A
				50.003	Refinery Process Heater / Vacuum Furnace	Sulfur Dioxide (SO2)	7.0600 T/YR	N/A
				50.003	Refinery Process Heater / Vacuum Furnace	Visible Emissions (VE)	0	N/A
				50.003	Refinery Process Heater / Vacuum Furnace	Volatile Organic Compounds (VOC)	0.0054 LB/MMBTU	BACT-PSD
				50.003	Refinery Process Heater / Vacuum Furnace	Carbon Dioxide Equivalent (CO2e)	82375.0000 T/YR	N/A
				50.003	Refinery Process Heater / Vacuum Furnace	Carbon Monoxide	0.0600 LB/MMBTU	N/A
				50.003	Refinery Process Heater / Vacuum Furnace	Hydrogen Sulfide	60.0000 PPMV	N/A
				50.003	Refinery Process Heater / Vacuum Furnace	Nitrogen Oxides (NOx)	0.0400 LB/MMBTU	N/A
				50.003	Refinery Process Heater / Vacuum Furnace	Particulate matter, total < 10 µ (TPM10)	0.0075 LB/MMBTU	
				50.003	Refinery Process Heater / Vacuum Furnace	Process Notes:	Process heater fired with any combination of refinery fuel gas, natural gas, or liquid petroleum gas. Because they are designed to burn gas 1 subcategory fuels, only work practice standards from Table 3 of Part 63 Subpart DDDDD apply. Using continuous oxygen trim system to maintain optimum air to fuel ratio, with tune up every 5 years.	N/A
				50.003	Refinery Process Heater / Vacuum Furnace	Sulfur Dioxide (SO2)	7.0600 T/YR	N/A
				50.003	Refinery Process Heater / Vacuum Furnace	Visible Emissions (VE)	0	N/A
				50.003	Coker 3	Volatile Organic Compounds (VOC)	0.0054 LB/MMBTU	BACT-PSD
				50.003	Coker 3	Carbon Dioxide Equivalent (CO2e)	804.6200 T/YR	
				50.003	Coker 3	Process Notes:	DELAYED PETROLEUM COKER WITH: BUBBLE TOWER, BLOWDOWN SCRUBBING SYSTEM, COKER GAS TREATMENT PLANT, AND 2 COKE DRUMS.	N/A
				50.003	Coker 3	Volatile Organic Compounds (VOC)	9.3500 T/YR	BACT-PSD
				50.003	Coker 3	Carbon Dioxide Equivalent (CO2e)	804.6200 T/YR	
				50.003	Coker 3	Process Notes:	DELAYED PETROLEUM COKER WITH: BUBBLE TOWER, BLOWDOWN SCRUBBING SYSTEM, COKER GAS TREATMENT PLANT, AND 2 COKE DRUMS.	N/A
TX-0665	N158	06/12/2013	KINDER MORGAN CRUDE & CONDENSATE GALENA PARK TERMINAL CONDENSATE SPLITTER	50.003	Topping refinery	Volatile Organic Compounds (VOC)	9.3500 T/YR	
				50.003	Topping refinery	Process Notes:	Simple atmospheric distillation operation separates condensate into light naphtha, heavy naphtha, kerosene/distaillate, residual and Y-grade. Some overhead from the atmospheric tower is recycled for use as heater fuel.	LAER
				50.003	Topping refinery	Volatile Organic Compounds (VOC)	0	

RBLC Search Results: 50.002, 50.003

RBLC ID	PERMIT	PERMIT ISSUANC	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				50.003	Topping refinery	Process Notes:	Simple atmospheric distillation operation separates condensate into light naphtha, heavy naphtha, kerosene/distaillate, residual and Y-grade. Some overhead from the atmospheric tower is recycled for use as heater fuel.	LAER
TX-0614	8125, PSDTX1280, N144	10/23/2012	EQUISTAR CHEMICALS, LP METHANOL REFORMER	50.003	Methanol Reformer	Volatile Organic Compounds (VOC)	0	OTHER CASE-BY-CASE
				50.003	Methanol Reformer	Carbon Monoxide	50.0000 PPMV	LAER
				50.003	Methanol Reformer	Nitrogen Oxides (NOx)	0.0100 LB/MMBTU	
				50.003	Methanol Reformer	Process Notes:	Restart of Methanol Reformer	LAER
				50.003	Methanol Reformer	Volatile Organic Compounds (VOC)	38.1000 T/YR	OTHER CASE-BY-CASE
				50.003	Methanol Reformer	Carbon Monoxide	50.0000 PPMV	LAER
				50.003	Methanol Reformer	Nitrogen Oxides (NOx)	0.0100 LB/MMBTU	
				50.003	Methanol Reformer	Process Notes:	Restart of Methanol Reformer	LAER
TX-0616	36644?PSDTX903M5	07/16/2012	BASF FINA PETROCHEMICALS LIMITED PARTNERSHIP BASF FINA NAFTA REGION OLEFINS COMPLEX	50.003	Ethylene Cracking Furnace	Volatile Organic Compounds (VOC)	38.1000 T/YR	OTHER CASE-BY-CASE
				50.003	Ethylene Cracking Furnace	Carbon Monoxide	52349.1100 LB/H	OTHER CASE-BY-CASE
				50.003	Ethylene Cracking Furnace	Nitrogen Oxides (NOx)	9814.0000 LB/H	OTHER CASE-BY-CASE
				50.003	Ethylene Cracking Furnace	Particulate matter, total (TPM)	123.7000 LB/H	
				50.003	Ethylene Cracking Furnace	Process Notes:	ethane and naptha feed to the new ethylene cracking furnace	OTHER CASE-BY-CASE
				50.003	Ethylene Cracking Furnace	Volatile Organic Compounds (VOC)	73334.0000 LB/H	OTHER CASE-BY-CASE
				50.003	Ethylene Cracking Furnace	Carbon Monoxide	52349.1100 LB/H	OTHER CASE-BY-CASE
				50.003	Ethylene Cracking Furnace	Nitrogen Oxides (NOx)	9814.0000 LB/H	OTHER CASE-BY-CASE
				50.003	Ethylene Cracking Furnace	Particulate matter, total (TPM)	123.7000 LB/H	
				50.003	Ethylene Cracking Furnace	Process Notes:	ethane and naptha feed to the new ethylene cracking furnace	OTHER CASE-BY-CASE
LA-0261	PSD-LA-745(M-2)	04/26/2012	ALON REFINING KROTZ SPRINGS, INC. KROTZ SPRINGS REFINERY	50.003	Fluid Catalytic Cracking Unit (FCCU) (1-85, EQT 0071)	Volatile Organic Compounds (VOC)	73334.0000 LB/H	BACT-PSD
				50.003	Fluid Catalytic Cracking Unit (FCCU) (1-85, EQT 0071)	Nitrogen Oxides (NOx)	80.0000 PPMVD @ 0% O2	
				50.003	Fluid Catalytic Cracking Unit (FCCU) (1-85, EQT 0071)	Process Notes:		BACT-PSD
				50.003	Fluid Catalytic Cracking Unit (FCCU) (1-85, EQT 0071)	Sulfur Dioxide (SO2)	25.0000 PPMVD @ 0% O2	BACT-PSD
				50.003	Fluid Catalytic Cracking Unit (FCCU) (1-85, EQT 0071)	Nitrogen Oxides (NOx)	80.0000 PPMVD @ 0% O2	
				50.003	Fluid Catalytic Cracking Unit (FCCU) (1-85, EQT 0071)	Process Notes:		BACT-PSD
TX-0606	47256,PSDTX402M3	12/13/2011	BP PRODUCTS NORTH AMERICA INC TEXAS CITY REFINERY	50.003	Fluidized Catalytic Cracking Unit No.3	Sulfur Dioxide (SO2)	25.0000 PPMVD @ 0% O2	
				50.003	Fluidized Catalytic Cracking Unit No.3	Process Notes:	Throughput is confidential	BACT-PSD
				50.003	Fluidized Catalytic Cracking Unit No.3	Sulfuric Acid (mist, vapors, etc)	0.3300 LB H2SO4/1000 LBCOKE	
				50.003	Fluidized Catalytic Cracking Unit No.3	Process Notes:	Throughput is confidential	BACT-PSD
TX-0602	366AA, PSDTX903M4	11/14/2011	BASF FINA PETROCHEMICHALS LP BASF FINA NAFTA REGION OLEFINS COMPLEX	50.003	Ethane Feed	Sulfuric Acid (mist, vapors, etc)	0.3300 LB H2SO4/1000 LBCOKE	BACT-PSD
				50.003	Ethane Feed	Particulate matter, filterable < 10 µ (FPM10)	121.2000 LB/H	
				50.003	Ethane Feed	Process Notes:		BACT-PSD
				50.003	Ethane Feed	Particulate matter, filterable < 10 µ (FPM10)	121.2000 LB/H	
AR-0119	0868-AOP-R9	09/09/2011	LION OIL COMPANY LION OIL COMPANY	50.003	SN-809 FLUID CATALYTIC CACKING UNIT	Process Notes:		BACT-PSD
				50.003	SN-809 FLUID CATALYTIC CACKING UNIT	Particulate matter, filterable < 10 µ (FPM10)	10.5000 LB/H	
				50.003	SN-809 FLUID CATALYTIC CACKING UNIT	Process Notes:		BACT-PSD
				50.003	SN-809 FLUID CATALYTIC CACKING UNIT	Particulate matter, filterable < 10 µ (FPM10)	10.5000 LB/H	
TX-0587	5920A AND PSDTX103M4	12/29/2010	CONOCO PHILLIPS COMPANY SWEENY REFINERY	50.003	Fluid Catalytic Cracking Unit (FCCU)	Process Notes:		BACT-PSD
				50.003	Fluid Catalytic Cracking Unit (FCCU)	Particulate matter, total < 2.5 µ (TPM2.5)	1.3340 LB/TON OF COKE BURN	
				50.003	Fluid Catalytic Cracking Unit (FCCU)	Process Notes:		BACT-PSD
				50.003	Fluid Catalytic Cracking Unit (FCCU)	Particulate matter, total < 2.5 µ (TPM2.5)	1.3340 LB/TON OF COKE BURN	
TX-0592	38754 AND PSDTX324M13	03/29/2010	VALERO REFINING-TEXAS LP CORPUS CHRISTI WEST REFINERY	50.003	FCCU	Process Notes:		OTHER CASE-BY-CASE
				50.003	FCCU	Carbon Monoxide	2085.0000 LB/H	

RBLC Search Results: 50.002, 50.003

RBLC ID	PERMIT	PERMIT ISSUANC	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				50.003	FCCU	Process Notes:	CO limits are established during FCC Unit startup. All other pollutant limits are the same as for normal operations.	OTHER CASE-BY-CASE
				50.003	FCCU	Carbon Monoxide	2085.0000 LB/H	
DE-0020	AQM-003/00016	02/26/2010	VALERO ENERGY CORP VALERO DELAWARE CITY REFINERY	50.003	FLUIDIZED BED CATALYTIC CRACKING UNIT (FCCU)	Process Notes:	CO limits are established during FCC Unit startup. All other pollutant limits are the same as for normal operations.	RACT
				50.003	FLUIDIZED BED CATALYTIC CRACKING UNIT (FCCU)	Nitrogen Dioxide (NO2)	20.0000 PPMVD	
				50.003	FLUIDIZED BED CATALYTIC CRACKING UNIT (FCCU)	Process Notes:		BACT-PSD
				50.003	FLUIDIZED BED CATALYTIC CRACKING UNIT (FCCU)	Sulfur Dioxide (SO2)	25.0000 PPMVD@0%02	RACT
				50.003	FLUIDIZED BED CATALYTIC CRACKING UNIT (FCCU)	Nitrogen Dioxide (NO2)	20.0000 PPMVD	
				50.003	FLUIDIZED BED CATALYTIC CRACKING UNIT (FCCU)	Process Notes:		BACT-PSD
				50.003	FLUIDIZED BED COKING UNIT (FCU)	Sulfur Dioxide (SO2)	25.0000 PPMVD@0%02	
				50.003	FLUIDIZED BED COKING UNIT (FCU)	Process Notes:		BACT-PSD
				50.003	FLUIDIZED BED COKING UNIT (FCU)	Sulfur Dioxide (SO2)	25.0000 PPMVD@0%02	
				50.003	FLUIDIZED BED COKING UNIT (FCU)	Process Notes:		BACT-PSD
TX-0550	36644	02/10/2010	BASF FINA PETROCHEMICALS LIMITED PARTNERSHIP BASF FINA NAFTA REGION OLEFINS COMPLEX	50.003	N-10, CATALYST REGENERATION EFFLUENT	Sulfur Dioxide (SO2)	25.0000 PPMVD@0%02	BACT-PSD
				50.003	N-10, CATALYST REGENERATION EFFLUENT	Carbon Dioxide	0	
				50.003	N-10, CATALYST REGENERATION EFFLUENT	Process Notes:	THE RACT/BACT/LAER (RBLC) DATABASE WAS SEARCHED FOR THIS FACILITY TYPE. A MARATHON PETROLEUM DETROIT REFINERY CATALYST REGENERATION UNIT AND A BP WEST COAST PRODUCTS CATALYST REGENERATION UNIT USED GOOD COMBUSTION PRACTICES TO MEET BACT. THESE WERE THE ONLY FACILITIES LISTED IN THE RBLC DATABASE FOR THIS FACILITY TYPE. GOOD COMBUSTION PRACTICES ARE USED FOR EPN N-10.THE CATALYST FROM THE ACETYLENE CONVERTER MAIN BEDS, ACETYLENE CONVERTER GUARD BED, METHYL ACETYLENE, PROPADIENE CONVERTERS, C4 DIOLEFIN HYDROGENATION REACTOR AND FIRST STAGE DIOLEFINS REACTOR IS HEATED AND ANY COKE PRESENT ON THE CATALYST IS CONVERTED TO CO OR CO2. SINCE GOOD COMBUSTION PRACTICES ARE GOOD BUSINESS PRACTICE, NO ADDITIONAL CONDITIONS OR MONITORING WERE REQUIRED FOR THIS AMENDMENT.	BACT-PSD
				50.003	N-10, CATALYST REGENERATION EFFLUENT	Carbon Dioxide	0	

RBLC Search Results: 50.002, 50.003

RBLC ID	PERMIT	PERMIT ISSUANC	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				50.003	N-11, REACTOR REGENERATION EFFLUENT	Process Notes:	THE RACT/BACT/LAER (RBLC) DATABASE WAS SEARCHED FOR THIS FACILITY TYPE. A MARATHON PETROLEUM DETROIT REFINERY CATALYST REGENERATION UNIT AND A BP WEST COAST PRODUCTS CATALYST REGENERATION UNIT USED GOOD COMBUSTION PRACTICES TO MEET BACT. THESE WERE THE ONLY FACILITIES LISTED IN THE RBLC DATABASE FOR THIS FACILITY TYPE. GOOD COMBUSTION PRACTICES ARE USED FOR EPN N-10.THE CATALYST FROM THE ACETYLENE CONVERTER MAIN BEDS, ACETYLENE CONVERTER GUARD BED, METHYL ACETYLENE, PROPADIENE CONVERTERS, C4 DIOLEFIN HYDROGENATION REACTOR AND FIRST STAGE DIOLEFINS REACTOR IS HEATED AND ANY COKE PRESENT ON THE CATALYST IS CONVERTED TO CO OR CO2. SINCE GOOD COMBUSTION PRACTICES ARE GOOD BUSINESS PRACTICE, NO ADDITIONAL CONDITIONS OR MONITORING WERE REQUIRED FOR THIS AMENDMENT.	BACT-PSD
				50.003	N-11, REACTOR REGENERATION EFFLUENT	Carbon Dioxide	0	
				50.003	N-11, REACTOR REGENERATION EFFLUENT	Process Notes:	THE RACT/BACT/LAER DATABASE WAS SEARCHED FOR THIS FACILITY TYPE AND NO EXACT PROCESS WAS FOUND. THE MSS PROCESS AT N-11 IS SIMILAR TO N-10, THE CATALYST FROM THE DP REACTOR IS HEATED AND ANY COKE PRESENT ON THE CATALYST IS CONVERTED TO CO OR CO2. UNIT USED GOOD COMBUSTION PRACTICES TO MEET BACT SINCE GOOD COMBUSTION PRACTICES ARE GOOD BUSINESS PRACTICE, NO ADDITIONAL CONDITIONS OR MONITORING WERE REQUIRED FOR THIS AMENDMENT.	BACT-PSD
				50.003	N-11, REACTOR REGENERATION EFFLUENT	Carbon Dioxide	0	
				50.003	N-18, DECOKING DRUM	Process Notes:	THE RACT/BACT/LAER DATABASE WAS SEARCHED FOR THIS FACILITY TYPE AND NO EXACT PROCESS WAS FOUND. THE MSS PROCESS AT N-11 IS SIMILAR TO N-10, THE CATALYST FROM THE DP REACTOR IS HEATED AND ANY COKE PRESENT ON THE CATALYST IS CONVERTED TO CO OR CO2. UNIT USED GOOD COMBUSTION PRACTICES TO MEET BACT SINCE GOOD COMBUSTION PRACTICES ARE GOOD BUSINESS PRACTICE, NO ADDITIONAL CONDITIONS OR MONITORING WERE REQUIRED FOR THIS AMENDMENT.	BACT-PSD
				50.003	N-18, DECOKING DRUM	Carbon Dioxide	0	
				50.003	N-18, DECOKING DRUM	Process Notes:	THE RACT/BACT/LAER DATABASE WAS SEARCHED FOR THIS FACILITY TYPE AND SIMILAR PROCESSES WERE FOUND BUT THERE WERE NO PROJECT NOTES. THE DECOKING DRUM AND FURNACE TUBES ARE HEATED AND ANY COKE PRESENT ON THE CATALYST IS CONVERTED TO CO OR CO2. UNIT USED GOOD COMBUSTION PRACTICES TO MEET BACT. SINCE GOOD COMBUSTION PRACTICES ARE GOOD BUSINESS PRACTICE, NO ADDITIONAL CONDITIONS OR MONITORING WERE REQUIRED FOR THIS AMENDMENT.	BACT-PSD
				50.003	N-18, DECOKING DRUM	Carbon Dioxide	0	

RBLC Search Results: 50.002, 50.003

RBLC ID	PERMIT	PERMIT ISSUANCE	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
LA-0213	PSD-LA-619(M5)	11/17/2009	VALERO REFINING - NEW ORLEANS, LLC ST. CHARLES REFINERY	50.003	FCCU REGENERATOR (16-77)	Process Notes:	THE RACT/BACT/LAER DATABASE WAS SEARCHED FOR THIS FACILITY TYPE AND SIMILAR PROCESSES WERE FOUND BUT THERE WERE NO PROJECT NOTES. THE DECOKING DRUM AND FURNACE TUBES ARE HEATED AND ANY COKE PRESENT ON THE CATALYST IS CONVERTED TO CO OR CO2. UNIT USED GOOD COMBUSTION PRACTICES TO MEET BACT. SINCE GOOD COMBUSTION PRACTICES ARE GOOD BUSINESS PRACTICE, NO ADDITIONAL CONDITIONS OR MONITORING WERE REQUIRED FOR THIS AMENDMENT.	BACT-PSD
				50.003	FCCU REGENERATOR (16-77)	Carbon Monoxide	696.8000 LB/H	BACT-PSD
				50.003	FCCU REGENERATOR (16-77)	Hydrogen Sulfide	0.9000 LB/H	BACT-PSD
				50.003	FCCU REGENERATOR (16-77)	Nitrogen Oxides (NOx)	145.3200 LB/H	BACT-PSD
				50.003	FCCU REGENERATOR (16-77)	Particulate matter, total < 10 µ (TPM10)	74.6000 LB/H	
				50.003	FCCU REGENERATOR (16-77)	Process Notes:	130,000 BBLS/DAY	BACT-PSD
				50.003	FCCU REGENERATOR (16-77)	Sulfur Oxides (SOx)	176.1200 LB/H	BACT-PSD
				50.003	FCCU REGENERATOR (16-77)	Volatile Organic Compounds (VOC)	15.5000 LB/H	BACT-PSD
				50.003	FCCU REGENERATOR (16-77)	Carbon Monoxide	696.8000 LB/H	BACT-PSD
				50.003	FCCU REGENERATOR (16-77)	Hydrogen Sulfide	0.9000 LB/H	BACT-PSD
				50.003	FCCU REGENERATOR (16-77)	Nitrogen Oxides (NOx)	145.3200 LB/H	BACT-PSD
				50.003	FCCU REGENERATOR (16-77)	Particulate matter, total < 10 µ (TPM10)	74.6000 LB/H	
				50.003	FCCU REGENERATOR (16-77)	Process Notes:	130,000 BBLS/DAY	BACT-PSD
				50.003	FCCU REGENERATOR (16-77)	Sulfur Oxides (SOx)	176.1200 LB/H	BACT-PSD
				50.003	CRU: CHLOROSORB VENT AND DUST COLLECTOR	Volatile Organic Compounds (VOC)	15.5000 LB/H	
				50.003	CRU: CHLOROSORB VENT AND DUST COLLECTOR	Process Notes:		BACT-PSD
				50.003	CRU: CHLOROSORB VENT AND DUST COLLECTOR	Volatile Organic Compounds (VOC)	0	
				50.003	CRU: CHLOROSORB VENT AND DUST COLLECTOR	Process Notes:		BACT-PSD
AL-0246	X063A, X066A, X067A & X070A	09/28/2009	HUNT REFINERY CO. TUSCALOOSA	50.003	NINE PROCESS HEATERS IN FOUR PROCESS UNITS	Volatile Organic Compounds (VOC)	0	BACT-PSD
				50.003	NINE PROCESS HEATERS IN FOUR PROCESS UNITS	Nitrogen Oxides (NOx)	0.0250 LB/MMBTU	BACT-PSD
				50.003	NINE PROCESS HEATERS IN FOUR PROCESS UNITS	Particulate matter, total (TPM)	0.0075 LB/MMBTU PM	
				50.003	NINE PROCESS HEATERS IN FOUR PROCESS UNITS	Process Notes:	HEATER#-HEATER DESCRIPT-NGULNB-CEMS- PROCESS UNIT PREHEATER COKER BA-601M - 57MMBTU/HR - YES - NO -DELAY COKER BA-602M - 49.4MMBTU/H - YES - NO -DELAY COKER COKER HEATER BA-603M - 198MMBTU/HR - YES - YES -DELAY COKER HYDROCRACKER HD-H-3401-34.7MMBTU/HR - YES - YES-HYDROCRACKER HD-H-3402-98.3MMBTU/HR - YES - YES-HYDROCRACKER CCR HEATER CR-H-3801-69.3MMBTU/HR - YES - YES - CCR CR-H-3802-78.2MMBTU/HR - YES - YES - CCR CR-H-3803-60.9MMBTU/HR - YES - YES - CCR HPZ-H-3600-254MMBTU/HR - YES - YES -#2 HYDROPLANT PLANT HEATER	BACT-PSD
				50.003	NINE PROCESS HEATERS IN FOUR PROCESS UNITS	Nitrogen Oxides (NOx)	0.0250 LB/MMBTU	BACT-PSD

RBLC Search Results: 50.002, 50.003

RBLC ID	PERMIT	PERMIT ISSUANC	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				50.003	NINE PROCESS HEATERS IN FOUR PROCESS UNITS	Particulate matter, total (TPM)	0.0075 LB/MMBTU PM	
				50.003	TWO PROCESS HEATERS IN TWO PROCESS UNITS	Process Notes:	HEATER#-HEATER DESCRIPT-NGULNB-CEMS- PROCESS UNIT PREHEATER COKER BA-601M - 57MMBTU/HR - YES - NO -DELAY COKER BA-602M - 49.4MMBTU/H - YES - NO -DELAY COKER COKER HEATER BA-603M - 198MMBTU/HR - YES - YES -DELAY COKER HYDROCRACKER HD-H-3401-34.7MMBTU/HR - YES - YES-HYDROCRACKER HD-H-3402-98.3MMBTU/HR - YES - YES-HYDROCRACKER CCR HEATER CR-H-3801-69.3MMBTU/HR - YES - YES - CCR CR-H-3802-78.2MMBTU/HR - YES - YES - CCR CR-H-3803-60.9MMBTU/HR - YES - YES - CCR HPZ-H-3600-254MMBTU/HR - YES - YES -#2 HYDROPLANT PLANT HEATER	BACT-PSD
				50.003	TWO PROCESS HEATERS IN TWO PROCESS UNITS	Nitrogen Oxides (NOx)	4.7000 LB/H BA-675	BACT-PSD
				50.003	TWO PROCESS HEATERS IN TWO PROCESS UNITS	Nonprecursor Organic Compounds	0.2000 LB/H BA-675	
				50.003	TWO PROCESS HEATERS IN TWO PROCESS UNITS	Process Notes:	AFFECTED UNITS: BA-675-32.4MMBTU/H	BACT-PSD
				50.003	TWO PROCESS HEATERS IN TWO PROCESS UNITS	Nitrogen Oxides (NOx)	4.7000 LB/H BA-675	BACT-PSD
				50.003	TWO PROCESS HEATERS IN TWO PROCESS UNITS	Nonprecursor Organic Compounds	0.2000 LB/H BA-675	
LA-0222	PSD-LA-199(M-8)	09/15/2009	CHALMETTE REFINING, LLC CHALMETTE REFINERY	50.003	FLUIDIZED CATALYTIC CRACKING UNIT (FCCU)	Process Notes:	AFFECTED UNITS: BA-675-32.4MMBTU/H	BACT-PSD
				50.003	FLUIDIZED CATALYTIC CRACKING UNIT (FCCU)	Carbon Monoxide	732.8000 T/YR	
				50.003	FLUIDIZED CATALYTIC CRACKING UNIT (FCCU)	Process Notes:		BACT-PSD
				50.003	FLUIDIZED CATALYTIC CRACKING UNIT (FCCU)	Carbon Monoxide	732.8000 T/YR	
OH-0329	P0103694	08/07/2009	BP PRODUCTS, NORTH AMERICA INC. BP-HUSKY REFINING LLC	50.003	REFORMER HEATER	Process Notes:		Other Case-by-Case
				50.003	REFORMER HEATER	Carbon Monoxide	18.6000 LB/H	N/A
				50.003	REFORMER HEATER	Nitrogen Oxides (NOx)	23.4000 LB/H	BACT-PSD
				50.003	REFORMER HEATER	Particulate matter, total < 10 µ (TPM10)	3.9000 LB/H	
				50.003	REFORMER HEATER	Process Notes:	APPLICABLE FEDERAL REQUIREMENTS: PART 63 SUBPART DDDDD CASE-BYCASE MACT; PART 60 SUBPART JA FOR SO2, H2S, AND NOX.	N/A
				50.003	REFORMER HEATER	Sulfur Dioxide (SO2)	15.5200 LB/H	N/A
				50.003	REFORMER HEATER	Visible Emissions (VE)	20.0000 % OPACITY	N/A
				50.003	REFORMER HEATER	Volatile Organic Compounds (VOC)	2.8000 LB/H	Other Case-by-Case
				50.003	REFORMER HEATER	Carbon Monoxide	18.6000 LB/H	N/A
				50.003	REFORMER HEATER	Nitrogen Oxides (NOx)	23.4000 LB/H	BACT-PSD
				50.003	REFORMER HEATER	Particulate matter, total < 10 µ (TPM10)	3.9000 LB/H	
				50.003	REFORMER HEATER	Process Notes:	APPLICABLE FEDERAL REQUIREMENTS: PART 63 SUBPART DDDDD CASE-BYCASE MACT; PART 60 SUBPART JA FOR SO2, H2S, AND NOX.	N/A
				50.003	REFORMER HEATER	Sulfur Dioxide (SO2)	15.5200 LB/H	N/A
				50.003	REFORMER HEATER	Visible Emissions (VE)	20.0000 % OPACITY	N/A
				50.003	REFORMER PROCESS UNIT	Volatile Organic Compounds (VOC)	2.8000 LB/H	MACT
				50.003	REFORMER PROCESS UNIT	Hydrochloric Acid	10.0000 PPMV	

RBLC Search Results: 50.002, 50.003

RBLC ID	PERMIT	PERMIT ISSUANC	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				50.003	REFORMER PROCESS UNIT	Process Notes:	NAPHTHA SPLITTER, DEBUTANIZER, RECYCLE AND NET HYDROGEN GAS COMPRESSORS, DRUMS AND EXCHANGERS. END PRODUCT HIGH OCTANE REFORMATES AND HYDROGEN.	N/A
				50.003	REFORMER PROCESS UNIT	Volatile Organic Compounds (VOC)	0.1600 LB/H	MACT
				50.003	REFORMER PROCESS UNIT	Hydrochloric Acid	10.0000 PPMV	
				50.003	REFORMER PROCESS UNIT	Process Notes:	NAPHTHA SPLITTER, DEBUTANIZER, RECYCLE AND NET HYDROGEN GAS COMPRESSORS, DRUMS AND EXCHANGERS. END PRODUCT HIGH OCTANE REFORMATES AND HYDROGEN.	N/A
				50.003	BENZENE SATURATION UNIT	Volatile Organic Compounds (VOC)	0.1600 LB/H	
				50.003	BENZENE SATURATION UNIT	Process Notes:	FULLY ENCLOSED CATALYTIC PROCESS WITH NO FIRED HEATER.	MACT
				50.003	BENZENE SATURATION UNIT	Volatile Organic Compounds (VOC)	0.4000 LB/H	
				50.003	BENZENE SATURATION UNIT	Process Notes:	FULLY ENCLOSED CATALYTIC PROCESS WITH NO FIRED HEATER.	MACT
TX-0539	PSD-TX-1073M1	07/22/2009	TOTAL REFINING - PORT ARTHUR TOTAL PORT ARTHUR - SRU AND CRUDE HANDLING	50.003	COKER UNIT HEATERS	Volatile Organic Compounds (VOC)	0.4000 LB/H	BACT-PSD
				50.003	COKER UNIT HEATERS	Carbon Monoxide	14.6800 LB/H	BACT-PSD
				50.003	COKER UNIT HEATERS	Particulate matter, filterable < 10 µ (FPM10)	1.5700 LB/H	
				50.003	COKER UNIT HEATERS	Process Notes:	BTU RATING IS FOR EACH UNIT.	BACT-PSD
				50.003	COKER UNIT HEATERS	Sulfur Dioxide (SO2)	5.0600 LB/H	BACT-PSD
				50.003	COKER UNIT HEATERS	Carbon Monoxide	14.6800 LB/H	BACT-PSD
				50.003	COKER UNIT HEATERS	Particulate matter, filterable < 10 µ (FPM10)	1.5700 LB/H	
				50.003	COKER UNIT HEATERS	Process Notes:	BTU RATING IS FOR EACH UNIT.	BACT-PSD
LA-0238	PSD-LA-75(M3)	07/10/2009	CONOCOPHILLIPS COMPANY ALLIANCE REFINERY	50.003	FCCU REGEN VENT - SU/SD OPERATIONS	Sulfur Dioxide (SO2)	5.0600 LB/H	BACT-PSD
				50.003	FCCU REGEN VENT - SU/SD OPERATIONS	Carbon Monoxide	16674.1800 LB/H	
				50.003	FCCU REGEN VENT - SU/SD OPERATIONS	Process Notes:		BACT-PSD
				50.003	FCCU REGEN VENT - SU/SD OPERATIONS	Sulfur Dioxide (SO2)	1286.0000 LB/H	BACT-PSD
				50.003	FCCU REGEN VENT - SU/SD OPERATIONS	Carbon Monoxide	16674.1800 LB/H	
				50.003	FCCU REGEN VENT - SU/SD OPERATIONS	Process Notes:		BACT-PSD
OH-0308	04-01447	02/23/2009	SUNOCO, INC. SUN COMPANY, INC., TOLEDO REFINERY	50.003	FLUIDIZED CATALYTIC CRACKING UNIT	Sulfur Dioxide (SO2)	1286.0000 LB/H	N/A
				50.003	FLUIDIZED CATALYTIC CRACKING UNIT	Ammonia (NH3)	5.0000 PPMV	BACT-PSD
				50.003	FLUIDIZED CATALYTIC CRACKING UNIT	Carbon Monoxide	180.0000 PPMVD@ 0% O2	N/A
				50.003	FLUIDIZED CATALYTIC CRACKING UNIT	Nitrogen Oxides (NOx)	40.0000 PPMVD @ 0% O2	N/A
				50.003	FLUIDIZED CATALYTIC CRACKING UNIT	Particulate matter, filterable (FPM)	0.4500 LB/1000 LB	BACT-PSD
				50.003	FLUIDIZED CATALYTIC CRACKING UNIT	Particulate matter, filterable < 10 µ (FPM10)	331.9200 T/YR	
				50.003	FLUIDIZED CATALYTIC CRACKING UNIT	Process Notes:	FLUIDIZED CATALYTIC CRACKING UNIT (FCCU) WITH CAPACITY OF 100,000 BARRELS/DAY; W/ CO CONTROLLED BY TWO BOILERS (WHICH SHARE EMISSIONS LIMITS WITH THE FCCU); AN SCR SYSTEM FOR NOX, AND A WET GAS SCRUBBER FOR SO2 AND PM CONTROL.	N/A
				50.003	FLUIDIZED CATALYTIC CRACKING UNIT	Sulfur Dioxide (SO2)	316.0000 LB/H	N/A
				50.003	FLUIDIZED CATALYTIC CRACKING UNIT	Sulfuric Acid (mist, vapors, etc)	263.1100 T/YR	N/A
				50.003	FLUIDIZED CATALYTIC CRACKING UNIT	Visible Emissions (VE)	20.0000 % OPACITY	N/A
				50.003	FLUIDIZED CATALYTIC CRACKING UNIT	Volatile Organic Compounds (VOC)	3.6700 LB/H	N/A
				50.003	FLUIDIZED CATALYTIC CRACKING UNIT	Ammonia (NH3)	5.0000 PPMV	BACT-PSD
				50.003	FLUIDIZED CATALYTIC CRACKING UNIT	Carbon Monoxide	180.0000 PPMVD@ 0% O2	N/A

RBLC Search Results: 50.002, 50.003

RBLC ID	PERMIT	PERMIT ISSUANC	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				50.003	FLUIDIZED CATALYTIC CRACKING UNIT	Nitrogen Oxides (NOx)	40.0000 PPMVD @ 0% O2	N/A
				50.003	FLUIDIZED CATALYTIC CRACKING UNIT	Particulate matter, filterable (FPM)	0.4500 LB/1000 LB	BACT-PSD
				50.003	FLUIDIZED CATALYTIC CRACKING UNIT	Particulate matter, filterable < 10 µ (FPM10)	331.9200 T/YR	
				50.003	FLUIDIZED CATALYTIC CRACKING UNIT	Process Notes:	FLUIDIZED CATALYTIC CRACKING UNIT (FCCU) WITH CAPACITY OF 100,000 BARRELS/DAY; W/ CO CONTROLLED BY TWO BOILERS (WHICH SHARE EMISSIONS LIMITS WITH THE FCCU); AN SCR SYSTEM FOR NOX, AND A WET GAS SCRUBBER FOR SO2 AND PM CONTROL.	N/A
				50.003	FLUIDIZED CATALYTIC CRACKING UNIT	Sulfur Dioxide (SO2)	316.0000 LB/H	N/A
				50.003	FLUIDIZED CATALYTIC CRACKING UNIT	Sulfuric Acid (mist, vapors, etc)	263.1100 T/YR	N/A
				50.003	FLUIDIZED CATALYTIC CRACKING UNIT	Visible Emissions (VE)	20.0000 % OPACITY	N/A
TX-0841	PSDTX1328M2, N260, GHGPSDTX38M	07/01/2018	DOW CHEMICAL LHC-9	50.003	cracking furnaces [heaters]	Volatile Organic Compounds (VOC)	3.6700 LB/H	BACT-PSD
				50.003	cracking furnaces [heaters]	Carbon Dioxide Equivalent (CO2e)	0	LAER
				50.003	cracking furnaces [heaters]	Nitrogen Oxides (NOx)	0.0100 LB/MMBTU	BACT-PSD
				50.003	cracking furnaces [heaters]	Particulate matter, filterable (FPM)	0.8100 LB/MMSCF	BACT-PSD
				50.003	cracking furnaces [heaters]	Particulate matter, filterable < 10 µ (FPM10)	0.8100 LB/MMSCF	BACT-PSD
				50.003	cracking furnaces [heaters]	Particulate matter, filterable < 2.5 µ (FPM2.5)	0.8100 LB/MMSCF	
				50.003	cracking furnaces [heaters]	Process Notes:		BACT-PSD
				50.003	cracking furnaces [heaters]	Carbon Dioxide Equivalent (CO2e)	0	LAER
				50.003	cracking furnaces [heaters]	Nitrogen Oxides (NOx)	0.0100 LB/MMBTU	BACT-PSD
				50.003	cracking furnaces [heaters]	Particulate matter, filterable (FPM)	0.8100 LB/MMSCF	BACT-PSD
				50.003	cracking furnaces [heaters]	Particulate matter, filterable < 10 µ (FPM10)	0.8100 LB/MMSCF	BACT-PSD
				50.003	cracking furnaces [heaters]	Particulate matter, filterable < 2.5 µ (FPM2.5)	0.8100 LB/MMSCF	
IL-0103	06050052	08/05/2008	CONOCOPHILLIPS CONOCOPHILLIPS WOOD RIVER REFINERY	50.003	DELAYED COKER UNIT 2	Process Notes:		BACT-PSD
				50.003	DELAYED COKER UNIT 2	Carbon Monoxide	14.1000 T	
				50.003	DELAYED COKER UNIT 2	Process Notes:		LAER
				50.003	MODIFIED FLUIDIZED CATALYTIC CRACKING UNITS 1 & 2	Volatile Organic Compounds (VOC)	0	BACT-PSD
				50.003	MODIFIED FLUIDIZED CATALYTIC CRACKING UNITS 1 & 2	Carbon Monoxide	100.0000 PPMV, AT 0% O2	
				50.003	MODIFIED FLUIDIZED CATALYTIC CRACKING UNITS 1 & 2	Process Notes:	PARTIAL COMBUSTION UNITS.	LAER
				50.003	FLUIDIZED CATALYTIC CRACKING UNIT 3	Volatile Organic Compounds (VOC)	0.0500 LB/1000 LB COKE BURN	BACT-PSD
				50.003	FLUIDIZED CATALYTIC CRACKING UNIT 3	Carbon Monoxide	150.0000 PPMV, AT 0% O2	
				50.003	FLUIDIZED CATALYTIC CRACKING UNIT 3	Process Notes:	RESTART OF UNIT AFTER EXTENDED OUTAGE. UNIT IS OF FULL COMBUSTION DESIGN.	LAER
AL-0242	X063 THROUGH X072	05/20/2008	HUNT REFINING COMPANY TUSCALOOSA REFINERY	50.003	EIGHT (8) PROCESS HEATERS	Volatile Organic Compounds (VOC)	11.0000 LB/1000 BBL FEED	BACT-PSD
				50.003	EIGHT (8) PROCESS HEATERS	Nitrogen Dioxide (NO2)	0.0350 LB/MMBTU	BACT-PSD
				50.003	EIGHT (8) PROCESS HEATERS	Particulate matter, filterable < 10 µ (FPM10)	0.0075 LB/MMBTU	

RBLC Search Results: 50.002, 50.003

RBLC ID	PERMIT	PERMIT ISSUANC	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				50.003	EIGHT (8) PROCESS HEATERS	Process Notes:	AFFECTED HEATERS ARE: 1) 69.3 MMBTU/HR CONTINUOUS CATALYTIST REGENERATION PLATFORMER CHARGE HEATER 2) 78.2 MMBTU/HR CONTINUOUS CATALYTIST REGENERATION PLATFORMER INTER-STAGE HEATER NO. 1 3) 60.9 MMBTU/HR CONTINUOUS CATALYTIST REGENERATION PLATFORMER INTER-STAGE HEATER NO. 2 4) 198.0 MMBTU/HR NEW COKER PRE-HEATER 5) 56.0 MMBTU/HR NEW COKER HEATER 6) 254.0 MMBTU/HR NO. 2 HYDROGEN PLANT HEATER 7) 34.7 MMBTU/HR HYDROCRACKER REACTOR CHARGE HEATER 8) 98.3 MMBTU/HR HYDROCRACKER FRACTIONATOR FEED HEATER	BACT-PSD
LA-0225	PSD-LA-730	03/25/2008	MOTIVA ENTERPRISES LLC NORCO REFINERY	50.003	HYDROCRACKER UNIT FUGITIVE EMISSIONS 3011-95	Volatile Organic Compounds (VOC)	0.0054 LB/MMBTU	
				50.003	HYDROCRACKER UNIT FUGITIVE EMISSIONS 3011-95	Process Notes:		BACT-PSD
				50.003	DIESEL HYDROTREATER UNIT FUGITIVE EMISSIONS 5011-99	Volatile Organic Compounds (VOC)	100.4000 T/YR	
				50.003	DIESEL HYDROTREATER UNIT FUGITIVE EMISSIONS 5011-99	Process Notes:		BACT-PSD
				50.003	DISTILLING UNIT FUGITIVE EMISSIONS 3004-95	Volatile Organic Compounds (VOC)	67.5100 T/YR	
				50.003	DISTILLING UNIT FUGITIVE EMISSIONS 3004-95	Process Notes:		BACT-PSD
				50.003	CATALYTIC REFORMER NO. 2 UNIT FUGITIVE EMISSIONS 3010-95	Volatile Organic Compounds (VOC)	182.6300 T/YR	
				50.003	CATALYTIC REFORMER NO. 2 UNIT FUGITIVE EMISSIONS 3010-95	Process Notes:		BACT-PSD
				50.003	HYDROGEN PLANT FUGITIVE EMISSIONS 5011-99	Volatile Organic Compounds (VOC)	120.5700 T/YR	
				50.003	HYDROGEN PLANT FUGITIVE EMISSIONS 5011-99	Process Notes:		BACT-PSD
AR-0100	868-AOP-R5	10/01/2007	LION OIL COMPANY LION OIL COMPANY	50.003	#7 FCCU CATALYST REGENERATOR, SN-809	Volatile Organic Compounds (VOC)	15.4100 T/YR	BACT-PSD
				50.003	#7 FCCU CATALYST REGENERATOR, SN-809	Carbon Monoxide	100.0000 PPMDV	BACT-PSD
				50.003	#7 FCCU CATALYST REGENERATOR, SN-809	Particulate matter, filterable (FPM)	0.5000 LB/1000	

RBLC Search Results: 50.002, 50.003

RBLC ID	PERMIT	PERMIT ISSUANC	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
TX-0290	21262/PSD-TX-928	09/27/2007	SHELL OIL COMPANY DEER PARK REFINERY LIMITED PARTNERSHIP	50.003	FLUIDIZED-BED CATALYTIC CRACKING UNIT (FCCU)	Process Notes:	NO NEW EMISSIONS SOURCES ARE INCLUDED IN THE SCOPE OF THE PROJECT FOR THE FCCU EXPANSION. HOWEVER, EMISSIONS INCREASES WILL RESULT FROM THE INCREASED THROUGHPUT. SN-809 IS THE EXHAUST STACK FROM THE CATALYST REGENERATOR. HOT FLUE GAS LEAVING THE REGENERATOR PASSES THROUGH 3 SETS OF CYCLONES TO REMOVE CATALYST FINES & THEN IS USED TO PRODUCE STEAM IN THE WASTE HEAT BOILER BEFORE EXITING THE STACK. THIS SOURCE INSTALLED IN 1973. PREVIOUSLY PERMITTED SOURCE, SN-848, THE VENT SYSTEM FOR 2 STORAGE BINS USED TO STORE CATALYST IN THE CATALYTIC CRACKING PROCESS, HAS BEEN ROUTED TO THE WET GAS SCRUBBER OF THE #7 FCCU UNIT. THE #7 FCCU WAS MODIFIED IN 2004 TO INSTALL WET GAS SCRUBBER FOR THE CONTROL OF PM10 & SO2 EMISSIONS. SIMULTANEOUS WITH THE INSTALLATION OF THE SCRUBBER, THE FACILITY THIS UNIT IS DESIGNED TO CONVERT APPROX 20,000 BPD OF GAS OIL FROM THE REFINERY CRUDE UNITS & OTHER SOURCES INTO MORE USEFUL PRODUCTS. GAS OIL ENTERING THE UNIT IS FIRST HEATED TO 675°F IN THE #7 FCCU FURNACE (SN-808) WHICH IS FIRED WITH NSPS SUBPART J QUALITY GAS & EQUIPPED WITH LOW NOX BURNERS. THE HOT OIL IS THEN CONTACTED WITH A HOT (APPROXIMATELY 1350°F) FLUIDIZED CATALYST WHICH CAUSES THE GAS OIL TO CRACK INTO LIGHTER PRODUCTS. THE CATALYST IS THEN SEPARATED FROM THE PRODUCTS IN THE REACTOR	LAER
				50.003	FLUIDIZED-BED CATALYTIC CRACKING UNIT (FCCU)	Nitrogen Oxides (NOx)	20.0000 PPMVD @ 0% O2	
MS-0086	1280-00058	05/08/2007	CHEVRON PRODUCTS COMPANY CHEVRON PRODUCTS COMPANY, PASCAGOULA REFINERY	50.003	CONTINUOUS CATALYST REGENERATOR VENT	Process Notes:		BACT-PSD
				50.003	CONTINUOUS CATALYST REGENERATOR VENT	Carbon Monoxide	0.9700 LB/H	BACT-PSD
				50.003	CONTINUOUS CATALYST REGENERATOR VENT	Nitrogen Oxides (NOx)	0.0840 LB/H	
TX-0530	39142/PSD-TX-822M2	04/05/2007	VALERO REFINING COMPANY VALERO THREE RIVERS REFINERY	50.003	FLUIDIZED BED CATALYTIC CRACKING UNIT (FCCU)	Process Notes:	WILL HAVE A GAS-SOLID ADSORPTION SYSTEM FOR HCL REMOVAL AND RESIDUAL CONTAMINANT REMOVAL SYSTEM FOR DIOXIN REMOVAL.	
				50.003	FLUIDIZED BED CATALYTIC CRACKING UNIT (FCCU)	Process Notes:		BACT-PSD
TX-0529	50607/PSD-TX-331M1	04/03/2007	VALERO REFINING COMPANY VALERO TEXAS CITY REFINERY	50.003	FLUIDIZED BED CATALYTIC CRACKING UNIT (FCCU)	Sulfur Dioxide (SO2)	25.0000 PPMVD@0%O2	
				50.003	FLUIDIZED BED CATALYTIC CRACKING UNIT (FCCU)	Process Notes:		BACT-PSD
CA-1139	454221	03/30/2007	CHEVRON USA PRODUCTS COMPANY CHEVRON EL SEGUNDO REFINERY	50.003	FLUIDIZED BED CATALYTIC CRACKING UNIT (FCCU)	Sulfur Dioxide (SO2)	25.0000 PPMVD@0%O2	
				50.003	FLUIDIZED BED CATALYTIC CRACKING UNIT (FCCU)	Process Notes:		BACT-PSD
TX-0532	22433	03/28/2007	MARATHON ASHLAND PETROLEUM (MAP) MAP TEXAS CITY PLANT	50.003	FLUIDIZED BED CATALYTIC CRACKING UNIT (FCCU)	Sulfur Dioxide (SO2)	25.0000 PPMVD@0%O2	
				50.003	FLUIDIZED BED CATALYTIC CRACKING UNIT (FCCU)	Process Notes:		BACT-PSD
CA-1138	458743	03/23/2007	EXXONMOBILE OIL CORPORATION EXXONMOBILE TORRANCE REFINERY	50.003	FLUIDIZED BED CATALYTIC CRACKING UNIT (FCCU)	Sulfur Dioxide (SO2)	20.0000 PPMVD@0%O2	BACT-PSD
				50.003	FLUIDIZED BED CATALYTIC CRACKING UNIT (FCCU)	Nitrogen Oxides (NOx)	20.0000 PPMVD@0%O2	
				50.003	FLUIDIZED BED CATALYTIC CRACKING UNIT (FCCU)	Process Notes:		BACT-PSD
MT-0029	2619-22	03/22/2007	CONOCOPHILLIPS COMPANY CONOCOPHILLIPS BILLINGS REFINERY	50.003	FLUIDIZED-BED CATALYTIC CRACKING UNIT (FCCU)	Sulfur Dioxide (SO2)	25.0000 PPMVD@0%O2	
				50.003	FLUIDIZED-BED CATALYTIC CRACKING UNIT (FCCU)	Process Notes:		BACT-PSD
OK-0119	2003-336-C M-3 PSD	02/09/2007	CONOCOPHILLIPS COMPANY CONOCOPHILLIPS PONCA CITY REFINERY	50.003	FLUIDIZED CATALYTIC CRACKING UNIT (FCCU) NUMBER 5	Sulfur Dioxide (SO2)	25.0000 PPMVD@0%O2	
				50.003	FLUIDIZED CATALYTIC CRACKING UNIT (FCCU) NUMBER 5	Process Notes:		BACT-PSD
LA-0216	2520-00027-V4	02/08/2007	VALERO REFINING VALERO ST.CHARLES REFINERY	50.003	FLUIDIZED BED CATALYTIC CRACKING UNIT (FCCU)	Sulfur Dioxide (SO2)	25.0000 PPMVD@0%O2	

RBLC Search Results: 50.002, 50.003

RBLC ID	PERMIT	PERMIT ISSUANC	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				50.003	FLUIDIZED BED CATALYTIC CRACKING UNIT (FCCU)	Process Notes:		BACT-PSD
OK-0116	98-172-C M-19 PSD	02/08/2007	VALERO REFINING CO VALERO ARDMORE REFINERY	50.003	FCCU NO. 1 REGENERATOR AND CO BOILER/INCINERATOR	Sulfur Dioxide (SO2)	25.0000 PPMVD@0%02	BACT-PSD
				50.003	FCCU NO. 1 REGENERATOR AND CO BOILER/INCINERATOR	Carbon Monoxide	175.0000 PPMVD	
				50.003	FCCU NO. 2 REGENERATOR	Process Notes:		BACT-PSD
				50.003	FCCU NO. 2 REGENERATOR	Carbon Monoxide	50.0000 PPMVD	
LA-0211	PSD-LA-719	12/27/2006	MARATHON PETROLEUM CO LLC GARYVILLE REFINERY	50.003	FCCU REGENERATOR VENT (86-74)	Process Notes:		BACT-PSD
				50.003	FCCU REGENERATOR VENT (86-74)	Carbon Monoxide	481.7600 MAX LB/H	BACT-PSD
				50.003	FCCU REGENERATOR VENT (86-74)	Nitrogen Oxides (NOx)	40.0000 PPMV@0%02	BACT-PSD
				50.003	FCCU REGENERATOR VENT (86-74)	Particulate matter, filterable < 10 µ (FPM10)	0.3000 LB/1000 LB COKE BURN	
				50.003	FCCU REGENERATOR VENT (86-74)	Process Notes:		BACT-PSD
				50.003	FCCU REGENERATOR VENT (86-74)	Sulfur Dioxide (SO2)	25.0000 PPMV@0%02	BACT-PSD
				50.003	FCCU REGENERATOR VENT (86-74)	Sulfuric Acid (mist, vapors, etc)	10.4100 MAX LB/H	BACT-PSD
TX-0527	6308/PSD-TX-137M2	10/31/2006	FLINT HILLS RESOURCES FLINT HILLS CORPUS CHRISTI EAST REFINERY	50.003	FLUIDIZED BED CATALYTIC CRACKING UNIT (FCCU)	Volatile Organic Compounds (VOC)	0.0700 MAX LB/H	
				50.003	FLUIDIZED BED CATALYTIC CRACKING UNIT (FCCU)	Process Notes:		BACT-PSD
TX-0528	46534/PSD-TX-992	06/02/2006	EXXONMOBIL OIL CORPORATION EXXONMOBIL BEAUMONT REFINERY	50.003	FLUIDIZED BED CATALYTIC CRACKING UNIT (FCCU)	Sulfur Dioxide (SO2)	25.0000 PPMVD@0%02	
				50.003	FLUIDIZED BED CATALYTIC CRACKING UNIT (FCCU)	Process Notes:		BACT-PSD
PA-0250	04322	02/28/2006	SUNOCO, INC. (R&M) SUNOCO, INC. (R&M)	50.003	1232 FCCU	Sulfur Dioxide (SO2)	25.0000 PPMVD@0%02	BACT-PSD
				50.003	1232 FCCU	Carbon Monoxide	100.0000 PPMDV @ 0% O2	BACT-PSD
				50.003	1232 FCCU	Particulate matter, filterable < 10 µ (FPM10)	0.3000 LB/1000 LB COKE BURN	
				50.003	1232 FCCU	Process Notes:	LIMITED TO 90,000 BPD ON A ROLLING 365-DAY AVG. OR 100,000 BPD FOR A SINGLE DAY. EXISTING CO BOILER, REPLACING ESP WITH SCR & WET GAS SCRUBBER	BACT-PSD
TX-0511	PSD-TX 903M1,N-007M1 AND 36644	02/03/2006	BASF FINA PETROCHEMICALS BASF ETHYLENE/PROPYLENE CRACKER	50.003	RECYCLE ETHANE CRACKING FURNACE	Sulfuric Acid (mist, vapors, etc)	37.9800 LB/H	BACT-PSD
				50.003	RECYCLE ETHANE CRACKING FURNACE	Carbon Monoxide	23.2500 LB/H	BACT-PSD
				50.003	RECYCLE ETHANE CRACKING FURNACE	Nitrogen Oxides (NOx)	24.1600 LB/H	BACT-PSD
				50.003	RECYCLE ETHANE CRACKING FURNACE	Particulate matter, filterable < 10 µ (FPM10)	1.5100 LB/H	
				50.003	RECYCLE ETHANE CRACKING FURNACE	Process Notes:		BACT-PSD
				50.003	RECYCLE ETHANE CRACKING FURNACE	Sulfur Dioxide (SO2)	1.1200 LB/H	BACT-PSD
				50.003	FRESH FEED CRACKING HEATER	Volatile Organic Compounds (VOC)	0.5700 LB/H	BACT-PSD
				50.003	FRESH FEED CRACKING HEATER	Carbon Monoxide	34.0100 LB/H	BACT-PSD
				50.003	FRESH FEED CRACKING HEATER	Nitrogen Oxides (NOx)	35.3500 LB/H	BACT-PSD
				50.003	FRESH FEED CRACKING HEATER	Particulate matter, filterable < 10 µ (FPM10)	2.2100 LB/H	

RBLC Search Results: 50.002, 50.003

RBLC ID	PERMIT	PERMIT ISSUANC	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				50.003	FRESH FEED CRACKING HEATER	Process Notes:	BFLP'S PORT ARTHUR ETHYLENE CRACKER CONSISTS OF A SINGLE TRAIN UNIT DIVIDED MAINLY INTO TWO SECTIONS, THE PYROLYSIS SECTION AND THE SEPARATION SECTION. IN THE PYROLYSIS SECTION, THE FEEDSTOCK IS THERMALLY CRACKED, FOLLOWED BY THE SEPARATION SECTION. THE GROUND FLARE CONSISTS OF A MULTIPOINT BURNER, STAGED PERFORMANCE HIGH PRESSURE FLARE SYSTEM. THIS FLARE WAS DESIGNED TO EFFICIENTLY CONTROL A VARIETY OF VENTING SCENARIOS FROM THIS PROCESS. THE HEATING VALUE OF STREAMS ROUTED TO THE FLARE CAN VARY FROM 10 TO OVER 38,000 MMBTU/HR. THE STREAMS ROUTED TO THE FLARE CAN INCREASE FROM A MINIMUM FLOW TO MAXIMUM FLOW IN ONLY A FEW SECONDS. RELATIVELY HIGH FLOW RATES TO THE FLARE CAN CONTINUE FOR MINUTES, HOURS, OR DAYS. PERIODS OF VERY LOW FLOW MAY CONTINUE FOR WEEKS AT A TIME. SINCE LARGE PORTIONS OF THE ETHYLENE CRACKER PROCESS ARE CHARACTERIZED BY ¿INTERMEDIATE¿ STREAMS IN THE GAS PHASE, A PARTICULARLY LARGE AMOUNT OF OPERATING EQUIPMENT AND ASSOCIATED PROCESS CONTROL SYSTEMS MUST WORK CONTINUOUSLY AND CLOSELY TOGETHER TO AVOID OPERATING SCENARIOS REQUIRING VENTING TO THE FLARE. A CERTAIN AMOUNT OF THIS TYPE OF FLARING IS INHERENT IN A WELL-RUN FACILITY OF THE SIZE, TYPE AND COMPLEXITY OF THE BFLP CRACKER.	BACT-PSD
				50.003	FRESH FEED CRACKING HEATER	Sulfur Dioxide (SO2)	1.6100 LB/H	BACT-PSD
				50.003	REACTOR REGENERATION EFFLUENT	Volatile Organic Compounds (VOC)	0.8400 LB/H	BACT-PSD
				50.003	REACTOR REGENERATION EFFLUENT	Carbon Monoxide	63.5500 LB/H	
				50.003	REACTOR REGENERATION EFFLUENT	Process Notes:		BACT-PSD
				50.003	DP FEED HEATER	Volatile Organic Compounds (VOC)	0.0100 LB/H	BACT-PSD
				50.003	DP FEED HEATER	Carbon Monoxide	0.6900 LB/H	BACT-PSD
				50.003	DP FEED HEATER	Nitrogen Oxides (NOx)	5.0100 LB/H	BACT-PSD
				50.003	DP FEED HEATER	Particulate matter, filterable < 10 µ (FPM10)	0.3800 LB/H	
				50.003	DP FEED HEATER	Process Notes:		BACT-PSD
				50.003	DP FEED HEATER	Sulfur Dioxide (SO2)	0.2200 LB/H	BACT-PSD
				50.003	DP REACTOR REGENERATION HEATER	Volatile Organic Compounds (VOC)	0.1700 LB/H	BACT-PSD
				50.003	DP REACTOR REGENERATION HEATER	Carbon Monoxide	0.2400 LB/H	BACT-PSD
				50.003	DP REACTOR REGENERATION HEATER	Nitrogen Oxides (NOx)	1.7300 LB/H	BACT-PSD
				50.003	DP REACTOR REGENERATION HEATER	Particulate matter, filterable < 10 µ (FPM10)	0.1300 LB/H	
				50.003	DP REACTOR REGENERATION HEATER	Process Notes:		BACT-PSD
				50.003	DP REACTOR REGENERATION HEATER	Sulfur Dioxide (SO2)	0.0700 LB/H	BACT-PSD
				50.003	AUXILARY BOILER	Volatile Organic Compounds (VOC)	0.0600 LB/H	BACT-PSD
				50.003	AUXILARY BOILER	Carbon Monoxide	15.6000 LB/H	BACT-PSD
				50.003	AUXILARY BOILER	Nitrogen Oxides (NOx)	13.6000 LB/H	BACT-PSD
				50.003	AUXILARY BOILER	Particulate matter, filterable < 10 µ (FPM10)	1.5800 LB/H	
				50.003	AUXILARY BOILER	Process Notes:		BACT-PSD
				50.003	AUXILARY BOILER	Sulfur Dioxide (SO2)	1.2400 LB/H	BACT-PSD
				50.003	GTG HRSG UNIT 1 GE FRAME 6B 310.4 MMBTU/H DUCT BURNER (WITH SCR)	Volatile Organic Compounds (VOC)	1.5800 LB/H	BACT-PSD
				50.003	GTG HRSG UNIT 1 GE FRAME 6B 310.4 MMBTU/H DUCT BURNER (WITH SCR)	Ammonia (NH3)	7.6100 LB/H	BACT-PSD
				50.003	GTG HRSG UNIT 1 GE FRAME 6B 310.4 MMBTU/H DUCT BURNER (WITH SCR)	Carbon Monoxide	53.9000 LB/H	BACT-PSD

RBLC Search Results: 50.002, 50.003

RBLC ID	PERMIT	PERMIT ISSUANC	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				50.003	GTG HRSG UNIT 1 GE FRAME 6B 310.4 MMBTU/H DUCT BURNER (WITH SCR)	Nitrogen Oxides (NOx)	15.3000 LB/H	BACT-PSD
				50.003	GTG HRSG UNIT 1 GE FRAME 6B 310.4 MMBTU/H DUCT BURNER (WITH SCR)	Particulate matter, filterable < 10 µ (FPM10)	5.4800 LB/H	
				50.003	GTG HRSG UNIT 1 GE FRAME 6B 310.4 MMBTU/H DUCT BURNER (WITH SCR)	Process Notes:		BACT-PSD
				50.003	GTG HRSG UNIT 1 GE FRAME 6B 310.4 MMBTU/H DUCT BURNER (WITH SCR)	Sulfur Dioxide (SO2)	4.4600 LB/H	BACT-PSD
				50.003	GTG HRSG UNIT 2 GE FRAME 6B 310.4 MMBTU/HR DUCT BURNER (WITH SCR)	Volatile Organic Compounds (VOC)	3.8500 LB/H	BACT-PSD
				50.003	GTG HRSG UNIT 2 GE FRAME 6B 310.4 MMBTU/HR DUCT BURNER (WITH SCR)	Ammonia (NH3)	7.6100 LB/H	BACT-PSD
				50.003	GTG HRSG UNIT 2 GE FRAME 6B 310.4 MMBTU/HR DUCT BURNER (WITH SCR)	Carbon Monoxide	53.9000 LB/H	BACT-PSD
				50.003	GTG HRSG UNIT 2 GE FRAME 6B 310.4 MMBTU/HR DUCT BURNER (WITH SCR)	Nitrogen Oxides (NOx)	24.1000 LB/H	BACT-PSD
				50.003	GTG HRSG UNIT 2 GE FRAME 6B 310.4 MMBTU/HR DUCT BURNER (WITH SCR)	Particulate matter, filterable < 10 µ (FPM10)	5.4800 LB/H	
				50.003	GTG HRSG UNIT 2 GE FRAME 6B 310.4 MMBTU/HR DUCT BURNER (WITH SCR)	Process Notes:		BACT-PSD
				50.003	GTG HRSG UNIT 2 GE FRAME 6B 310.4 MMBTU/HR DUCT BURNER (WITH SCR)	Sulfur Dioxide (SO2)	4.4600 LB/H	BACT-PSD
MI-0378	28-02A	01/05/2006	MARATHON PETROLEUM COMPANY MARATHON PETROLEUM DETROIT REFINERY	50.003	FCCU CATALYST REGENERATION	Volatile Organic Compounds (VOC)	3.8500 LB/H	BACT-PSD
				50.003	FCCU CATALYST REGENERATION	Carbon Monoxide	573.0000 T/YR	
WA-0325	PSD-05-01	11/16/2005	CONOCOPHILLIPS COMPANY FERNDALE REFINERY	50.003	SULFUR RECOVERY UBIT	Process Notes:	NOX REDUCING CATALYST ADDITIVE PROJECT. DURING THE CATALYTIC HYDROCARBON CRACKING PROCESS, CARBON DEPOSITS FORM ON THE SURFACE OF THE CATALYST. IN ORDER TO REUSE THE CATALYST, THE CARBON DEPOSITS MUST BE BURNED OFF. THE PROCESS OF BURNING CARBON OFF OF THE CATLAYST IS THE REGENERATION PROCESS.	BACT-PSD
				50.003	SULFUR RECOVERY UBIT	Carbon Monoxide	57.1000 PPMDV	BACT-PSD
				50.003	SULFUR RECOVERY UBIT	Nitrogen Oxides (NOx)	42.2000 PPMDV	
MN-0069	03700011-001	10/31/2005	FLINT HILLS RESOURCES FLINT HILLS PINE BEND REFINERY	50.003	FLUIDIZED BED CATALYTIC CRACKING UNIT (FCCU)	Process Notes:	SULFUR PLANT CAPACITY AND RELIABILITY WILL BE INCREASED BY CONSTRUCTING A SECOND SRU AND TAIL GAS TREATING UNIT (SRU/TGU). THE NEW SRU/TGU WILL BE INSTALLED IN A GREEN-FIELD SITE SOUTH OF THE EXISTING SRU/TGU AND WILL OPERATE IN PARALLEL WITH THE EXISTING UNIT. THE NEW SRU/TGU WILL HAVE THE CAPACITY TO OPERATE AT A MAXIMUM RECOVERY OF 60 LONG TONS PER DAY (LTPD) WITH OXYGEN INJECTION.	
				50.003	FLUIDIZED BED CATALYTIC CRACKING UNIT (FCCU)	Process Notes:		BACT-PSD
WA-0333	0AC773C	07/29/2005	CONOCOPHILLIPS COMPANY CONOCOPHILLIPS FERNDALE REFINERY	50.003	FLUIDIZED BED CATALYTIC CRACKING UNIT FCCU	Sulfur Dioxide (SO2)	25.0000 PPMVD@0%02	
				50.003	FLUIDIZED BED CATALYTIC CRACKING UNIT FCCU	Process Notes:		BACT-PSD
WA-0294	PSD-00-02 AMENDMENT 3	06/17/2005	CONOCO PHILLIPS 66 COMPANY FERNDALE REFINERY	50.003	FCCU AND CO BOILER	Sulfur Dioxide (SO2)	25.0000 PPMVD@0%02	BACT-PSD
				50.003	FCCU AND CO BOILER	Carbon Monoxide	33.3000 PPMDV @ 7% O2	BACT-PSD
				50.003	FCCU AND CO BOILER	Nitrogen Oxides (NOx)	127.0000 PPMDV @ 7% O2	
TX-0475	19168 / PSD-TX-760M6	05/09/2005	FORMOSA PLASTICS CORPORATION TEXAS FORMOSA POINT COMFORT PLANT	50.003	DECOKE DRUM (5)	Process Notes:	Process limited to operate 240 h/yr.	

RBLC Search Results: 50.002, 50.003

RBLC ID	PERMIT	PERMIT ISSUANC	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				50.003	DECOKE DRUM (5)	Carbon Monoxide	76.6000 LB/H	
				50.003	DECOKE DRUM (5)	Particulate matter, filterable < 10 µ (FPM10)	7.0500 LB/H	
				50.003	DECOKE DRUM (5)	Process Notes:	EMISSIONS ARE THE TOTAL OF THE FIVE DRUMS	
NJ-0064	PCP 050001	03/01/2005	AMERADA HESS CORPORATION HESS PORT READING REFINERY	50.003	PETROLEUM REFINING USING CATALYTIC CRACKING UNIT WITH REGENERATOR	Volatile Organic Compounds (VOC)	0.0100 LB/H	BACT-PSD
				50.003	PETROLEUM REFINING USING CATALYTIC CRACKING UNIT WITH REGENERATOR	Carbon Monoxide	160.0000 LB/H	BACT-PSD
				50.003	PETROLEUM REFINING USING CATALYTIC CRACKING UNIT WITH REGENERATOR	Nitrogen Oxides (NOx)	160.0000 LB/H	BACT-PSD
				50.003	PETROLEUM REFINING USING CATALYTIC CRACKING UNIT WITH REGENERATOR	Particulate matter, filterable < 10 µ (FPM10)	36.0000 LB/H	
				50.003	PETROLEUM REFINING USING CATALYTIC CRACKING UNIT WITH REGENERATOR	Process Notes:		BACT-PSD
WA-0332	OAC-623C	01/05/2005	SHELL OIL PRODUCTS US SHELL PUGET SOUND REFINERY	50.003	FLUIDIZED-BED CATALYTIC CRACKING UNIT (FCCU)	Sulfur Dioxide (SO2)	80.0000 LB/H	
				50.003	FLUIDIZED-BED CATALYTIC CRACKING UNIT (FCCU)	Process Notes:		BACT-PSD
AR-0089	868-AOP-R2	01/03/2005	LION OIL COMPANY LION OIL COMPANY REFINERY, EL DORADO	50.003	FLUIDIZED BED CATALYTIC CRACKING UNIT (FCCU)	Sulfur Dioxide (SO2)	25.0000 PPMVD@0%02	BACT-PSD
				50.003	FLUIDIZED BED CATALYTIC CRACKING UNIT (FCCU)	Carbon Monoxide	5000.0000 PPMVD@0%02	BACT-PSD
				50.003	FLUIDIZED BED CATALYTIC CRACKING UNIT (FCCU)	Particulate Matter (PM)	0.5000 LB/H	
				50.003	FLUIDIZED BED CATALYTIC CRACKING UNIT (FCCU)	Process Notes:		BACT-PSD
NJ-0063	PCP 030001	11/12/2004	CONOCO PHILLIPS COMPANY BAYWAY REFINERY	50.003	PETROLEUM REFINING USING FLUID CATALYTIC CRACKING UNIT WITH REGENERATOR AND CO-BOILERS	Sulfur Dioxide (SO2)	25.0000 PPMVD@0%02	BACT-PSD
				50.003	PETROLEUM REFINING USING FLUID CATALYTIC CRACKING UNIT WITH REGENERATOR AND CO-BOILERS	Carbon Monoxide	334.7000 LB/H	BACT-PSD
				50.003	PETROLEUM REFINING USING FLUID CATALYTIC CRACKING UNIT WITH REGENERATOR AND CO-BOILERS	Particulate matter, filterable < 10 µ (FPM10)	59.9000 LB/H	
				50.003	PETROLEUM REFINING USING FLUID CATALYTIC CRACKING UNIT WITH REGENERATOR AND CO-BOILERS	Process Notes:		BACT-PSD
LA-0215	2560-00001-V5	09/24/2004	MOTIVA ENTERPRISES LLC MOTIVA CONVENT REFINERY	50.003	FLUIDIZED BED CATALYTIC CRACKING UNIT (FCCU)	Sulfur Dioxide (SO2)	77.6000 LB/H	
				50.003	FLUIDIZED BED CATALYTIC CRACKING UNIT (FCCU)	Process Notes:		BACT-PSD
OK-0102	2003-336-C PSD	08/18/2004	CONOCOPHILLIPS PONCA CITY REFINERY	50.003	FCCU, (2)	Sulfur Dioxide (SO2)	25.0000 PPMVD@0%02	BACT-PSD
				50.003	FCCU, (2)	Carbon Monoxide	150.0000 PPMVD @ 0% O2	
				50.003	FCCU, (2)	Process Notes:	FCCU units 4 & 5, Unit 5 future max rate: 48,000 bbl/day	BACT-PSD
TX-0531	2162/PSD-TX-928	07/30/2004	SHELL OIL COMPANY SHELL DEER PARK REFINERY	50.003	FLUIDIZED-BED CATALYTIC CRACKING UNIT (FCCU)	Volatile Organic Compounds (VOC)	0	
				50.003	FLUIDIZED-BED CATALYTIC CRACKING UNIT (FCCU)	Process Notes:		BACT-PSD
LA-0214	2698(M-2)	02/04/2004	MATATHON PETROLEUM COMPANY, LLC MARATHON GARYVILLE REFINERY	50.003	FLUIDIZED BED CATALYTIC CRACKING UNIT (FCCU)	Sulfur Dioxide (SO2)	50.0000 PPMVD@0%02	
				50.003	FLUIDIZED BED CATALYTIC CRACKING UNIT (FCCU)	Process Notes:		BACT-PSD
NJ-0057	PCP 03-0005	10/11/2003	SUNOCO INC. EAGLE POINT FACILITY	50.003	FLUID CATALYTIC CRACKING UNIT	Sulfur Dioxide (SO2)	25.0000 PPMVD@0%02	BACT-PSD
				50.003	FLUID CATALYTIC CRACKING UNIT	Acid Mist / Gases	15.0000 LB/H	BACT-PSD
				50.003	FLUID CATALYTIC CRACKING UNIT	Particulate matter, filterable < 10 µ (FPM10)	30.0000 LB/H	
				50.003	FLUID CATALYTIC CRACKING UNIT	Process Notes:		BACT-PSD
OK-0089	98-172-C (M-12) (PSD)	06/09/2003	TPI PETROLEUM INC. TPI PETROLEUM INC., VALERO ARDMORE REFINERY	50.003	FCCU CATALYST RECEIVING HOPPER VENT	Sulfur Dioxide (SO2)	50.0000 PPMVD	BACT-PSD

RBLC Search Results: 50.002, 50.003

RBLC ID	PERMIT	PERMIT ISSUANC	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				50.003	FCCU CATALYST RECEIVING HOPPER VENT	Particulate matter, filterable < 10 µ (FPM10)	1.8800 T/YR	
				50.003	CRUDE UNIT FUGITIVE EMISSIONS	Process Notes:		
				50.003	CRUDE UNIT FUGITIVE EMISSIONS	Process Notes:		BACT-PSD
				50.003	REGENERATOR & THERMAL OXIDATION SYSTEM, FCCU NO. 1	Volatile Organic Compounds (VOC)	10000.0000 PPM	BACT-PSD
				50.003	REGENERATOR & THERMAL OXIDATION SYSTEM, FCCU NO. 1	Carbon Monoxide	49.9000 T/YR	BACT-PSD
				50.003	REGENERATOR & THERMAL OXIDATION SYSTEM, FCCU NO. 1	Nitrogen Oxides (NOx)	216.0000 T/YR	BACT-PSD
				50.003	REGENERATOR & THERMAL OXIDATION SYSTEM, FCCU NO. 1	Particulate matter, filterable < 10 µ (FPM10)	26.2000 T/YR	
				50.003	REGENERATOR & THERMAL OXIDATION SYSTEM, FCCU NO. 1	Process Notes:		BACT-PSD
				50.003	REGENERATOR, FCCU NO. 2	Sulfur Dioxide (SO2)	137.4000 T/YR	BACT-PSD
				50.003	REGENERATOR, FCCU NO. 2	Carbon Monoxide	4.2000 T/YR	BACT-PSD
				50.003	REGENERATOR, FCCU NO. 2	Nitrogen Oxides (NOx)	140.8000 T/YR	BACT-PSD
				50.003	REGENERATOR, FCCU NO. 2	Particulate matter, filterable < 10 µ (FPM10)	20.4000 T/YR	
				50.003	REGENERATOR, FCCU NO. 2	Process Notes:		BACT-PSD
OK-0092	98-172-C PSD	01/13/2003	TPI PETROLEUM VALERO ARDMORE REFINERY	50.003	FCCU REGENERATOR NO. 1	Sulfur Dioxide (SO2)	65.0000 T/YR	BACT-PSD
				50.003	FCCU REGENERATOR NO. 1	Carbon Monoxide	49.9000 T/YR	BACT-PSD
				50.003	FCCU REGENERATOR NO. 1	Nitrogen Oxides (NOx)	216.0000 T/YR	BACT-PSD
				50.003	FCCU REGENERATOR NO. 1	Particulate matter, filterable < 10 µ (FPM10)	26.2000 T/YR	
				50.003	FCCU REGENERATOR NO. 1	Process Notes:	THE FCCU REGENERATOR OPERATES IN TWO STAGES; THE FIRST REGENERATOR OPERATES IN AN OXYGEN DEFICIENT, PARTIAL BURN MODE; THE SECOND REGENERATOR IS A FULL BURN, OR HIGH TEMPERATURE REGENERATION.	BACT-PSD
				50.003	FCCU REGENERATOR NO. 2	Sulfur Dioxide (SO2)	137.4000 T/YR	BACT-PSD
				50.003	FCCU REGENERATOR NO. 2	Carbon Monoxide	4.2000 T/YR	BACT-PSD
				50.003	FCCU REGENERATOR NO. 2	Nitrogen Oxides (NOx)	140.8000 T/YR	BACT-PSD
				50.003	FCCU REGENERATOR NO. 2	Particulate matter, filterable < 10 µ (FPM10)	20.4000 T/YR	
				50.003	FCCU REGENERATOR NO. 2	Process Notes:	THE FCCU REGENERATOR OPERATES IN TWO STAGES; THE FIRST REGENERATOR OPERATES IN AN OXYGEN DEFICIENT, PARTIAL BURN MODE; THE SECOND REGENERATOR IS A FULL BURN, OR HIGH TEMPERATURE REGENERATION.	BACT-PSD
NJ-0065	PCP 020001	09/24/2002	VALERO REFINING COMPANY NJ VALERO	50.003	FLUID CATALYTIC CRACKING UNIT	Sulfur Dioxide (SO2)	65.0000 T/YR	BACT-PSD
				50.003	FLUID CATALYTIC CRACKING UNIT	Carbon Monoxide	34.4000 LB/H	Other Case-by-Case
				50.003	FLUID CATALYTIC CRACKING UNIT	Nitrogen Oxides (NOx)	22.6000 LB/H	BACT-PSD
				50.003	FLUID CATALYTIC CRACKING UNIT	Particulate matter, filterable < 10 µ (FPM10)	27.5000 LB/H	
				50.003	FLUID CATALYTIC CRACKING UNIT	Process Notes:		BACT-PSD
				50.003	FLUID CATALYTIC CRACKING UNIT	Sulfur Dioxide (SO2)	39.3000 LB/H	BACT-PSD
				50.003	FLUID CATALYTIC CRACKING UNIT	Total Suspended Particulates	27.5000 LB/H	Other Case-by-Case
IL-0079	01100084	08/05/2002	PREMCOR REFINING GROUP INC PREMCOR REFINING GROUP INC	50.003	FCCU	Volatile Organic Compounds (VOC)	9.8000 LB/H	BACT-PSD
				50.003	FCCU	Particulate Matter (PM)	1.0000 LB/1000 LB	
				50.003	FCCU	Process Notes:		BACT-PSD
OK-0059	2001-194-C PSD	07/01/2002	CONOCO INC PONCA CITY REFINERY	50.003	HYDROGENATION/NAPHTHA SPLITTER	Sulfur Dioxide (SO2)	25.0000 PPMV	BACT-PSD
				50.003	HYDROGENATION/NAPHTHA SPLITTER	Carbon Monoxide	0.0824 LB/MMBTU	BACT-PSD
				50.003	HYDROGENATION/NAPHTHA SPLITTER	Nitrogen Oxides (NOx)	0.0350 LB/MMBTU	BACT-PSD
				50.003	HYDROGENATION/NAPHTHA SPLITTER	Particulate matter, filterable < 10 µ (FPM10)	0.0075 LB/MMBTU	
				50.003	HYDROGENATION/NAPHTHA SPLITTER	Process Notes:		BACT-PSD
				50.003	HYDROGENATION/NAPHTHA SPLITTER	Sulfur Dioxide (SO2)	0	BACT-PSD
				50.003	ISOMERIZATION UNIT	Volatile Organic Compounds (VOC)	0.0054 LB/MMBTU	BACT-PSD
				50.003	ISOMERIZATION UNIT	Carbon Monoxide	0.0824 LB/MMBTU	BACT-PSD
				50.003	ISOMERIZATION UNIT	Nitrogen Oxides (NOx)	0.0350 LB/MMBTU	BACT-PSD
				50.003	ISOMERIZATION UNIT	Particulate matter, filterable < 10 µ (FPM10)	0.0075 LB/MMBTU	

RBLC Search Results: 50.002, 50.003

RBLC ID	PERMIT	PERMIT ISSUANC	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				50.003	ISOMERIZATION UNIT	Process Notes:		BACT-PSD
				50.003	ISOMERIZATION UNIT	Sulfur Dioxide (SO2)	0	BACT-PSD
TX-0235	38754	06/11/2002	VALERO REFINING COMPANY- CORPUS CHRISTI REFINERY VALERO REFINING COMPANY- CORPUS CHRISTI REFINERY	50.003	FIRED UNITS	Volatile Organic Compounds (VOC)	0.0054 LB/MMBTU	BACT-PSD
				50.003	FIRED UNITS	Benzene	26.0000 LB/H	BACT-PSD
				50.003	FIRED UNITS	Carbon Monoxide	1190.0000 LB/H	BACT-PSD
				50.003	FIRED UNITS	Nitrogen Oxides (NOx)	883.0000 LB/H	BACT-PSD
				50.003	FIRED UNITS	Particulate Matter (PM)	223.3000 LB/H	
				50.003	FIRED UNITS	Process Notes:	FIRED UNITS INCLUDE: CRUDE HEATER, VACUUM UNIT HEATER, DESALTER HEATER, HDS CHARGE HEATERS, HDS HEAVY OIL PREHEATER, ALKY FRACT REBOILER, HYDROGEN REFORMER HEATER, SULFTEN HEATER, BUTAMER HEATER, CRUDE PREFLASH HEATER, CRUDE STABILIZER HEATER, HCU HEATER, NHT HEATER, CRU HEATERS, BOILER 30-B-02, OLEFLEX HEATERS, RSU HEATER, SPLITTER REBOILER, 49H02, 49H05, 49HDIC6, VACUUM PF HEATER, MTBE FLARE, API SEPARATOR COMBUSTOR, TRUCK LOADING COMBUSTOR. THE API SEPARATOR COMBUSTOR SHALL ACHIEVE AT LEAST 98 PERCENT DESTRUCTION EFFICIENCY. THE VAPOR COMBUSTOR COMBUSTION TEMPERATURE SHALL BE MAINTAINED AT OR ABOVE 1600 DEGREES F (BASED ON A FIVE-MINUTE AVERAGING PERIOD) WHEN THE SEPARATOR IS IN SERVICE. THIS TEMPERATURE SHALL BE RECORDED AND THE RECORDS MAINTAINED ON-SITE. THE VAPOR COMBUSTOR OPERATING TEMPERATURE MAY BE LOWERED IF IT HAS BEEN TESTED AT THE LOWER TEMPERATURE IN ACCORDANCE WITH SPECIAL CONDITION TO DEMONSTRATE COMPLIANCE WITH THIS EMISSION LIMIT. RECORDKEEPING ASSOCIATED WITH THIS PERMIT CONDITION SHALL COMMENCE ON APRIL 1, 1999. NO VISIBLE EMISSIONS ARE ALLOWED FROM THE HEATERS. AIR CONTAMINANTS FROM THE HEATERS AND BOILERS TO BE TESTED FOR INCLUDE (BUT ARE NOT LIMITED TO) NITROGEN OXIDE AND CARBON MONOXIDE. SEE SPECIFICATIONS FOR NOX	BACT-PSD
				50.003	FIRED UNITS	Sulfur Dioxide (SO2)	474.0000 LB/H	BACT-PSD
TX-0379	PSD-TX-992	06/10/2002	EXXONMOBIL OIL CORPORATION EXXONMOBIL BEAUMONT REFINERY	50.003	FCCU CO BOILER STACK (PRESCRUBBER), 06STK-001	Volatile Organic Compounds (VOC)	4013.0000 LB/H	BACT-PSD
				50.003	FCCU CO BOILER STACK (PRESCRUBBER), 06STK-001	Carbon Monoxide	457.0000 LB/H	Other Case-by-Case
				50.003	FCCU CO BOILER STACK (PRESCRUBBER), 06STK-001	Nitrogen Oxides (NOx)	984.0000 LB/H	BACT-PSD
				50.003	FCCU CO BOILER STACK (PRESCRUBBER), 06STK-001	Particulate Matter (PM)	155.0000 LB/H	
				50.003	FCCU CO BOILER STACK (PRESCRUBBER), 06STK-001	Process Notes:		Other Case-by-Case
				50.003	FCCU CO BOILER STACK (PRESCRUBBER), 06STK-001	Sulfur Dioxide (SO2)	4610.0000 LB/H	N/A
				50.003	FCCU CO BOILER STACK (PRESCRUBBER), 06STK-001	Visible Emissions (VE)	15.0000 % OPACITY	Other Case-by-Case
				50.003	FCCU SCRUBBER STACK, 06STK-003	Volatile Organic Compounds (VOC)	11.5100 LB/H	BACT-PSD
				50.003	FCCU SCRUBBER STACK, 06STK-003	Carbon Monoxide	911.0300 LB/H	Other Case-by-Case
				50.003	FCCU SCRUBBER STACK, 06STK-003	Nitrogen Oxides (NOx)	984.0000 LB/H	BACT-PSD
				50.003	FCCU SCRUBBER STACK, 06STK-003	Particulate Matter (PM)	140.0000 LB/H	
				50.003	FCCU SCRUBBER STACK, 06STK-003	Process Notes:		Other Case-by-Case
				50.003	FCCU SCRUBBER STACK, 06STK-003	Sulfur Dioxide (SO2)	832.9400 LB/H	Other Case-by-Case
WA-0295	PSD-00-02 AMENDMENT 1	06/05/2002	PHILLIPS 66 COMPANY FERNDALE REFINERY	50.003	FCCU & CO BOILER	Volatile Organic Compounds (VOC)	12.1700 LB/H	BACT-PSD
				50.003	FCCU & CO BOILER	Nitrogen Oxides (NOx)	127.0000 PPMVD @ 7% O2	

RBLC Search Results: 50.002, 50.003

RBLC ID	PERMIT	PERMIT ISSUANC	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
CA-1118	397357	05/01/2002	BP WEST COAST PRODUCTS BP WEST COAST PRODUCTS	50.003	CATALYST REGENERATION-FLUIDIZED CATALYST CRACKING UNIT	Process Notes:	This process replaces the one listed in the previous permit. Process is limited to operate no more than 240 hours per year. The S ZORB process operates similarly to a standard hydrotreater unit using a desulfurization catalyst and similar equipment.	BACT-PSD
				50.003	CATALYST REGENERATION-FLUIDIZED CATALYST CRACKING UNIT	Ammonia (NH3)	10.0000 PPMVD@3%O2	BACT-PSD
				50.003	CATALYST REGENERATION-FLUIDIZED CATALYST CRACKING UNIT	Carbon Monoxide	500.0000 PPMVD@0%O2	BACT-PSD
				50.003	CATALYST REGENERATION-FLUIDIZED CATALYST CRACKING UNIT	Nitrogen Oxides (NOx)	72.0000 PPMVD@0%O2	BACT-PSD
				50.003	CATALYST REGENERATION-FLUIDIZED CATALYST CRACKING UNIT	Particulate Matter (PM)	0.1000 GR/SCF	
				50.003	CATALYST REGENERATION-FLUIDIZED CATALYST CRACKING UNIT	Process Notes:	EQUIP:, MFR:, TYPE:, MODEL:, FUNC EQUIP: SEE NOTE, FUEL_TYPE:, SCHED: CONTINUOUS, H/D:24,D/W:7,W/Y:52,NOTES: FUNCTION: FCCU CONVERTS HEAVY REF PROD TO LIGHTER PROD THAT CAN BE USED AS GASOLINE BLENDSTOCKS & FEEDSTOCKS TO ALKYLATION & POLYMERIZATION OPERATIONS. THERE IS A CATALYST REGEN SECT, IN WHICH COKED CATALYST IS REGEN BY BURNING OFF THE CARBON. THE EXIT GAS FROM THIS SECT PASSES THRU AN UNFIRED WASTE HEAT RECOVERY BOILER & THEN ESPS. CMTS APP. NO.:397357 ORIGINAL APPL FOR SCR UNIT WAS A/N 397358; A/N 412719 WAS FOR A MOD TO ALLOW BYPASSING OF THE UNIT WHEN NEEDED FOR REPAIRS. THE NOX,CO & SOX LIMITS IN THE PERMIT - BASED ON A LEGAL SETTLEMENT BETWEEN BP & USEPA (CONSENT DECREE CIVIL NO.2:96 CV 095 RL, 8/29/2001). THE NOX & SOX LIMITS - BASED ON 12-MONTH TEST USING A DENOX CATALYST & SOX ABSORBANT IN THE REGEN. THE CO LIMIT WAS AN NSPS (40CFR60, SUBPART J). THESE LIMITS ARE STILL BEING NEGOT W/EPA. THE FAC CONTACT STATED NOX IN THE SCR INLET FLUE GAS IS APPROX 40PPM & THAT NOX IN THE SCR OUTLET GAS NORMALLY RUNS AT ABOUT 2PPM. SOURCE TEST COMP REQUESTED THAT THE FAC REDUCE AMMONIA INJ FOR THE GASEOUS EMIS PORTION OF THE TEST TO BRING THE NOX INTO A MORE MEASUREABLE RANGE. THE NOX LEVEL IN THE OUTLET GAS IS EXPECTED TO APPROX DOUBLE OVER THE 5 YEAR EST LIFE OF	BACT-PSD
TN-0153	0101-08PC AND 1010-05PCR	04/03/2002	WILLIAMS REFINING & MARKETING, L.L.C. WILLIAMS REFINING & MARKETING, L.L.C.	50.003	FLUIDIZED CATALYTIC CRACKING UNIT	Sulfur Oxides (SOx)	236.0000 PPMVD@0%O2	BACT-PSD
				50.003	FLUIDIZED CATALYTIC CRACKING UNIT	Carbon Monoxide	50.0000 PPM	BACT-PSD
				50.003	FLUIDIZED CATALYTIC CRACKING UNIT	Nitrogen Oxides (NOx)	50.0000 PPM	BACT-PSD
				50.003	FLUIDIZED CATALYTIC CRACKING UNIT	Particulate matter, filterable < 10 µ (FPM10)	50.0000 PPM	
TX-0375	PSD-TX-985	03/14/2002	LYONDELL - CITGO REFINING, LP LYONDELL - CITGO REFINING, LP	50.003	FCCU CO BOILER WET GAS SCRUBBER	Process Notes:		Other Case-by-Case
				50.003	FCCU CO BOILER WET GAS SCRUBBER	Antimony / Antimony Compounds	0.0200 LB/H	
				50.003	FCCU CO BOILER WET GAS SCRUBBER	Process Notes:		N/A
NM-0045	H-01-4430	03/05/2002	NAVAJO REFINERY (SUBSIDIARY OF HOLLY) NAVAJO REFINERY, ARTESIA, NM	50.003	FLUIDIZED-BED CATALYTIC CRACKING UNIT (FCCU)	Visible Emissions (VE)	15.0000 % OPACITY	
				50.003	FLUIDIZED-BED CATALYTIC CRACKING UNIT (FCCU)	Process Notes:		BACT-PSD
TX-0341	PSD-TX-331M1 AND 9279	01/11/2002	DIAMOND SHAMROCK REFINING COMPANY LP THREE RIVERS REFINERY	50.003	FLUID CATALYTIC CRACKING UNIT, FCCU	Sulfur Dioxide (SO2)	25.0000 PPMVD @ 0% O2	N/A

RBLC Search Results: 50.002, 50.003

RBLC ID	PERMIT	PERMIT ISSUANC	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				50.003	FLUID CATALYTIC CRACKING UNIT, FCCU	Carbon Monoxide	500.0000 PPMV	BACT-PSD
				50.003	FLUID CATALYTIC CRACKING UNIT, FCCU	Nitrogen Oxides (NOx)	200.0000 PPM	N/A
				50.003	FLUID CATALYTIC CRACKING UNIT, FCCU	Particulate Matter (PM)	1.0000 LB/1000 LB COKE	
				50.003	FLUID CATALYTIC CRACKING UNIT, FCCU	Process Notes:		BACT-PSD
				50.003	FLUID CATALYTIC CRACKING UNIT, FCCU	Sulfur Dioxide (SO2)	300.0000 PPMV	N/A
LA-0166	PSD-LA-619	01/10/2002	ORION REFINING CORP (NOW VALERO) ORION REFINING CORP (NOW VALERO)	50.003	FCC REGENERATOR	Visible Emissions (VE)	20.0000 % OPACITY	BACT-PSD
				50.003	FCC REGENERATOR	Nitrogen Oxides (NOx)	444.0000 LB/H	BACT-PSD
				50.003	FCC REGENERATOR	Particulate matter, filterable < 10 µ (FPM10)	86.1000 LB/H	
				50.003	FCC REGENERATOR	Process Notes:	BELCO WET GAS SCRUBBER FOR SO2 AND PM10. HIGH TEMPERATURE REGENERATION FOR CO CONTROL.	BACT-PSD
TX-0346	PSD-TX-413 (M7)	10/05/2001	FLINT HILLS RESOURCES LP WEST REFINERY	50.003	FLUID CATALYTIC CRACKING UNIT (FCCU), 01BF102, AA-	Sulfur Dioxide (SO2)	450.0000 LB/H	BACT-PSD
				50.003	FLUID CATALYTIC CRACKING UNIT (FCCU), 01BF102, AA-	Carbon Monoxide	500.0000 PPMV	N/A
				50.003	FLUID CATALYTIC CRACKING UNIT (FCCU), 01BF102, AA-	Hydrogen Sulfide	0.1000 GR/DSCF	BACT-PSD
				50.003	FLUID CATALYTIC CRACKING UNIT (FCCU), 01BF102, AA-	Nitrogen Oxides (NOx)	550.0000 PPM	BACT-PSD
				50.003	FLUID CATALYTIC CRACKING UNIT (FCCU), 01BF102, AA-	Particulate Matter (PM)	1.0000 LB/1000 LB	
				50.003	FLUID CATALYTIC CRACKING UNIT (FCCU), 01BF102, AA-	Process Notes:	FUEL IS LIMITED TO NAT GAS, REFINERY FUEL GAS, FCCU REGENERATOR OFF-GAS, OR COMBINATIONS OF ANY OF THE THREE	BACT-PSD
				50.003	FLUID CATALYTIC CRACKING UNIT (FCCU), 01BF102, AA-	Sulfur Dioxide (SO2)	250.0000 PPMV	Other Case-by-Case
PA-0238	23-0001M	07/03/2001	SUNOCO INC. SUNOCO, INC.	50.003	FLUID CATALYTIC CRACKING UNIT	Visible Emissions (VE)	15.0000 % OPACITY	Other Case-by-Case
				50.003	FLUID CATALYTIC CRACKING UNIT	Carbon Monoxide	2.2000 LB/H	
TX-0359	PSD-TX-371 (M3)	05/23/2001	RELIANT ENERGY INC LIMESTONE ELECTRIC GENERATING STATION	50.003	FLUID CATALYTIC CRACK UNIT REGENERATOR VENT, V-20	Process Notes:		Other Case-by-Case
				50.003	FLUID CATALYTIC CRACK UNIT REGENERATOR VENT, V-20	Carbon Monoxide	22.8100 LB/H	Other Case-by-Case
				50.003	FLUID CATALYTIC CRACK UNIT REGENERATOR VENT, V-20	Nitrogen Oxides (NOx)	133.0000 LB/H	Other Case-by-Case
				50.003	FLUID CATALYTIC CRACK UNIT REGENERATOR VENT, V-20	Particulate Matter (PM)	66.4000 LB/H	Other Case-by-Case
				50.003	FLUID CATALYTIC CRACK UNIT REGENERATOR VENT, V-20	Particulate matter, filterable < 10 µ (FPM10)	33.2000 LB/H	
				50.003	FLUID CATALYTIC CRACK UNIT REGENERATOR VENT, V-20	Process Notes:		Other Case-by-Case
				50.003	FLUID CATALYTIC CRACK UNIT REGENERATOR VENT, V-20	Sulfur Dioxide (SO2)	341.0000 LB/H	N/A
				50.003	FLUID CATALYTIC CRACK UNIT REGENERATOR VENT, V-20	Visible Emissions (VE)	15.0000 % OPACITY	N/A
TX-0387	N-044	05/18/2001	ATOFINA PETROCHEMICALS ATOFINA PORT ARTHUR COMPLEX	50.003	TANK 930	Volatile Organic Compounds (VOC)	10.0000 LB/H	Other Case-by-Case
				50.003	TANK 930	Benzene	0.2300 LB/H	
				50.003	CONDENSATE SPLITTER HEATER	Process Notes:		Other Case-by-Case
				50.003	CONDENSATE SPLITTER HEATER	Carbon Monoxide	2.3200 LB/H	Other Case-by-Case
				50.003	CONDENSATE SPLITTER HEATER	Nitrogen Oxides (NOx)	16.8900 LB/H	Other Case-by-Case
				50.003	CONDENSATE SPLITTER HEATER	Particulate matter, filterable < 10 µ (FPM10)	1.2700 LB/H	
				50.003	CONDENSATE SPLITTER HEATER	Process Notes:		Other Case-by-Case
				50.003	CONDENSATE SPLITTER HEATER	Sulfur Dioxide (SO2)	5.9900 LB/H	Other Case-by-Case
				50.003	TK-800 EFR TANK	Volatile Organic Compounds (VOC)	0.5700 LB/H	
				50.003	TK-800 EFR TANK	Process Notes:		Other Case-by-Case
				50.003	TK-801 EFR TANK	Volatile Organic Compounds (VOC)	4.0500 LB/H	
				50.003	TK-801 EFR TANK	Process Notes:		Other Case-by-Case
				50.003	TK-802 EFR TANK	Volatile Organic Compounds (VOC)	4.1600 LB/H	
				50.003	TK-802 EFR TANK	Process Notes:		Other Case-by-Case
				50.003	TK-805 EFR TANK	Volatile Organic Compounds (VOC)	4.1600 LB/H	
				50.003	TK-805 EFR TANK	Process Notes:		Other Case-by-Case

RBLC Search Results: 50.002, 50.003

RBLC ID	PERMIT	PERMIT ISSUANC	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				50.003	TK-8077 IFR TANK	Volatile Organic Compounds (VOC)	2.7800 LB/H	
				50.003	TK-8077 IFR TANK	Process Notes:		Other Case-by-Case
				50.003	TK-811 IFR TANK (TOLUENE)	Volatile Organic Compounds (VOC)	1.2600 LB/H	
				50.003	TK-811 IFR TANK (TOLUENE)	Process Notes:		Other Case-by-Case
				50.003	TK-812 IFR (TOLUENE)	Volatile Organic Compounds (VOC)	0.6100 LB/H	
				50.003	TK-812 IFR (TOLUENE)	Process Notes:		Other Case-by-Case
				50.003	TK-813 IFR TANK (TOLUENE)	Volatile Organic Compounds (VOC)	0.5100 LB/H	
				50.003	TK-813 IFR TANK (TOLUENE)	Process Notes:		Other Case-by-Case
				50.003	VAPOR COMBUSTION UNIT	Volatile Organic Compounds (VOC)	0.5100 LB/H	Other Case-by-Case
				50.003	VAPOR COMBUSTION UNIT	Carbon Monoxide	0.2900 LB/H	Other Case-by-Case
				50.003	VAPOR COMBUSTION UNIT	Nitrogen Oxides (NOx)	0.0300 LB/H	
				50.003	VAPOR COMBUSTION UNIT	Process Notes:		Other Case-by-Case
				50.003	VAPOR COMBUSTION UNIT	Sulfur Dioxide (SO2)	0.0100 LB/YR	Other Case-by-Case
AR-0061	0868-AOP-R3	05/11/2001	LION OIL COMPANY LION OIL COMPANY REFINERY, EL DORADO	50.003	FLUIDIZED-BED CATALYTIC CRACKING UNIT (FCCU)	Volatile Organic Compounds (VOC)	0.0400 LB/H	BACT-PSD
				50.003	FLUIDIZED-BED CATALYTIC CRACKING UNIT (FCCU)	Nitrogen Oxides (NOx)	20.0000 PPM@0%O2	
TX-0289	01-40119	05/11/2001	MARATHON ASHLAND PETROLEUM (MAP) MAP TEXAS CITY PLANT	50.003	FLUIDIZED-BED CATALYTIC CRACKING UNIT (FCCU)	Process Notes:		LAER
				50.003	FLUIDIZED-BED CATALYTIC CRACKING UNIT (FCCU)	Nitrogen Oxides (NOx)	20.0000 PPMVD @ 0% O2	
LA-0150	PSD-LA-664	04/10/2001	WILLIAMS OLEFINS, LLC GEISMAR ETHYLENE PLANT	50.003	OLEFINS CRACKING HEATER 96	Process Notes:		BACT-PSD
				50.003	OLEFINS CRACKING HEATER 96	Nitrogen Oxides (NOx)	94.6000 T/YR	
				50.003	OLEFINS CRACKING HEATER 110	Process Notes:	SHALL OPERATE A CONTINUOUS FLUE GAS OXYGEN METER ON THE CRACKING HEATER	BACT-PSD
				50.003	OLEFINS CRACKING HEATER 110	Nitrogen Oxides (NOx)	94.6000 T/YR	
TX-0339	PSD-TX-302 (M2)	04/05/2001	EXXON MOBIL CHEMICAL COMPANY BAYTOWN OLEFINS PLANT	50.003	DECOKING STACK AF-01	Process Notes:	SHALL OPERATE A CONTINUOUS FLUE GAS OXYGEN METER ON THE CRACKING HEATER.	Other Case-by-Case
				50.003	DECOKING STACK AF-01	Carbon Monoxide	165.0000 LB/H	Other Case-by-Case
				50.003	DECOKING STACK AF-01	Particulate Matter (PM)	11.4000 LB/H	
				50.003	DECOKING STACK AF-01	Process Notes:		N/A
				50.003	DECOKING STACK BF-01	Visible Emissions (VE)	10.0000 % OPACITY	Other Case-by-Case
				50.003	DECOKING STACK BF-01	Carbon Monoxide	38.1000 LB/H	Other Case-by-Case
				50.003	DECOKING STACK BF-01	Particulate Matter (PM)	2.6000 LB/H	
				50.003	DECOKING STACK BF-01	Process Notes:		N/A
				50.003	DECOKING STACK CF-01	Visible Emissions (VE)	10.0000 % OPACITY	Other Case-by-Case
				50.003	DECOKING STACK CF-01	Carbon Monoxide	150.0000 LB/H	Other Case-by-Case
				50.003	DECOKING STACK CF-01	Particulate Matter (PM)	10.4000 LB/H	
				50.003	DECOKING STACK CF-01	Process Notes:		N/A
				50.003	(4) DECOKING STACKS, DF-01 THRU GF-01	Visible Emissions (VE)	10.0000 % OPACITY	Other Case-by-Case
				50.003	(4) DECOKING STACKS, DF-01 THRU GF-01	Carbon Monoxide	123.0000 LB/H	Other Case-by-Case
				50.003	(4) DECOKING STACKS, DF-01 THRU GF-01	Particulate Matter (PM)	8.5000 LB/H	
				50.003	(4) DECOKING STACKS, DF-01 THRU GF-01	Process Notes:		N/A
				50.003	DECOKING STACK HF-01	Visible Emissions (VE)	10.0000 % OPACITY	Other Case-by-Case
				50.003	DECOKING STACK HF-01	Carbon Monoxide	165.0000 LB/H	Other Case-by-Case
				50.003	DECOKING STACK HF-01	Particulate Matter (PM)	11.4000 LB/H	
				50.003	DECOKING STACK HF-01	Process Notes:		N/A
				50.003	(2) DECOKING STACKS FI-01 & JF-01	Visible Emissions (VE)	10.0000 % OPACITY	Other Case-by-Case
				50.003	(2) DECOKING STACKS FI-01 & JF-01	Carbon Monoxide	294.0000 LB/H	Other Case-by-Case
				50.003	(2) DECOKING STACKS FI-01 & JF-01	Particulate Matter (PM)	20.4000 LB/H	
				50.003	(2) DECOKING STACKS FI-01 & JF-01	Process Notes:		N/A
				50.003	(2) DECOKING STACKS, OF-01 & QF-01	Visible Emissions (VE)	10.0000 % OPACITY	Other Case-by-Case
				50.003	(2) DECOKING STACKS, OF-01 & QF-01	Carbon Monoxide	211.0000 LB/H	Other Case-by-Case
				50.003	(2) DECOKING STACKS, OF-01 & QF-01	Particulate Matter (PM)	14.6000 LB/H	

RBLC Search Results: 50.002, 50.003

RBLC ID	PERMIT	PERMIT ISSUANC	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				50.003	(2) DECOKING STACKS, OF-01 & QF-01	Process Notes:		N/A
				50.003	(6) DECOKING STACKS XAF-01 THRU XFF-01	Visible Emissions (VE)	10.0000 % OPACITY	Other Case-by-Case
				50.003	(6) DECOKING STACKS XAF-01 THRU XFF-01	Carbon Monoxide	211.0000 LB/H	Other Case-by-Case
				50.003	(6) DECOKING STACKS XAF-01 THRU XFF-01	Particulate Matter (PM)	14.6000 LB/H	Other Case-by-Case
				50.003	(6) DECOKING STACKS XAF-01 THRU XFF-01	Particulate matter, filterable < 10 µ (FPM10)	8.3500 LB/H	
				50.003	DECOKING STACK XGF-01	Process Notes:		Other Case-by-Case
				50.003	DECOKING STACK XGF-01	Carbon Monoxide	484.5000 LB/H	Other Case-by-Case
				50.003	DECOKING STACK XGF-01	Particulate Matter (PM)	34.9000 LB/H	Other Case-by-Case
				50.003	DECOKING STACK XGF-01	Particulate matter, filterable < 10 µ (FPM10)	19.9000 LB/H	
WA-0317	PSD-00-02	04/04/2001	TOSCO REFINING COMPANY FERNDALE REFINERY	50.003	FCCU & CO BOILER	Process Notes:		Other Case-by-Case
				50.003	FCCU & CO BOILER	Carbon Monoxide	33.3000 PPMDV	BACT-PSD
				50.003	FCCU & CO BOILER	Nitrogen Oxides (NOx)	127.0000 PPMDV	
TX-0395	PSD-861M1	05/23/2000	DIAMOND SHAMROCK REFINING COMPANY DIAMOND SHAMROCK MCKEE PLANT	50.003	NO. 1 REFORMER REGENERATION VENT	Process Notes:		BACT-PSD
				50.003	NO. 1 REFORMER REGENERATION VENT	Carbon Monoxide	3.4500 LB/H	
AK-0037	9923-AC010	03/21/2000	TESORO ALASKA COMPANY KENAI REFINERY	50.003	HYDROGEN REFORMER FURNACE, H1001	Process Notes:		Other Case-by-Case
				50.003	HYDROGEN REFORMER FURNACE, H1001	Carbon Monoxide	0.0400 LB/MMBTU	N/A
				50.003	HYDROGEN REFORMER FURNACE, H1001	Nitrogen Oxides (NOx)	0.0800 LB/MMBTU	N/A
				50.003	HYDROGEN REFORMER FURNACE, H1001	Particulate Matter (PM)	0.0050 LB/MMBTU	
				50.003	HYDROGEN REFORMER FURNACE, H1001	Process Notes:	*SOURCE BURNS NATURAL GAS, REFINERY GAS, AND LIQUID PETROLEUM GAS; NO INDICATION IS PROVIDED AS TO WHICH IS THE PRIMARY FUEL. DESIGN CAPACITY IS 152.3 MMBTU/H, BUT AUTHORIZED RATED CAPACITY IS 1 MMBTU/H.	BACT-PSD
				50.003	HYDROGEN REFORMER FURNACE, H1001	Sulfur Dioxide (SO2)	0	N/A
TX-0429	PSD-TX-822M2	02/23/2000	VALERO REFINING CO. - TEXAS VALERO REFINING CO. - TEXAS CITY	50.003	FCCU	Visible Emissions (VE)	20.0000 % OPACITY	BACT-PSD
				50.003	FCCU	Carbon Monoxide	500.0000 PPMV	Other Case-by-Case
				50.003	FCCU	Nitrogen Dioxide (NO2)	200.0000 PPMV	MACT
				50.003	FCCU	Particulate Matter (PM)	1.0000 LB/1000 LB	
				50.003	FCCU	Process Notes:		Other Case-by-Case
				50.003	FCCU	Sulfur Dioxide (SO2)	200.0000 PPMV	Other Case-by-Case
				50.003	REFORMERS (2)	Volatile Organic Compounds (VOC)	10.0000 PPMV	Other Case-by-Case
				50.003	REFORMERS (2)	Hydrochloric Acid	92.0000 % REDUCTION	
TX-0319	PSD-TX-930	09/10/1999	EXXON CO EXXON MOBIL BAYTOWN REFINERY	50.003	COKER FEED TANK 1022, TK1022	Process Notes:	REFORMER NO. 1 REGENERATOR AND CONTINUOUS CATALYTIC REFORMER (CCR) RENERATION VENT	
				50.003	COKER FEED TANK 1022, TK1022	Process Notes:		Other Case-by-Case
				50.003	FLUID CATALYTIC CRACKING UNIT 2, FCCU2	Volatile Organic Compounds (VOC)	1.0500 LB/H	Other Case-by-Case
				50.003	FLUID CATALYTIC CRACKING UNIT 2, FCCU2	Carbon Monoxide	338.0000 LB/H	Other Case-by-Case
				50.003	FLUID CATALYTIC CRACKING UNIT 2, FCCU2	Nitrogen Oxides (NOx)	315.4600 LB/H	Other Case-by-Case
				50.003	FLUID CATALYTIC CRACKING UNIT 2, FCCU2	Particulate Matter (PM)	92.0000 LB/H	
				50.003	FLUID CATALYTIC CRACKING UNIT 2, FCCU2	Process Notes:		Other Case-by-Case
				50.003	FLUID CATALYTIC CRACKING UNIT 2, FCCU2	Sulfur Dioxide (SO2)	423.0000 LB/H	Other Case-by-Case
				50.003	FLUID CATALYTIC CRACKING UNIT 3, FCCU3	Volatile Organic Compounds (VOC)	13.0000 LB/H	Other Case-by-Case
				50.003	FLUID CATALYTIC CRACKING UNIT 3, FCCU3	Carbon Monoxide	642.0000 LB/H	Other Case-by-Case

RBLC Search Results: 50.002, 50.003

RBLC ID	PERMIT	PERMIT ISSUANC	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				50.003	FLUID CATALYTIC CRACKING UNIT 3, FCCU3	Nitrogen Oxides (NOx)	510.0000 LB/H	Other Case-by-Case
				50.003	FLUID CATALYTIC CRACKING UNIT 3, FCCU3	Particulate Matter (PM)	130.0000 LB/H	
				50.003	FLUID CATALYTIC CRACKING UNIT 3, FCCU3	Process Notes:		Other Case-by-Case
				50.003	FLUID CATALYTIC CRACKING UNIT 3, FCCU3	Sulfur Dioxide (SO2)	240.0000 LB/H	Other Case-by-Case
CA-1004	326118	09/09/1999	TOSCO REFINING CO. TOSCO REFINING CO.	50.003	HYDROGEN REFORMING FURNACE	Volatile Organic Compounds (VOC)	12.0000 LB/H	BACT-PSD
				50.003	HYDROGEN REFORMING FURNACE	Ammonia (NH3)	20.0000 PPMVD @ 3% O2	BACT-PSD
				50.003	HYDROGEN REFORMING FURNACE	Nitrogen Oxides (NOx)	7.0000 PPMVD @ 3% O2	
				50.003	HYDROGEN REFORMING FURNACE	Process Notes:	MFR: HOWE BAKER ENGINEERS, TYPE: HYDROGEN REFORMING FURNACE, FUNCTION OF EQUIP: CONVERT STEAM PLUS HYDROCARBONS TO HYDROGEN RICH GAS, FUEL_TYPE: NATURAL GAS, SCHEDULE: CONTINUOUS, H/D: 24, D/W: 7, W/Y: 52, NOTES: FUEL IS PRESSURE-SWING ADSORPTION GAS SUPPLEMENTED BY NATURAL GAS. NOX LIMIT EXCEPT DURING START UP AND SHUT DOWN SOURCE TEST RESULTS: INLET NOX: 38.7 PPMVD @ 3% O2, 1-HR AVG. OUTLET NOX: <2.7 PPMVD @ 3% O2, 1-HR AVG. OUTLET CO: <6.7 PPMVD @ 3% O2, 1-HR AVG. OUTLET SO2: <6.7 PPMVD @ 3% O2, 1-HR AVG.; <3.65 LBS/HR OUTLET NH3: <2.7 PPMVD @ 3% O2, AVG. OF THREE 45- MINUTE TESTS. OUTLET NMHC: 6.4 PPMV AS METHANE, DRY @ 3% O2. OUTLET PM10: 0.0011 GRAINS/DSCF, 0.65 LBS/HR; EPA METHOD 201A, FRONT AND BACK HALF. 0.0004 GRAINS/DSCF, 0.27 LBS/HR, CORRECTED FOR ALUMINUM SULFATE.	BACT-PSD
CA-0999	344221	08/24/1999	EXXON MOBIL CORPORATION TORRANCE REFINERY	50.003	FLUIDIZED CATALYTIC CRACKING UNIT (FCCU)	Sulfur Oxides (SOx)	11.1000 LB/H	Other Case-by-Case
				50.003	FLUIDIZED CATALYTIC CRACKING UNIT (FCCU)	Ammonia (NH3)	0	Other Case-by-Case
				50.003	FLUIDIZED CATALYTIC CRACKING UNIT (FCCU)	Nitrogen Oxides (NOx)	0.0590 LB/MMBTU	
TX-0315	PSD-TX-474 (M5)	07/12/1999	EXXON COMPANY USA EXXON MOBIL BAYTOWN REFINERY	50.003	FLEXICOKING (FXK), F-301 & HC SKIMMER DRUM	Process Notes:	FCCU EXHAUSTS TO ELECTROSTATIC PRECIPITATOR (ESP), THEN TO SCR NOX REDUCTION UNIT, THEN A WASTE HEAT BOILER. ESP OPERATES AT 580-750F. AMMONIA IS ADDED UPSTREAM OF ESP FOR FLY ASH CONDITIONING.	BACT-PSD
				50.003	FLEXICOKING (FXK), F-301 & HC SKIMMER DRUM	Carbon Monoxide	6.2000 LB/H	N/A
				50.003	FLEXICOKING (FXK), F-301 & HC SKIMMER DRUM	Nitrogen Oxides (NOx)	7.7000 LB/H	N/A
				50.003	FLEXICOKING (FXK), F-301 & HC SKIMMER DRUM	Particulate Matter (PM)	1.9000 LB/H	
				50.003	FLEXICOKING (FXK), F-301 & HC SKIMMER DRUM	Process Notes:		N/A
				50.003	FLEXICOKING (FXK), F-301 & HC SKIMMER DRUM	Sulfur Dioxide (SO2)	49.8000 LB/H	Other Case-by-Case
TX-0397	PSD-302 M1	05/18/1999	EXXON CHEMICAL COMPANY EXXON BAYTOWN OLEFINS PLANT	50.003	AF-01 FURNACE	Volatile Organic Compounds (VOC)	0.2000 LB/H	BACT-PSD
				50.003	AF-01 FURNACE	Carbon Monoxide	2.9000 LB/H	BACT-PSD
				50.003	AF-01 FURNACE	Nitrogen Oxides (NOx)	62.0000 LB/H	BACT-PSD
				50.003	AF-01 FURNACE	Particulate Matter (PM)	1.1000 LB/H	
				50.003	AF-01 FURNACE	Process Notes:		BACT-PSD
				50.003	AF-01 FURNACE	Sulfur Dioxide (SO2)	1.6000 LB/H	BACT-PSD
				50.003	BF-01 FURNACE	Volatile Organic Compounds (VOC)	0.4500 LB/H	BACT-PSD
				50.003	BF-01 FURNACE	Carbon Monoxide	2.8000 LB/H	BACT-PSD
				50.003	BF-01 FURNACE	Particulate Matter (PM)	1.0500 LB/H	
				50.003	BF-01 FURNACE	Process Notes:		BACT-PSD
				50.003	BF-01 FURNACE	Sulfur Dioxide (SO2)	1.6000 LB/H	BACT-PSD
				50.003	CF-01 FURNACE	Volatile Organic Compounds (VOC)	0.4500 LB/H	BACT-PSD
				50.003	CF-01 FURNACE	Carbon Monoxide	2.9000 LB/H	BACT-PSD

RBLC Search Results: 50.002, 50.003

RBLC ID	PERMIT	PERMIT ISSUANC	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				50.003	CF-01 FURNACE	Nitrogen Oxides (NOx)	62.0000 LB/H	BACT-PSD
				50.003	CF-01 FURNACE	Particulate Matter (PM)	1.1000 LB/H	
				50.003	CF-01 FURNACE	Process Notes:		BACT-PSD
				50.003	CF-01 FURNACE	Sulfur Dioxide (SO2)	1.6000 LB/H	BACT-PSD
				50.003	DF-01 FURNACE	Volatile Organic Compounds (VOC)	0.4500 LB/H	BACT-PSD
				50.003	DF-01 FURNACE	Carbon Monoxide	2.9000 LB/H	BACT-PSD
				50.003	DF-01 FURNACE	Nitrogen Oxides (NOx)	62.0000 LB/H	BACT-PSD
				50.003	DF-01 FURNACE	Particulate Matter (PM)	1.1000 LB/H	
				50.003	DF-01 FURNACE	Process Notes:		BACT-PSD
				50.003	DF-01 FURNACE	Sulfur Dioxide (SO2)	1.6000 LB/H	BACT-PSD
				50.003	EF-01 FURNACE	Volatile Organic Compounds (VOC)	0.4500 LB/H	BACT-PSD
				50.003	EF-01 FURNACE	Carbon Monoxide	2.9000 LB/H	BACT-PSD
				50.003	EF-01 FURNACE	Nitrogen Oxides (NOx)	62.0000 LB/H	BACT-PSD
				50.003	EF-01 FURNACE	Particulate Matter (PM)	1.1000 LB/H	
				50.003	EF-01 FURNACE	Process Notes:		BACT-PSD
				50.003	EF-01 FURNACE	Sulfur Dioxide (SO2)	1.6000 LB/H	BACT-PSD
				50.003	FF-01 FURNACE	Volatile Organic Compounds (VOC)	0.4500 LB/H	BACT-PSD
				50.003	FF-01 FURNACE	Carbon Monoxide	2.9000 LB/H	BACT-PSD
				50.003	FF-01 FURNACE	Nitrogen Oxides (NOx)	62.0000 LB/H	BACT-PSD
				50.003	FF-01 FURNACE	Particulate Matter (PM)	1.1000 LB/H	
				50.003	FF-01 FURNACE	Process Notes:		BACT-PSD
				50.003	FF-01 FURNACE	Sulfur Dioxide (SO2)	1.6000 LB/H	BACT-PSD
				50.003	GF-01 FURRNACE	Volatile Organic Compounds (VOC)	0.4500 LB/H	BACT-PSD
				50.003	GF-01 FURRNACE	Carbon Monoxide	2.9000 LB/H	BACT-PSD
				50.003	GF-01 FURRNACE	Nitrogen Oxides (NOx)	62.0000 LB/H	BACT-PSD
				50.003	GF-01 FURRNACE	Particulate Matter (PM)	1.1000 LB/H	
				50.003	GF-01 FURRNACE	Process Notes:		BACT-PSD
				50.003	GF-01 FURRNACE	Sulfur Dioxide (SO2)	1.6000 LB/H	BACT-PSD
				50.003	DECOKING STACKS (7)	Volatile Organic Compounds (VOC)	0.4500 LB/H	BACT-PSD
				50.003	DECOKING STACKS (7)	Carbon Monoxide	120.0000 LB/H	BACT-PSD
				50.003	DECOKING STACKS (7)	Particulate Matter (PM)	8.3000 LB/H	
				50.003	HF-01 FURNACE	Process Notes:		BACT-PSD
				50.003	HF-01 FURNACE	Carbon Monoxide	1.9000 LB/H	BACT-PSD
				50.003	HF-01 FURNACE	Nitrogen Oxides (NOx)	41.2000 LB/H	BACT-PSD
				50.003	HF-01 FURNACE	Particulate Matter (PM)	0.7300 LB/H	
				50.003	HF-01 FURNACE	Process Notes:		BACT-PSD
				50.003	HF-01 FURNACE	Sulfur Dioxide (SO2)	1.0000 LB/H	BACT-PSD
				50.003	HF-01 DECOKING STACK	Volatile Organic Compounds (VOC)	0.3000 LB/H	BACT-PSD
				50.003	HF-01 DECOKING STACK	Carbon Monoxide	165.0000 LB/H	BACT-PSD
				50.003	HF-01 DECOKING STACK	Particulate Matter (PM)	11.4000 LB/H	
				50.003	IF-01& JF-01 FURNACES (2)	Process Notes:		BACT-PSD
				50.003	IF-01& JF-01 FURNACES (2)	Carbon Monoxide	2.8000 LB/H	BACT-PSD
				50.003	IF-01& JF-01 FURNACES (2)	Nitrogen Oxides (NOx)	40.9000 LB/H	BACT-PSD
				50.003	IF-01& JF-01 FURNACES (2)	Particulate Matter (PM)	1.0000 LB/H	
				50.003	IF-01& JF-01 FURNACES (2)	Process Notes:		BACT-PSD
				50.003	IF-01& JF-01 FURNACES (2)	Sulfur Dioxide (SO2)	1.6000 LB/H	BACT-PSD
				50.003	IF-01& JF-01 DECOKING STACK EACH	Volatile Organic Compounds (VOC)	0.4000 LB/H	BACT-PSD
				50.003	IF-01& JF-01 DECOKING STACK EACH	Carbon Monoxide	294.0000 LB/H	BACT-PSD
				50.003	IF-01& JF-01 DECOKING STACK EACH	Particulate Matter (PM)	20.4000 LB/H	
				50.003	OF-01 & QF-01 FURNACES (2) EACH	Process Notes:		BACT-PSD
				50.003	OF-01 & QF-01 FURNACES (2) EACH	Carbon Monoxide	2.5000 LB/H	BACT-PSD
				50.003	OF-01 & QF-01 FURNACES (2) EACH	Nitrogen Oxides (NOx)	24.0000 LB/H	BACT-PSD
				50.003	OF-01 & QF-01 FURNACES (2) EACH	Particulate Matter (PM)	1.0000 LB/H	
				50.003	OF-01 & QF-01 FURNACES (2) EACH	Process Notes:		BACT-PSD
				50.003	OF-01 & QF-01 FURNACES (2) EACH	Sulfur Dioxide (SO2)	0.2700 LB/H	BACT-PSD
				50.003	OF-01 & JF-01 DECOKING STACK	Volatile Organic Compounds (VOC)	0.3900 LB/H	BACT-PSD
				50.003	OF-01 & JF-01 DECOKING STACK	Carbon Monoxide	211.0000 LB/H	BACT-PSD
				50.003	OF-01 & JF-01 DECOKING STACK	Particulate Matter (PM)	14.6000 LB/H	

RBLC Search Results: 50.002, 50.003

RBLC ID	PERMIT	PERMIT ISSUANC	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				50.003	STORAGE TANKS XAF-01 THRU XFF-01	Process Notes:		BACT-PSD
				50.003	STORAGE TANKS XAF-01 THRU XFF-01	Carbon Monoxide	69.5000 T/YR	BACT-PSD
				50.003	STORAGE TANKS XAF-01 THRU XFF-01	Nitrogen Oxides (NOx)	399.1000 T/YR	BACT-PSD
				50.003	STORAGE TANKS XAF-01 THRU XFF-01	Particulate Matter (PM)	31.9000 T/YR	
				50.003	STORAGE TANKS XAF-01 THRU XFF-01	Process Notes:		BACT-PSD
				50.003	STORAGE TANKS XAF-01 THRU XFF-01	Sulfur Dioxide (SO2)	1.8000 T/YR	BACT-PSD
				50.003	FURNACES XAF-01 THRU XFF01, EACH	Volatile Organic Compounds (VOC)	11.3000 T/YR	BACT-PSD
				50.003	FURNACES XAF-01 THRU XFF01, EACH	Carbon Monoxide	2.9000 LB/H	BACT-PSD
				50.003	FURNACES XAF-01 THRU XFF01, EACH	Nitrogen Oxides (NOx)	26.4000 LB/H	BACT-PSD
				50.003	FURNACES XAF-01 THRU XFF01, EACH	Particulate Matter (PM)	1.3300 LB/H	
				50.003	FURNACES XAF-01 THRU XFF01, EACH	Process Notes:		BACT-PSD
				50.003	FURNACES XAF-01 THRU XFF01, EACH	Sulfur Dioxide (SO2)	1.8500 LB/H	BACT-PSD
				50.003	DECOKING STACKS XAF-01 THRU XFF-01	Volatile Organic Compounds (VOC)	2.0700 LB/H	BACT-PSD
				50.003	DECOKING STACKS XAF-01 THRU XFF-01	Carbon Monoxide	211.0000 LB/H	BACT-PSD
				50.003	DECOKING STACKS XAF-01 THRU XFF-01	Particulate Matter (PM)	14.6000 LB/H	BACT-PSD
				50.003	DECOKING STACKS XAF-01 THRU XFF-01	Particulate matter, filterable < 10 µ (FPM10)	8.3500 LB/H	
CA-0887	341340 (RECLAIM)	03/24/1999	CHEVRON PRODUCTS CO. CHEVRON PRODUCTS CO.	50.003	REFORMER FURNACE, BORN HEATERS	Process Notes:		BACT-PSD
				50.003	REFORMER FURNACE, BORN HEATERS	Carbon Monoxide	25.0000 PPMVD @ 3% O2	BACT-PSD
				50.003	REFORMER FURNACE, BORN HEATERS	Nitrogen Oxides (NOx)	5.0000 PPMVD @ 3% O2	Other Case-by-Case
				50.003	REFORMER FURNACE, BORN HEATERS	Particulate matter, filterable < 10 µ (FPM10)	4.9000 LB/H	
LA-0171	PSD-LA-584(M-1)	12/22/1998	CONOCO INC. LAKE CHARLES REFINERY	50.003	FCC REGENERATOR	Process Notes:	ARB RECORD # A330-907-99 BORN HEATERS REFORMER FURNACE LOCATED AT THE STEAM NAPHTHA REFORMER PLANT AND IS USED FOR HYDROGEN PRODUCTION. AS OF 06/27/2001 RESULTS ARE STILL BEING EVALUATED FOR COMPLIANCE TESTS DONE ON 01/10/2001. PERMIT SETS LIMITS FOR NOX, CO, AND PM. NO EMISSION LIMITS FOR SOX, REFINERY GAS S CONTENT NO GREATER THAN 100 PPMVD CALCULATED AS H2S. STANDARD EMISSIONS OF LB/1000LB ARE NOT AVAILABLE IN PM10.	BACT-PSD
				50.003	FCC REGENERATOR	Nitrogen Oxides (NOx)	129.6000 LB/H	Other Case-by-Case
				50.003	FCC REGENERATOR	Particulate matter, filterable < 10 µ (FPM10)	14.8000 LB/H	
				50.003	FCC REGENERATOR	Process Notes:	EMISSION POINT EP-41. THROUGHPUT NOT LISTED IN PERMIT.	Other Case-by-Case
TX-0361	PSD-TX-761M1	10/08/1998	EQUISTAR CHEMICALS, LP EQUISTAR CHEMICALS, LP	50.003	DECOKING CYCLONE, 9A	Sulfur Dioxide (SO2)	319.4000 LB/H	BACT-PSD
				50.003	DECOKING CYCLONE, 9A	Carbon Monoxide	29.2000 LB/H	
				50.003	DECOKING CYCLONE, 9A	Process Notes:		Other Case-by-Case
				50.003	DECOKING CYCLONE, 9A	Total Suspended Particulates	9.0000 LB/H	N/A
				50.003	DECOKING CYCLONE, 9B	Visible Emissions (VE)	10.0000 % OPACITY	BACT-PSD
				50.003	DECOKING CYCLONE, 9B	Carbon Monoxide	29.2000 LB/H	
				50.003	DECOKING CYCLONE, 9B	Process Notes:		Other Case-by-Case
				50.003	DECOKING CYCLONE, 9B	Total Suspended Particulates	9.0000 LB/H	N/A
TX-0237	36644, PSD-TX-903	09/08/1998	FINA OIL AND CHEMICAL COMPANY PORT ARTHUR REFINERY	50.003	BENZENE/TOLUENE PROCESS	Visible Emissions (VE)	10.0000 % OPACITY	
				50.003	BENZENE/TOLUENE PROCESS	Process Notes:	EMISSION POINT F-4	LAER

RBLC Search Results: 50.002, 50.003

RBLC ID	PERMIT	PERMIT ISSUANC	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
TX-0396	PSD-903	09/08/1998	FINA OIL & CHEMICAL COMPANY ATOFINA'S PORT ARTHUR COMPLEX	50.003	RECYCLE ETHANE CRACKING FURNACE	Volatile Organic Compounds (VOC)	0.2500 LB/H	BACT-PSD
				50.003	RECYCLE ETHANE CRACKING FURNACE	Carbon Monoxide	26.3700 LB/H	BACT-PSD
				50.003	RECYCLE ETHANE CRACKING FURNACE	Nitrogen Oxides (NOx)	27.4000 LB/H	BACT-PSD
				50.003	RECYCLE ETHANE CRACKING FURNACE	Particulate matter, filterable < 10 µ (FPM10)	1.7100 LB/H	
				50.003	RECYCLE ETHANE CRACKING FURNACE	Process Notes:		BACT-PSD
				50.003	RECYCLE ETHANE CRACKING FURNACE	Sulfur Dioxide (SO2)	1.1900 LB/H	BACT-PSD
				50.003	FRESH FEED CRACKING HEATERS (8)	Volatile Organic Compounds (VOC)	0.6500 LB/H	BACT-PSD
				50.003	FRESH FEED CRACKING HEATERS (8)	Carbon Monoxide	34.3000 LB/H	BACT-PSD
				50.003	FRESH FEED CRACKING HEATERS (8)	Nitrogen Oxides (NOx)	35.6300 LB/H	BACT-PSD
				50.003	FRESH FEED CRACKING HEATERS (8)	Particulate matter, filterable < 10 µ (FPM10)	2.2300 LB/H	
				50.003	FRESH FEED CRACKING HEATERS (8)	Process Notes:		BACT-PSD
				50.003	FRESH FEED CRACKING HEATERS (8)	Sulfur Dioxide (SO2)	1.5500 LB/H	BACT-PSD
				50.003	DP REACTOR FEED HEATER	Volatile Organic Compounds (VOC)	0.8500 LB/H	BACT-PSD
				50.003	DP REACTOR FEED HEATER	Nitrogen Oxides (NOx)	5.0100 LB/H	
				50.003	DP REACTOR REGENERATION HEATER	Process Notes:		BACT-PSD
				50.003	DP REACTOR REGENERATION HEATER	Nitrogen Oxides (NOx)	1.7300 LB/H	BACT-PSD
				50.003	DP REACTOR REGENERATION HEATER	Particulate matter, filterable < 10 µ (FPM10)	0.1300 LB/H	
				50.003	DP REACTOR REGENERATION HEATER	Process Notes:		BACT-PSD
				50.003	DP REACTOR REGENERATION HEATER	Sulfur Dioxide (SO2)	0.0700 LB/H	BACT-PSD
				50.003	CONDENSATE SPLITTER HEATER	Volatile Organic Compounds (VOC)	0.0600 LB/H	Other Case-by-Case
				50.003	CONDENSATE SPLITTER HEATER	Carbon Monoxide	2.3200 LB/H	BACT-PSD
				50.003	CONDENSATE SPLITTER HEATER	Nitrogen Oxides (NOx)	16.8900 LB/H	BACT-PSD
				50.003	CONDENSATE SPLITTER HEATER	Particulate matter, filterable < 10 µ (FPM10)	1.2700 LB/H	
				50.003	CONDENSATE SPLITTER HEATER	Process Notes:		BACT-PSD
				50.003	CONDENSATE SPLITTER HEATER	Sulfur Dioxide (SO2)	0.7300 LB/H	BACT-PSD
				50.003	DECOKING DRUM	Volatile Organic Compounds (VOC)	0.5700 LB/H	BACT-PSD
				50.003	DECOKING DRUM	Carbon Monoxide	720.0000 LB/H	BACT-PSD
				50.003	DECOKING DRUM	Particulate matter, filterable < 10 µ (FPM10)	78.7300 LB/H	
				50.003	STORAGE TANKS, INTERNAL FLOATING ROOFS (9)	Process Notes:		
				50.003	STORAGE TANKS, INTERNAL FLOATING ROOFS (9)	Process Notes:		BACT-PSD
				50.003	STORAGE TANKS WITH EXTERNAL FLOATING ROOF(5)	Volatile Organic Compounds (VOC)	0	
				50.003	STORAGE TANKS WITH EXTERNAL FLOATING ROOF(5)	Process Notes:		BACT-PSD
IN-0101	089-6924-00004	06/23/1998	BP WHITING BP WHITING (WHITING 600)	50.003	FLUIDIZED-BED CATALYTIC CRACKING UNIT (FCCU)	Volatile Organic Compounds (VOC)	0	LAER
				50.003	FLUIDIZED-BED CATALYTIC CRACKING UNIT (FCCU)	Nitrogen Oxides (NOx)	0 PPMVD @ 0% O2	
IL-0061	97030078	11/10/1997	MOBIL OIL CORPORATION MOBIL OIL CORPORATION	50.003	PREHEATER, FEED, CRUDE UNIT	Process Notes:		BACT-PSD
				50.003	PREHEATER, FEED, CRUDE UNIT	Nitrogen Oxides (NOx)	0.0330 LB/MMBTU	
TX-0241	32025	03/13/1997	BASIS PETROLEUM BASIS PETROLEUM	50.003	COKER PROJECT	Process Notes:	CRUDE UNIT FEED PREHEATER RELOCATED FROM ANOTHER PROCESSING UNIT AT THE REFINERY. LIMITED SUPPLEMENTAL USE OF OIL ALLOWED WHEN THERE IS INSUFFICIENT SUPPLY OF GASEOUS FUEL.	BACT-PSD
				50.003	COKER PROJECT	Carbon Monoxide	100.0000 PPM @ 3% O2	BACT-PSD
				50.003	COKER PROJECT	Nitrogen Oxides (NOx)	0.0600 LB/MMBTU	BACT-PSD

RBLC Search Results: 50.002, 50.003

RBLC ID	PERMIT	PERMIT ISSUANC	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				50.003	COKER PROJECT	Particulate matter, filterable < 10 µ (FPM10)	0	
				50.003	COKER PROJECT	Process Notes:	THROUGHPUT FOR 2 HEATERS IS 125 MMBTU/H AND 190 MMBTU/H. ALSO SEE PERMIT #22098.	BACT-PSD
				50.003	COKER PROJECT	Sulfur Dioxide (SO2)	0	LAER
MS-0032	1280-00058	09/24/1996	CHEVRON U.S.A. CHEVRON U.S.A.	50.003	PROCESS HEATERS	Volatile Organic Compounds (VOC)	0	BACT-PSD
				50.003	PROCESS HEATERS	Carbon Monoxide	0.0400 LB/MMBTU	BACT-PSD
				50.003	PROCESS HEATERS	Nitrogen Dioxide (NO2)	0.0370 LB/MMBTU	BACT-PSD
				50.003	PROCESS HEATERS	Particulate Matter (PM)	0.0200 LB/MMBTU	
				50.003	CATALYST REGENERATION VENT	Process Notes:		Other Case-by-Case
				50.003	CATALYST REGENERATION VENT	Nitrogen Oxides (NOx)	0	
LA-0090	PSD-LA-571 (M-1)	02/10/1995	TRANSAMERICAN REFINING CORPORATION TRANSAMERICAN REFINING CORPORATION	50.003	REGENERATOR, FCCU	Process Notes:		BACT-PSD
				50.003	REGENERATOR, FCCU	Carbon Monoxide	0.0100 NEGLIGIBLE	BACT-PSD
				50.003	REGENERATOR, FCCU	Nitrogen Oxides (NOx)	222.0000 LB/H	BACT-PSD
				50.003	REGENERATOR, FCCU	Particulate matter, filterable < 10 µ (FPM10)	76.0000 LB/H	
				50.003	REGENERATOR, FCCU	Process Notes:		BACT-PSD
				50.003	HEATERS, CHARGE - LESS THAN 100 MMBTU/H	Sulfur Dioxide (SO2)	154.0000 LB/H	BACT-PSD
				50.003	HEATERS, CHARGE - LESS THAN 100 MMBTU/H	Carbon Monoxide	5.8000 LB/H	BACT-PSD
				50.003	HEATERS, CHARGE - LESS THAN 100 MMBTU/H	Nitrogen Oxides (NOx)	7.7000 LB/H	BACT-PSD
				50.003	HEATERS, CHARGE - LESS THAN 100 MMBTU/H	Particulate matter, filterable < 10 µ (FPM10)	1.3000 LB/H	
				50.003	HEATERS, CHARGE - LESS THAN 100 MMBTU/H	Process Notes:	FUELS: NATURAL GAS/RFG	BACT-PSD
				50.003	HEATERS, CHARGE - LESS THAN 100 MMBTU/H	Sulfur Dioxide (SO2)	2.6000 LB/H	Other Case-by-Case
				50.003	HEATERS, CHARGE - MORE THAN 100 MMBTU/H	Volatile Organic Compounds (VOC)	0.2600 LB/H	BACT-PSD
				50.003	HEATERS, CHARGE - MORE THAN 100 MMBTU/H	Carbon Monoxide	7.4000 LB/H	BACT-PSD
				50.003	HEATERS, CHARGE - MORE THAN 100 MMBTU/H	Nitrogen Oxides (NOx)	15.0000 LB/H	BACT-PSD
				50.003	HEATERS, CHARGE - MORE THAN 100 MMBTU/H	Particulate matter, filterable < 10 µ (FPM10)	0.9300 LB/H	
				50.003	HEATERS, CHARGE - MORE THAN 100 MMBTU/H	Process Notes:		BACT-PSD
				50.003	HEATERS, CHARGE - MORE THAN 100 MMBTU/H	Sulfur Dioxide (SO2)	5.0000 LB/H	Other Case-by-Case
MN-0020	03700011-056	08/23/1994	KOCH REFINING COMPANY KOCH REFINING COMPANY	50.003	FCCU UNIT	Volatile Organic Compounds (VOC)	0.2600 LB/H	BACT-PSD
				50.003	FCCU UNIT	Nitrogen Oxides (NOx)	450.0000 PPM	
CA-0905	290738	07/24/1994	TOSCO REFINING CO. TOSCO REFINING CO.	50.003	REFORMING FURNACE, HOWE BAKER ENG. CALLIDUS	Process Notes:	FCCU = FLUID CATALYTIC CRACKING UNIT	BACT-PSD
				50.003	REFORMING FURNACE, HOWE BAKER ENG. CALLIDUS	Ammonia (NH3)	20.0000 PPMVD @ 3% O2	Other Case-by-Case
				50.003	REFORMING FURNACE, HOWE BAKER ENG. CALLIDUS	Carbon Monoxide	245.0000 LB/D	BACT-PSD
				50.003	REFORMING FURNACE, HOWE BAKER ENG. CALLIDUS	Nitrogen Oxides (NOx)	7.0000 PPMVD @ 3% O2	Other Case-by-Case
				50.003	REFORMING FURNACE, HOWE BAKER ENG. CALLIDUS	Particulate matter, filterable < 10 µ (FPM10)	84.0000 LB/D	
				50.003	REFORMING FURNACE, HOWE BAKER ENG. CALLIDUS	Process Notes:	ARB RECORD # A310-931-00. SOURCE TEST(03/27/97) HOWE BAKER ENGINEERING CALLIDUS MODEL LE-CRG LO-NOX HYDROGEN REFORMING FURNACE USED TO HEAT HYDROGEN FEED STREAMS TO REFORM THEM TO HYDROGEN AND CARBON DIOXIDE.	BACT-PSD
OH-0217	04-816	04/01/1994	BP OIL CO. TOLEDO REFINERY BP OIL CO. TOLEDO REFINERY	50.003	COKER (DELAYED)	Sulfur Oxides (SOx)	11.1000 LB/H	
				50.003	COKER (DELAYED)	Process Notes:		Other Case-by-Case
CA-1126	8407	12/27/1993	SHELL MARTINEZ REFINERY SHELL MARTINEZ REFINERY	50.003	SULFUR RECOVERY PLANT	Volatile Organic Compounds (VOC)	53.0000 LB/DRUM	

RBLC Search Results: 50.002, 50.003

RBLC ID	PERMIT	PERMIT ISSUANC	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				50.003	SULFUR RECOVERY PLANT	Process Notes:	EQUIP: SCOT UNIT AND TAILGAS THERMAL OXIDIZER, MFR: , TYPE: CLAUS PROCESS, MODEL: , FUNC EQUIP: CONVERT SULFUR COMPOUNDS FROM SOUR WATER TO ELEMENTAL SULFUR, FUEL_TYPE: , SCHEDULE: CONTINUOUS, H/D: 24, D/W: 7, W/Y: 52, NOTES: SOURCE TEST RESULTS: SCOT TAILGAS THERMAL OXIDIZER: 12.8 PPM SO2 AND <0.1 PPM H2S @ 0% O2; SOUR WATER STRIPPERS # 6 & 7 - 99.96% & 99.41% NH3 REMOVAL, 99.96% & 98.6% H2S REMOVAL	BACT-PSD
CA-0598	S-0286-0005-0	10/05/1993	CALIFORNIA SYNFUELS RESEARCH CORP CALIFORNIA SYNFUELS RESEARCH CORP	50.003	PSA HYDROGEN REFORMER FURNACE	Sulfur Oxides (SOx)	50.0000 PPM AT 0% O2	Other Case-by-Case
				50.003	PSA HYDROGEN REFORMER FURNACE	Nitrogen Oxides (NOx)	249.0000 LBM/DAY	
MT-0014	2161-07	07/28/1993	MONTANA REFINING COMPANY MONTANA REFINING COMPANY	50.003	FLUIDIZED CATALYTIC CRACKING	Process Notes:		
				50.003	FLUIDIZED CATALYTIC CRACKING	Process Notes:		BACT-PSD
LA-0085	PSD-LA-571	01/15/1993	TRANSAMERICAN REFINING CORPORATION (TARC) TRANSAMERICAN REFINING CORPORATION (TARC)	50.003	CATALYTIC CRACKING FCCU REGENERATOR	Volatile Organic Compounds (VOC)	234.5300 T/YR	BACT-PSD
				50.003	CATALYTIC CRACKING FCCU REGENERATOR	Carbon Monoxide	0	BACT-PSD
				50.003	CATALYTIC CRACKING FCCU REGENERATOR	Nitrogen Oxides (NOx)	325.4000 LB/H	BACT-PSD
				50.003	CATALYTIC CRACKING FCCU REGENERATOR	Particulate matter, filterable < 10 µ (FPM10)	77.5999 LB/H	
				50.003	CATALYTIC CRACKING FCCU REGENERATOR	Process Notes:		BACT-PSD
				50.003	CATALYTIC CRACKING FCCU REGENERATOR	Sulfur Dioxide (SO2)	510.9000 LB/H	LAER
				50.003	CATOFINS UNIT (CATALYTIC REFORMING)	Volatile Organic Compounds (VOC)	0	BACT-PSD
				50.003	CATOFINS UNIT (CATALYTIC REFORMING)	Carbon Monoxide	132.2000 LB/H	BACT-PSD
				50.003	CATOFINS UNIT (CATALYTIC REFORMING)	Nitrogen Oxides (NOx)	144.7000 LB/H	BACT-PSD
				50.003	CATOFINS UNIT (CATALYTIC REFORMING)	Particulate matter, filterable < 10 µ (FPM10)	2.4000 LB/H	
				50.003	CATOFINS UNIT (CATALYTIC REFORMING)	Process Notes:		BACT-PSD
				50.003	CATOFINS UNIT (CATALYTIC REFORMING)	Sulfur Dioxide (SO2)	3.0000 LB/H	LAER
				50.003	REGENERATOR, FCCU (NO.1)	Volatile Organic Compounds (VOC)	3.6000 LB/H	BACT-PSD
				50.003	REGENERATOR, FCCU (NO.1)	Carbon Monoxide	0 SEE NOTE 4	BACT-PSD
				50.003	REGENERATOR, FCCU (NO.1)	Nitrogen Oxides (NOx)	85.8000 LB/H	BACT-PSD
				50.003	REGENERATOR, FCCU (NO.1)	Particulate matter, filterable < 10 µ (FPM10)	20.5000 LB/H	
				50.003	REGENERATOR, FCCU (NO.1)	Process Notes:		BACT-PSD
				50.003	REGENERATOR, FCCU (NO.1)	Sulfur Dioxide (SO2)	59.6000 LB/H	LAER
				50.003	CATOFINS UNIT (REACTOR TRAIN: CATALYTIC REFORMING)	Volatile Organic Compounds (VOC)	0 SEE NOTE 5	BACT-PSD
				50.003	CATOFINS UNIT (REACTOR TRAIN: CATALYTIC REFORMING)	Carbon Monoxide	140.6000 LB/H	BACT-PSD
				50.003	CATOFINS UNIT (REACTOR TRAIN: CATALYTIC REFORMING)	Nitrogen Oxides (NOx)	154.0000 LB/H	BACT-PSD
				50.003	CATOFINS UNIT (REACTOR TRAIN: CATALYTIC REFORMING)	Particulate matter, filterable < 10 µ (FPM10)	2.5000 LB/H	
				50.003	CATOFINS UNIT (REACTOR TRAIN: CATALYTIC REFORMING)	Process Notes:		BACT-PSD
				50.003	CATOFINS UNIT (REACTOR TRAIN: CATALYTIC REFORMING)	Sulfur Dioxide (SO2)	3.2000 LB/H	LAER
OH-0202	04-538	02/29/1992	BP OIL CO., TOLEDO REFINERY BP OIL CO., TOLEDO REFINERY	50.003	COKER, DELAYED	Volatile Organic Compounds (VOC)	3.9000 LB/H	
				50.003	COKER, DELAYED	Process Notes:		Other Case-by-Case
LA-0078	PSD-LA-566	06/14/1991	MURPHY OIL U.S.A., INC. MURPHY OIL U.S.A., INC.	50.003	FCCU (FLUID CATALYTIC CRACKING UNIT)	Volatile Organic Compounds (VOC)	16.4000 LB/D	BACT-PSD
				50.003	FCCU (FLUID CATALYTIC CRACKING UNIT)	Carbon Monoxide	7.6000 LB/1000 LB COKE	BACT-PSD

RBLC Search Results: 50.002, 50.003

RBLC ID	PERMIT	PERMIT ISSUANC	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				50.003	FCCU (FLUID CATALYTIC CRACKING UNIT)	Particulate matter, filterable < 10 µ (FPM10)	1.0000 LB/1000 LB COKE	
VI-0003	NONE	12/14/1990	HESS OIL VIRGIN ISLAND CORP. - HOVIC HESS OIL VIRGIN ISLAND CORP. - HOVIC	50.003	FCC UNITS, 2	Process Notes:		BACT-PSD
				50.003	FCC UNITS, 2	Carbon Monoxide	432.0000 PPMV AT 7% O2	BACT-PSD
				50.003	FCC UNITS, 2	Nitrogen Oxides (NOx)	296.0000 PPMV AT 7% O2	BACT-PSD
				50.003	FCC UNITS, 2	Particulate Matter (PM)	1.0000 LB/MLB COKEBURNOFF	
				50.003	FCC UNITS, 2	Process Notes:		BACT-PSD
				50.003	FCC UNITS, 2	Sulfur Dioxide (SO2)	50.0000 PPMV AT 0% O2/90% CT	Other Case-by-Case
				50.003	FCC UNITS, 2	Visible Emissions (VE)	20.0000 %,54 MIN/H	BACT-PSD
TX-0220	18936	08/23/1989	FINA OIL & CHEMICAL CO. FINA OIL & CHEMICAL CO.	50.003	REGENERATOR UNIT	Volatile Organic Compounds (VOC)	7.4000 PPMV AT 7% O2	BACT-PSD
				50.003	REGENERATOR UNIT	Ammonia (NH3)	59.0000 T/YR	BACT-PSD
				50.003	REGENERATOR UNIT	Carbon Monoxide	1314.0000 T/YR	BACT-PSD
				50.003	REGENERATOR UNIT	Nitrogen Oxides (NOx)	867.0000 T/YR	BACT-PSD
				50.003	REGENERATOR UNIT	Particulate Matter (PM)	197.0000 T/YR	
				50.003	REGENERATOR UNIT	Process Notes:		BACT-PSD
				50.003	REGENERATOR UNIT	Sulfur Dioxide (SO2)	1647.0000 T/YR	N/A
				50.003	CATALYST TRANSPORT	Volatile Organic Compounds (VOC)	29.0000 T/YR	N/A
				50.003	CATALYST TRANSPORT	Particulate Matter (PM)	0.1000 T/YR	
TX-0157	9398	12/18/1984	KOCH REFINING CO. KOCH REFINING CO.	50.003	BOILER, CONVERTED CO	Process Notes:		Other Case-by-Case
				50.003	BOILER, CONVERTED CO	Carbon Monoxide	35.0000 LB/MMSCF	BACT-PSD
				50.003	BOILER, CONVERTED CO	Nitrogen Oxides (NOx)	0.1200 LB/MMBTU	Other Case-by-Case
				50.003	BOILER, CONVERTED CO	Particulate Matter (PM)	5.0000 LB/MMSCF	
				50.003	BOILER, CONVERTED CO	Process Notes:		BACT-PSD
				50.003	BOILER, CONVERTED CO	Sulfur Dioxide (SO2)	0.1000 GR H2S/DSCF FUEL CON	Other Case-by-Case
				50.003	BOILER, CO & FCCU FLUE GAS SCRUB	Volatile Organic Compounds (VOC)	2.8000 LB/MMSCF	Other Case-by-Case
				50.003	BOILER, CO & FCCU FLUE GAS SCRUB	Ammonia (NH3)	9.0000 EE-3 LB/MMBTU	BACT-PSD
				50.003	BOILER, CO & FCCU FLUE GAS SCRUB	Carbon Monoxide	1.1900 LB/MMBTU	BACT-PSD
				50.003	BOILER, CO & FCCU FLUE GAS SCRUB	Nitrogen Oxides (NOx)	1.7600 LB/MMBTU	BACT-PSD
				50.003	BOILER, CO & FCCU FLUE GAS SCRUB	Particulate Matter (PM)	0.2200 LB/MMBTU	
				50.003	BOILER, CO & FCCU FLUE GAS SCRUB	Process Notes:		BACT-PSD
				50.003	BOILER, CO & FCCU FLUE GAS SCRUB	Sulfur Dioxide (SO2)	1.2400 LB/MMBTU	Other Case-by-Case
LA-0022.A	PSD-LA-199(M-1)	11/21/1984	TENNECO OIL CO. TENNECO OIL CO.	50.003	REGENERATOR, FCCU	Volatile Organic Compounds (VOC)	1.6000 EE-3 LB/MMBTU	BACT-PSD
				50.003	REGENERATOR, FCCU	Carbon Monoxide	198.8800 LB/H	BACT-PSD
				50.003	REGENERATOR, FCCU	Nitrogen Dioxide (NO2)	136.6800 LB/H	
WA-0282	3	06/01/1984	ARCO PETROLEUM PRODUCTS CO ARCO PETROLEUM PRODUCTS CO	50.003	CALCINER, COKE, MATERIAL HANDLING	Process Notes:		BACT-PSD
				50.003	CALCINER, COKE, MATERIAL HANDLING	Nitrogen Oxides (NOx)	373.0000 T/YR	BACT-PSD
				50.003	CALCINER, COKE, MATERIAL HANDLING	Particulate Matter (PM)	0.0100 GR/DSCF @ 7% O2	
				50.003	CALCINER, COKE, MATERIAL HANDLING	Process Notes:	OTHER SCC CODE IS 30601201. MATERIAL HANDLING INCLUDES RAIL LOADING, SILO, TRANSPORTATION AND TOWER.	BACT-PSD
TX-0140	9348	11/23/1983	TEXAS OLEFINS CO. TEXAS OLEFINS CO.	50.003	POLYMERIZATION UNIT	Sulfur Dioxide (SO2)	160.0000 PPM @ 7% O2	BACT-PSD
				50.003	POLYMERIZATION UNIT	Carbon Monoxide	1.2600 T/YR	BACT-PSD
				50.003	POLYMERIZATION UNIT	Nitrogen Oxides (NOx)	8.4700 T/YR	BACT-PSD
				50.003	POLYMERIZATION UNIT	Particulate Matter (PM)	0.3500 T/YR	
				50.003	POLYMERIZATION UNIT	Process Notes:		BACT-PSD
WA-0010.A	N/C 2439	10/17/1983	SOUND REFINING, INC. SOUND REFINING, INC.	50.003	CRACKER, FLUIDIZED BED CATALYTIC	Volatile Organic Compounds (VOC)	54.8200 T/YR	BACT-PSD
				50.003	CRACKER, FLUIDIZED BED CATALYTIC	Carbon Monoxide	50.0000 PPM	BACT-PSD
				50.003	CRACKER, FLUIDIZED BED CATALYTIC	Nitrogen Oxides (NOx)	60.0000 PPM	BACT-PSD
				50.003	CRACKER, FLUIDIZED BED CATALYTIC	Particulate Matter (PM)	0.0100 GR/DSCF	
				50.003	CRACKER, FLUIDIZED BED CATALYTIC	Process Notes:		BACT-PSD

RBLC Search Results: 50.002, 50.003

RBLC ID	PERMIT	PERMIT ISSUANC	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
KY-0026	C-82-127 SEE NOTE	09/21/1982	ASHLAND OIL, INC. ASHLAND OIL, INC.	50.003	CRACKER, REDUCED CRUDE W/2 FB CO BOILERS	Sulfur Dioxide (SO2)	100.0000 PPM	BACT-PSD
				50.003	CRACKER, REDUCED CRUDE W/2 FB CO BOILERS	Carbon Monoxide	300.0000 PPM	BACT-PSD
				50.003	CRACKER, REDUCED CRUDE W/2 FB CO BOILERS	Nitrogen Oxides (NOx)	0.2000 LB/MMBTU	LAER
				50.003	CRACKER, REDUCED CRUDE W/2 FB CO BOILERS	Particulate Matter (PM)	68.0000 LB/H	
				50.003	CRACKER, REDUCED CRUDE W/2 FB CO BOILERS	Process Notes:		LAER
				50.003	CRACKER, REDUCED CRUDE W/2 FB CO BOILERS	Sulfur Dioxide (SO2)	250.0000 PPM	LAER
VI-0002	NONE	02/09/1982	HESS OIL - VIRGIN ISLANDS HESS OIL - VIRGIN ISLANDS	50.003	FCC UNIT, 2	Volatile Organic Compounds (VOC)	65.0000 T/YR	BACT-PSD
				50.003	FCC UNIT, 2	Carbon Monoxide	500.0000 PPM VOL	BACT-PSD
				50.003	FCC UNIT, 2	Nitrogen Oxides (NOx)	175.0000 PPM 2% O2	BACT-PSD
				50.003	FCC UNIT, 2	Particulate Matter (PM)	0.8000 LB/MLB COKE BURN	
				50.003	FCC UNIT, 2	Process Notes:		BACT-PSD
				50.003	FCC UNIT, 2	Sulfur Dioxide (SO2)	0.6000 % BY WT	BACT-PSD
LA-0022	PSD-LA-199	12/23/1981	TENNECO TENNECO	50.003	REGENERATOR, FCCU	Volatile Organic Compounds (VOC)	0	N/A
				50.003	REGENERATOR, FCCU	Carbon Monoxide	212.8000 LB/H	
TX-0052	PSD-TX-102M-1	10/15/1981	PHILLIPS PETROLEUM CO. PHILLIPS PETROLEUM CO.	50.003	BOILER, CO, 2	Process Notes:		BACT-PSD
				50.003	BOILER, CO, 2	Carbon Monoxide	0.0170 LB/MMBTU	BACT-PSD
				50.003	BOILER, CO, 2	Nitrogen Oxides (NOx)	1.9000 LB/MMBTU	BACT-PSD
				50.003	BOILER, CO, 2	Particulate Matter (PM)	0.3100 LB/MMBTU	
				50.003	BOILER, CO, 2	Process Notes:		BACT-PSD
				50.003	BOILER, CO, 2	Sulfur Dioxide (SO2)	0.1000 LB/MMBTU	BACT-PSD
CA-0045.B	27803	10/06/1981	CHEVRON CHEVRON	50.003	FCC	Volatile Organic Compounds (VOC)	0.0014 LB/MMBTU	BACT-PSD
				50.003	FCC	Particulate Matter (PM)	10.0000 LB/H	
TX-0034	TX-346	09/04/1981	DIAMOND SHAMROCK CORP. DIAMOND SHAMROCK CORP.	50.003	REGENERATOR STACK, FCCU, 2	Process Notes:		BACT-PSD
				50.003	REGENERATOR STACK, FCCU, 2	Carbon Monoxide	195.0000 LB/H	BACT-PSD
				50.003	REGENERATOR STACK, FCCU, 2	Nitrogen Oxides (NOx)	24.4000 LB/H	BACT-PSD
				50.003	REGENERATOR STACK, FCCU, 2	Particulate Matter (PM)	22.7000 LB/H	
				50.003	REGENERATOR STACK, FCCU, 2	Process Notes:		BACT-PSD
VI-0001	NONE	09/04/1981	VIRGIN ISLANDS REFINERY CORP. VIRGIN ISLANDS REFINERY CORP.	50.003	FCC UNIT	Sulfur Dioxide (SO2)	931.5000 LB/H	N/A
				50.003	FCC UNIT	Carbon Monoxide	565.0000 T/YR	BACT-PSD
				50.003	FCC UNIT	Nitrogen Oxides (NOx)	0.3000 LB/MMBTU OIL	LAER
				50.003	FCC UNIT	Particulate Matter (PM)	1.0000 LB/MLB COKE BURN	
				50.003	FCC UNIT	Process Notes:		N/A
				50.003	FCC UNIT	Sulfur Dioxide (SO2)	79.0000 T/YR	BACT-PSD
TX-0022	NONE	06/30/1981	FRIENDSWOOD REFIN. FRIENDSWOOD REFIN.	50.003	REGENERATOR, FCCU	Volatile Organic Compounds (VOC)	3247.0000 T/YR	BACT-PSD
				50.003	REGENERATOR, FCCU	Particulate Matter (PM)	24.0000 LB/H	
				50.003	BOILER COMPLEX, CO	Process Notes:		N/A
				50.003	BOILER COMPLEX, CO	Carbon Monoxide	175.5000 LB/H	BACT-PSD
				50.003	BOILER COMPLEX, CO	Nitrogen Oxides (NOx)	103.5000 LB/H	
				50.003	BOILER COMPLEX, CO	Process Notes:		N/A
CO-0008	NONE	06/24/1981	GARY WESTERN REFIN. GARY WESTERN REFIN.	50.003	HYDROCRACKER	Sulfur Dioxide (SO2)	48.0000 LB/H	BACT-PSD
				50.003	HYDROCRACKER	Nitrogen Oxides (NOx)	6.0200 LB/H	
LA-0032	NONE	05/08/1981	GOOD HOPE REFIN., INC. GOOD HOPE REFIN., INC.	50.003	REFORMER STABILIZER	Process Notes:		BACT-PSD
				50.003	REFORMER STABILIZER	Carbon Monoxide	0.4000 LB/H	BACT-PSD
				50.003	REFORMER STABILIZER	Nitrogen Oxides (NOx)	3.1000 LB/H	BACT-PSD
				50.003	REFORMER STABILIZER	Particulate Matter (PM)	0.3000 LB/H	
				50.003	REFORMER STABILIZER	Process Notes:		N/A
				50.003	REGENERATOR, FCCU	Sulfur Dioxide (SO2)	0.5000 LB/H	N/A
				50.003	REGENERATOR, FCCU	Carbon Monoxide	138.6000 LB/H	BACT-PSD
				50.003	REGENERATOR, FCCU	Nitrogen Oxides (NOx)	242.6000 LB/H	N/A
				50.003	REGENERATOR, FCCU	Particulate Matter (PM)	64.9000 LB/H	
				50.003	REGENERATOR, FCCU	Process Notes:		BACT-PSD
TX-0029	PSD-TX-364	05/08/1981	LONGVIEW REFIN. LONGVIEW REFIN.	50.003	REGENERATOR, FCC	Sulfur Dioxide (SO2)	761.7000 LB/H	BACT-PSD
				50.003	REGENERATOR, FCC	Carbon Monoxide	79.5000 LB/H	BACT-PSD
				50.003	REGENERATOR, FCC	Nitrogen Oxides (NOx)	32.7000 LB/H	BACT-PSD
				50.003	REGENERATOR, FCC	Particulate Matter (PM)	10.6000 LB/H	
				50.003	REGENERATOR, FCC	Process Notes:		N/A
TX-0041	NONE	05/08/1981	SABER REFIN. SABER REFIN.	50.003	REFORMER, 2	Sulfur Dioxide (SO2)	190.3000 LB/H	BACT-PSD

RBLC Search Results: 50.002, 50.003

RBLC ID	PERMIT	PERMIT ISSUANC	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				50.003	REFORMER, 2	Carbon Monoxide	0.0160 LB/MMBTU	BACT-PSD
				50.003	REFORMER, 2	Nitrogen Oxides (NOx)	0.1200 LB/MMBTU	BACT-PSD
				50.003	REFORMER, 2	Particulate Matter (PM)	0.0100 LB/MMBTU	
				50.003	REFORMER, 2	Process Notes:		N/A
				50.003	HEAVY OIL CRACKING UNIT	Sulfur Dioxide (SO2)	0.0140 LB/MMBTU	N/A
				50.003	HEAVY OIL CRACKING UNIT	Carbon Monoxide	178.0000 PPM	BACT-PSD
				50.003	HEAVY OIL CRACKING UNIT	Nitrogen Oxides (NOx)	203.0000 LB/H	BACT-PSD
				50.003	HEAVY OIL CRACKING UNIT	Particulate Matter (PM)	5.6000 LB/H	
				50.003	HEAVY OIL CRACKING UNIT	Process Notes:		N/A
TX-0039	NONE	12/10/1980	SIGMORE REFIN. CO. SIGMORE REFIN. CO.	50.003	REGENERATOR, FCCU	Sulfur Dioxide (SO2)	178.0000 PPM	BACT-PSD
				50.003	REGENERATOR, FCCU	Carbon Monoxide	90.1200 LB/H	BACT-PSD
				50.003	REGENERATOR, FCCU	Nitrogen Oxides (NOx)	37.0100 LB/H	N/A
				50.003	REGENERATOR, FCCU	Particulate Matter (PM)	12.0000 LB/H	
				50.003	REGENERATOR, FCCU	Process Notes:		BACT-PSD
TX-0060	TX-262	10/31/1980	NEDERLAND PROCESSING CO. NEDERLAND PROCESSING CO.	50.003	REGENERATOR, FCCU	Sulfur Dioxide (SO2)	205.4200 LB/H	N/A
				50.003	REGENERATOR, FCCU	Carbon Monoxide	73.5000 LB/H	BACT-PSD
				50.003	REGENERATOR, FCCU	Nitrogen Oxides (NOx)	31.5000 LB/H	N/A
				50.003	REGENERATOR, FCCU	Particulate Matter (PM)	8.4000 LB/H	
				50.003	REGENERATOR, FCCU	Process Notes:		BACT-PSD
				50.003	REGENERATOR, FCCU	Sulfur Dioxide (SO2)	42.7000 LB/H	BACT-PSD
NJ-0001	NONE	10/27/1980	EXXON CO., USA/BAYWAY REFIN. EXXON CO., USA/BAYWAY REFIN.	50.003	HYDROFINER POWER FORMER	Volatile Organic Compounds (VOC)	7.9000 LB/H	
				50.003	HYDROFINER POWER FORMER	Process Notes:		BACT-PSD
				50.003	HYDROFINER POWER FORMER	Sulfur Dioxide (SO2)	4416.6000 T/YR	LAER
TX-0062	TX-342	10/21/1980	GULF OIL CO. GULF OIL CO.	50.003	DELAYED COKING UNIT	Volatile Organic Compounds (VOC)	2.5000 T/YR	BACT-PSD
				50.003	DELAYED COKING UNIT	Nitrogen Oxides (NOx)	13.9000 LB/H	
				50.003	DELAYED COKING UNIT	Process Notes:		N/A
TX-0073	TX-236	10/15/1980	PETRACO VALLEY OIL & REFINING CO. PETRACO VALLEY OIL & REFINING CO.	50.003	REGENERATOR, FCCU	Sulfur Dioxide (SO2)	3.5000 LB/H	N/A
				50.003	REGENERATOR, FCCU	Carbon Monoxide	61.2000 LB/H	BACT-PSD
				50.003	REGENERATOR, FCCU	Nitrogen Oxides (NOx)	39.3000 LB/H	N/A
				50.003	REGENERATOR, FCCU	Particulate Matter (PM)	16.7000 LB/H	
				50.003	REGENERATOR, FCCU	Process Notes:		BACT-PSD
				50.003	REGENERATOR, FCCU	Sulfur Dioxide (SO2)	116.9000 LB/H	BACT-PSD
				50.003	REGENERATOR, PLATFORMER CAT.	Volatile Organic Compounds (VOC)	12.7000 LB/H	BACT-PSD
				50.003	REGENERATOR, PLATFORMER CAT.	Carbon Monoxide	0 TRACE	BACT-PSD
				50.003	REGENERATOR, PLATFORMER CAT.	Nitrogen Oxides (NOx)	0 TRACE	BACT-PSD
				50.003	REGENERATOR, PLATFORMER CAT.	Particulate Matter (PM)	0 TRACE	
				50.003	REGENERATOR, PLATFORMER CAT.	Process Notes:		BACT-PSD
				50.003	REGENERATOR, PLATFORMER CAT.	Sulfur Dioxide (SO2)	0.1000 LB/H	BACT-PSD
TX-0066	TX-243	10/14/1980	COASTAL STATES PETROLEUM COASTAL STATES PETROLEUM	50.003	REGENERATOR, FCCU	Volatile Organic Compounds (VOC)	0 TRACE	BACT-PSD
				50.003	REGENERATOR, FCCU	Carbon Monoxide	103.9000 LB/H	BACT-PSD
				50.003	REGENERATOR, FCCU	Nitrogen Oxides (NOx)	160.0000 LB/H	
CA-0016	LA-79-05	03/24/1980	CHAMPLIN PETROLEUM CO. CHAMPLIN PETROLEUM CO.	50.003	FCC UNIT	Process Notes:		
				50.003	FCC UNIT	Process Notes:		BACT-PSD
				50.003	ALKYLATION UNIT, HYDROFLUORIC ACID	Sulfur Dioxide (SO2)	84.0000 LB/H 2H AV	
				50.003	ALKYLATION UNIT, HYDROFLUORIC ACID	Process Notes:		BACT-PSD
				50.003	CATALYTIC POLYMERIZATION UNIT	Sulfur Dioxide (SO2)	230.0000 MG/DSCM H2S	
				50.003	CATALYTIC POLYMERIZATION UNIT	Process Notes:		BACT-PSD
TX-0061	NONE	03/12/1980	UNI OIL UNI OIL	50.003	FCC UNIT	Sulfur Dioxide (SO2)	230.0000 MG/DSCM H2S	N/A
				50.003	FCC UNIT	Carbon Monoxide	89.0999 LB/H	BACT-PSD
				50.003	FCC UNIT	Nitrogen Oxides (NOx)	29.4000 LB/H	N/A
				50.003	FCC UNIT	Particulate Matter (PM)	12.0000 LB/H	
				50.003	FCC UNIT	Process Notes:		N/A
				50.003	FCC UNIT	Sulfur Dioxide (SO2)	64.0999 LB/H	BACT-PSD
AZ-0001	NONE	03/03/1980	PROVIDENT ENERGY CO. PROVIDENT ENERGY CO.	50.003	FCC UNIT & CATALYIST REGEN.	Volatile Organic Compounds (VOC)	2.6000 LB/H	BACT-PSD
				50.003	FCC UNIT & CATALYIST REGEN.	Carbon Monoxide	0	BACT-PSD
				50.003	FCC UNIT & CATALYIST REGEN.	Particulate Matter (PM)	1.0000 LB/MLB COKE BURNED	
				50.003	FCC UNIT & CATALYIST REGEN.	Process Notes:		BACT-PSD
LA-0029	NONE	02/13/1980	VENTECH REFIN. VENTECH REFIN.	50.003	CATALYTIC REGEN	Sulfur Dioxide (SO2)	0	N/A
				50.003	CATALYTIC REGEN	Carbon Monoxide	104.7000 LB/H	BACT-PSD
				50.003	CATALYTIC REGEN	Nitrogen Oxides (NOx)	66.5999 LB/H	BACT-PSD
				50.003	CATALYTIC REGEN	Particulate Matter (PM)	14.6000 LB/H	

RBLC Search Results: 50.002, 50.003

RBLC ID	PERMIT	PERMIT ISSUANC	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				50.003	CATALYTIC REGEN	Process Notes:		N/A
				50.003	CATALYTIC REGEN	Sulfur Dioxide (SO2)	265.2000 LB/H	BACT-PSD
PA-0016	78PA14	01/25/1980	UNITED REFINING CO. UNITED REFINING CO.	50.003	FCC UNIT	Volatile Organic Compounds (VOC)	2.2000 LB/H	
				50.003	FCC UNIT	Process Notes:		BACT-PSD
LA-0038	NONE	01/18/1980	CITIES SERVICE CO. CITIES SERVICE CO.	50.003	C REFORMER, REGEN. VENT	Sulfur Dioxide (SO2)	350.0000 LB/H	BACT-PSD
				50.003	C REFORMER, REGEN. VENT	Nitrogen Oxides (NOx)	0	
				50.003	C REFORMER, REGEN. VENT	Process Notes:		BACT-PSD
TX-0064	TX-141	06/20/1979	TEXACO, INC. TEXACO, INC.	50.003	FCCU	Volatile Organic Compounds (VOC)	0	
				50.003	FCCU	Process Notes:		N/A
						Sulfur Dioxide (SO2)	406.3000 LB/H	

RBLC Search Results: Cooling Tower

RBLC ID	PERMIT	DATE	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
TX-0894	103832 AND N166M3	10/30/2020	CHEVRON PHILLIPS CHEMICAL SWEENY COMPLEX	99.009	Cooling Tower (EPN 81-05-9202)	Volatile Organic Compounds (VOC)	0	LAER
				99.009	Cooling Tower (EPN 81-05-9202)	Process Notes:	The cooling tower will have a non-contact design and will be monitored continuously for VOC equipment leaks in accordance with 30 TAC 115.764(a)(2) requirements. The leaks discovered from this monitoring shall be repaired as soon as possible, but no later than the next scheduled shutdown, or a shutdown triggered by a 0.08 ppmw cooling water VOC concentration.	
*TX-0905	160299, PSDTX1576, GHGPSDTX200	09/16/2020	DIAMOND GREEN DIESEL PORT ARTHUR FACILITY	99.009	COOLING TOWER	Particulate matter, total (TPM)	DRIFT ELIMINATORS 0.001%	BACT-PSD
				99.009	COOLING TOWER	Particulate matter, total < 10 µ (TPM10)	DRIFT ELIMINATORS 0.001%	BACT-PSD
				99.009	COOLING TOWER	Particulate matter, total < 2.5 µ (TPM2.5)	DRIFT ELIMINATORS 0.001%	BACT-PSD
				99.009	COOLING TOWER	Volatile Organic Compounds (VOC)	0.08 PPMW	BACT-PSD
				99.009	COOLING TOWER	Particulate matter, total (TPM)	1200 PPMW	BACT-PSD
				99.009	COOLING TOWER	Particulate matter, total < 10 µ (TPM10)	1200 PPMW	BACT-PSD
				99.009	COOLING TOWER	Particulate matter, total < 2.5 µ (TPM2.5)	Non-contact design and DRIFT ELIMINATORS	BACT-PSD
*TX-0904	156571, PSDTX1564, GHGPSDTX195	09/09/2020	MOTIVA POLYETHYLENE MANUFACTURING COMPLEX	99.009	COOLING TOWER	Volatile Organic Compounds (VOC)	0.08 PPMW	BACT-PSD
				99.009	COOLING TOWER	Particulate matter, total (TPM)	1200 PPMW	BACT-PSD
				99.009	COOLING TOWER	Particulate matter, total < 10 µ (TPM10)	1200 PPMW	BACT-PSD
				99.009	COOLING TOWER	Particulate matter, total < 2.5 µ (TPM2.5)	0	BACT-PSD
*TX-0889	N166M2, PSDTX1566, GHGPSDTX196	08/08/2020	SWEENY OLD OCEAN FACILITIES	99.009	cooling tower	Carbon Dioxide Equivalent (CO2e)		BACT-PSD
				99.009	cooling tower	Process Notes:	Good operational practices, non-contact	
KY-0110	V-20-001	07/23/2020	NUCOR STEEL BRANDENBURG	99.009	EP 09-01 - Melt Shop ICW Cooling Tower	Particulate matter, filterable (FPM)	0.36 LB/HR; 1.56 TON/YR (12-MONTH ROLLING)	BACT-PSD
				99.009	EP 09-01 - Melt Shop ICW Cooling Tower	Particulate matter, total < 10 µ (TPM10)	0.27 LB/HR; 1.16 TON/YR (12-MONTH ROLLING)	BACT-PSD
				99.009	EP 09-01 - Melt Shop ICW Cooling Tower	Particulate matter, total < 2.5 µ (TPM2.5)	0.0008 LB/HR; 0.0035 TON/YR (12-MONTH ROLLING)	BACT-PSD
				99.009	EP 09-01 - Melt Shop ICW Cooling Tower	Process Notes:	Total dissolved solids (TDS) concentration shall not exceed 1,365 ppm.	
				99.009	EP 09-02 - Melt Shop DCW Cooling Tower	Particulate matter, filterable (FPM)	0.04 LB/HR; 0.19 TON/YR (12-MONTH ROLLING)	BACT-PSD
				99.009	EP 09-02 - Melt Shop DCW Cooling Tower	Particulate matter, total < 10 µ (TPM10)	0.03 LB/HR; 0.14 TON/YR (12-MONTH ROLLING)	BACT-PSD
				99.009	EP 09-02 - Melt Shop DCW Cooling Tower	Particulate matter, total < 2.5 µ (TPM2.5)	0.0001 LB/HR; 0.0004 TON/YR (12-MONTH ROLLING)	BACT-PSD
				99.009	EP 09-02 - Melt Shop DCW Cooling Tower	Process Notes:	Total dissolved solids (TDS) concentration shall not exceed 1,495 ppm.	
				99.009	EP 09-03 - Rolling Mill ICW Cooling Tower	Particulate matter, filterable (FPM)	0.06 LB/HR; 0.25 TON/YR (12-MONTH ROLLING)	BACT-PSD
				99.009	EP 09-03 - Rolling Mill ICW Cooling Tower	Particulate matter, total < 10 µ (TPM10)	0.04 LB/HR; 0.19 TON/YR (12-MONTH ROLLING)	BACT-PSD
				99.009	EP 09-03 - Rolling Mill ICW Cooling Tower	Particulate matter, total < 2.5 µ (TPM2.5)	0.0001 LB/HR; 0.0006 TON/YR (12-MONTH ROLLING)	BACT-PSD
				99.009	EP 09-03 - Rolling Mill ICW Cooling Tower	Process Notes:	Total dissolved solids (TDS) concentration shall not exceed 1,365 ppm.	
				99.009	EP 09-04 - Rolling Mill DCW Cooling Tower	Particulate matter, filterable (FPM)	0.17 LB/HR; 0.75 TON/YR (12-MONTH ROLLING)	BACT-PSD
				99.009	EP 09-04 - Rolling Mill DCW Cooling Tower	Particulate matter, total < 10 µ (TPM10)	0.12 LB/HR; 0.51 TON/YR (12-MONTH ROLLING)	BACT-PSD
				99.009	EP 09-04 - Rolling Mill DCW Cooling Tower	Particulate matter, total < 2.5 µ (TPM2.5)	0.0004 LB/HR; 0.0016 TON/YR (12-MONTH ROLLING)	BACT-PSD
				99.009	EP 09-04 - Rolling Mill DCW Cooling Tower	Process Notes:	Total dissolved solids (TDS) concentration shall not exceed 1,495 ppm.	
				99.009	EP 09-05 - Rolling Mill Quench/ACC Cooling Tower	Particulate matter, filterable (FPM)	0.78 LB/HR; 3.41 TON/YR (12-MONTH ROLLING)	BACT-PSD
				99.009	EP 09-05 - Rolling Mill Quench/ACC Cooling Tower	Particulate matter, total < 10 µ (TPM10)	0.54 LB/HR; 2.35 TON/YR (12-MONTH ROLLING)	BACT-PSD
				99.009	EP 09-05 - Rolling Mill Quench/ACC Cooling Tower	Particulate matter, total < 2.5 µ (TPM2.5)	0.0017 LB/HR; 0.0075 TON/YR (12-MONTH ROLLING)	BACT-PSD
				99.009	EP 09-05 - Rolling Mill Quench/ACC Cooling Tower	Process Notes:	Total dissolved solids (TDS) concentration shall not exceed 1,729 ppm.	
				99.009	EP 09-06 - Light Plate Quench DCW Cooling Tower	Particulate matter, filterable (FPM)	0.06 LB/HR; 0.26 TON/YR (12-MONTH ROLLING)	BACT-PSD
				99.009	EP 09-06 - Light Plate Quench DCW Cooling Tower	Particulate matter, total < 10 µ (TPM10)	0.04 LB/HR; 0.19 TON/YR (12-MONTH ROLLING)	BACT-PSD
				99.009	EP 09-06 - Light Plate Quench DCW Cooling Tower	Particulate matter, total < 2.5 µ (TPM2.5)	0.0001 LB/HR; 0.0006 TON/YR (12-MONTH ROLLING)	BACT-PSD
				99.009	EP 09-06 - Light Plate Quench DCW Cooling Tower	Process Notes:	Total dissolved solids (TDS) concentration shall not exceed 1,495 ppm.	
				99.009	EP 09-07 - Heavy Plate Quench DCW Cooling Tower	Particulate matter, filterable (FPM)	0.02 LB/HR; 0.1 TON/YR (12-MONTH ROLLING)	BACT-PSD

RBLC Search Results: Cooling Tower

RBLC ID	PERMIT	DATE	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				99.009	EP 09-07 - Heavy Plate Quench DCW Cooling Tower	Particulate matter, total < 10 µ (TPM10)	0.02 LB/HR; 0.07 TON/YR (12-MONTH ROLLING)	BACT-PSD
				99.009	EP 09-07 - Heavy Plate Quench DCW Cooling Tower	Particulate matter, total < 2.5 µ (TPM2.5)	0.0001 LB/HR; 0.0002 TON/YR (12-MONTH ROLLING)	BACT-PSD
				99.009	EP 09-07 - Heavy Plate Quench DCW Cooling Tower	Process Notes:	Total dissolved solids (TDS) concentration shall not exceed 1,495 ppm.	
				99.009	EP 09-08 - Air Separation Plant Cooling Tower	Particulate matter, filterable (FPM)	0.1 LB/HR; 0.46 TON/YR (12-MONTH ROLLING)	BACT-PSD
				99.009	EP 09-08 - Air Separation Plant Cooling Tower	Particulate matter, total < 10 µ (TPM10)	0.08 LB/HR; 0.34 TON/YR (12-MONTH ROLLING)	BACT-PSD
				99.009	EP 09-08 - Air Separation Plant Cooling Tower	Particulate matter, total < 2.5 µ (TPM2.5)	0.0002 LB/HR; 0.001 TON/YR (12-MONTH ROLLING)	BACT-PSD
				99.009	EP 09-08 - Air Separation Plant Cooling Tower	Process Notes:	Total dissolved solids (TDS) concentration shall not exceed 1,495 ppm.	
TX-0888	155952 PSDTX1556 GHGPSDTX192	04/23/2020	ORANGE POLYETHYLENE PLANT	99.009	COOLING TOWERS	Volatile Organic Compounds (VOC)	0.7 LB/MMGAL	BACT-PSD
				99.009	COOLING TOWERS	Carbon Dioxide Equivalent (CO2e)	Use of a non-contact cooling tower design and monthly monitoring.	BACT-PSD
				99.009	COOLING TOWERS	Particulate matter, total (TPM)	DRIFT ELIMINATORS	BACT-PSD
				99.009	COOLING TOWERS	Particulate matter, total < 10 µ (TPM10)	DRIFT ELIMINATORS	BACT-PSD
				99.009	COOLING TOWERS	Particulate matter, total < 2.5 µ (TPM2.5)	DRIFT ELIMINATORS	BACT-PSD
TX-0886	106921, N270	03/31/2020	MONT BELVIEU NGL FRACTIONATION UNIT	99.009	COOLING TOWER	Volatile Organic Compounds (VOC)	0.7 LB/MMGAL (HOURLY)	LAER
TX-0876	PSDTX1546 AND GHGPSDTX186	02/06/2020	PORT ARTHUR ETHANE CRACKER UNIT	99.009	COOLING TOWER	Volatile Organic Compounds (VOC)	0.08 PPMW	BACT-PSD
				99.009	COOLING TOWER	Particulate matter, filterable (FPM)	1200 PPM (TDS)	BACT-PSD
				99.009	COOLING TOWER	Particulate matter, total < 10 µ (TPM10)	1200 PPM (TDS)	BACT-PSD
				99.009	COOLING TOWER	Particulate matter, total < 2.5 µ (TPM2.5)	1200 PPM (TDS)	BACT-PSD
TX-0873	PSDTX1062M3 AND GHGPSDTX121M1	02/04/2020	PORT ARTHUR REFINERY	99.009	COOLING TOWER	Volatile Organic Compounds (VOC)	0	BACT-PSD
				99.009	COOLING TOWER	Particulate matter, total (TPM)	0	BACT-PSD
				99.009	COOLING TOWER	Particulate matter, total < 10 µ (TPM10)	0	BACT-PSD
				99.009	COOLING TOWER	Particulate matter, total < 2.5 µ (TPM2.5)	0	BACT-PSD
TX-0877	18142 AND N278	01/08/2020	SWEENY REFINERY	99.009	COOLING TOWER	Volatile Organic Compounds (VOC)	0.08 PPMW	LAER
FL-0368	1050472-001-AC	02/14/2019	NUCOR STEEL FLORIDA, INC. NUCOR STEEL FLORIDA FACILITY	99.009	Two Cooling Towers	Particulate matter, total (TPM)	0.0010 % DRIFT RATE	BACT-PSD
				99.009	Two Cooling Towers	Particulate matter, total (TPM)	0.0010 % DRIFT RATE	BACT-PSD
TX-0847	6825A, N65, PSDTX49M1, GHGPSDT	09/16/2018	PREMCOR REFINING GROUP VALERO PORT ARTHUR REFINERY	50.002	Cooling Towers/Heat Exchange System	Particulate matter, total < 10 µ (TPM10)	0.0010 %	BACT-PSD
				50.002	Cooling Towers/Heat Exchange System	Particulate matter, total < 2.5 µ (TPM2.5)	0.0010 %	BACT-PSD
				50.002	Cooling Towers/Heat Exchange System	Particulate matter, total < 10 µ (TPM10)	0.0010 %	BACT-PSD
				50.002	Cooling Towers/Heat Exchange System	Particulate matter, total < 2.5 µ (TPM2.5)	0.0010 %	BACT-PSD
LA-0328	PSD-LA-709(M-3)	05/02/2018	SHINTECH LOUISIANA, LLC PLAQUEMINES PLANT 1	63.036	Cooling Tower 2 (P-35)	Particulate matter, total < 10 µ (TPM10)	0.0005 %	BACT-PSD
				63.036	Cooling Tower 2 (P-35)	Particulate matter, total < 2.5 µ (TPM2.5)	0.0005 %	BACT-PSD
				63.036	Cooling Tower 2 (P-35)	Particulate matter, total < 10 µ (TPM10)	0.0005 %	BACT-PSD
				63.036	Cooling Tower 2 (P-35)	Particulate matter, total < 2.5 µ (TPM2.5)	0.0005 %	BACT-PSD
WI-0284	18-JJW-017	2018-04-24	SIO INTERNATIONAL WISCONSIN, INC. -ENERGY PLANT	99.009	P02A-P & P03A-P Cooling Towers	Visible Emissions (VE)	10.0000 %	BACT-PSD
WI-0286	18-JJW-022	04/24/2018	SIO INTERNATIONAL SIO INTERNATIONAL WISCONSIN, INC. -ENERGY PLANT	90.009	P41 – Cooling Tower	Process Notes:	3-Cell, 11,500 gpm and 0.0005% mist eliminators.	
				90.009	P41 – Cooling Tower	Volatile Organic Compounds (VOC)	10.0000 % OPACITY	BACT-PSD
				90.009	P41 – Cooling Tower	Process Notes:	3-Cell, 11,500 gpm and 0.0005% mist eliminators.	
				90.009	P41 – Cooling Tower	Volatile Organic Compounds (VOC)	10.0000 % OPACITY	BACT-PSD
MI-0427	66-17	11/17/2017	FILER CITY STATION LIMITED PARTNERSHIP FILER CITY STATION	99.009	EUCOOLTWR (Cooling Tower--Wet Mechanical Drift)	Particulate matter, filterable (FPM)	0.0006 %	BACT-PSD
				99.009	EUCOOLTWR (Cooling Tower--Wet Mechanical Drift)	Particulate matter, total < 10 µ (TPM10)	0.0006 %	BACT-PSD
				99.009	EUCOOLTWR (Cooling Tower--Wet Mechanical Drift)	Particulate matter, total < 2.5 µ (TPM2.5)	0.0006 %	BACT-PSD
				99.009	EUCOOLTWR (Cooling Tower--Wet Mechanical Drift)	Particulate matter, filterable (FPM)	0.0006 %	BACT-PSD
				99.009	EUCOOLTWR (Cooling Tower--Wet Mechanical Drift)	Particulate matter, total < 10 µ (TPM10)	0.0006 %	BACT-PSD
				99.009	EUCOOLTWR (Cooling Tower--Wet Mechanical Drift)	Particulate matter, total < 2.5 µ (TPM2.5)	0.0006 %	BACT-PSD
AL-0321	503-2012	10/11/2017	KIMBERLY-CLARK CORPORATION - MOBILE OPERATIONS KIMBERLY-CLARK MOBILE	99.999	803 Cooling Tower	Particulate matter, filterable < 10 µ (FPM10)	0.0050 % DRIFT ELIMINATION	BACT-PSD
				99.999	803 Cooling Tower	Particulate matter, filterable < 2.5 µ (FPM2.5)	0.0050 % DRIFT ELIMINATION	BACT-PSD
				99.999	803 Cooling Tower	Particulate matter, filterable < 10 µ (FPM10)	0.0050 % DRIFT ELIMINATION	BACT-PSD
				99.999	803 Cooling Tower	Particulate matter, filterable < 2.5 µ (FPM2.5)	0.0050 % DRIFT ELIMINATION	BACT-PSD

RBLC Search Results: Cooling Tower

RBLC ID	PERMIT	DATE	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
LA-0317	PSD-LA-761(M4)	12/22/2016	METHANEX USA, LLC METHANEX - GEISMAR METHANOL PLANT	99.009	cooling towers (I-CT-621, II-CT-621)	Particulate matter, total < 10 µ (TPM10)	0.0010 %	BACT-PSD
				99.009	cooling towers (I-CT-621, II-CT-621)	Particulate matter, total < 2.5 µ (TPM2.5)	0.0010 %	BACT-PSD
				99.009	cooling towers (I-CT-621, II-CT-621)	Particulate matter, total < 10 µ (TPM10)	0.0010 %	BACT-PSD
				99.009	cooling towers (I-CT-621, II-CT-621)	Particulate matter, total < 2.5 µ (TPM2.5)	0.0010 %	BACT-PSD
LA-0306	PSD-LA-815	12/20/2016	TOPCHEM POLLOCK, LLC TOPCHEM POLLOCK, LLC	99.009	Cooling Tower CT-16-1 (EQT032)	Process Notes:	CT-16-1 Cooling Water Tower (EQT032)shall be equipped with high efficiency drift eliminator with drift factor of 0.001%.	
				99.009	Cooling Tower CT-16-1 (EQT032)	Process Notes:	CT-16-1 Cooling Water Tower (EQT032)shall be equipped with high efficiency drift eliminator with drift factor of 0.001%.	
IN-0255	107-36834-00038	09/21/2016	NUCOR STEEL NUCOR STEEL	99.999	HOT MILL CONTACT COOLING TOWER	Particulate matter, filterable (FPM)	0.0010 % DRIFT	BACT-PSD
				99.999	HOT MILL CONTACT COOLING TOWER	Particulate matter, total < 10 µ (TPM10)	0.0010 % DRIFT	BACT-PSD
				99.999	HOT MILL CONTACT COOLING TOWER	Particulate matter, total < 2.5 µ (TPM2.5)	0.0010 % DRIFT	BACT-PSD
				99.999	HOT MILL CONTACT COOLING TOWER	Particulate matter, filterable (FPM)	0.0010 % DRIFT	BACT-PSD
				99.999	HOT MILL CONTACT COOLING TOWER	Particulate matter, total < 10 µ (TPM10)	0.0010 % DRIFT	BACT-PSD
				99.999	HOT MILL CONTACT COOLING TOWER	Particulate matter, total < 2.5 µ (TPM2.5)	0.0010 % DRIFT	BACT-PSD
LA-0314	PSD-LA-813	08/03/2016	INDORAMA VENTURES OLEFINS, LLC INDORAMA LAKE CHARLES FACILITY	99.009	cooling towers - 007	Particulate matter, total < 10 µ (TPM10)	0.0005 %	BACT-PSD
				99.009	cooling towers - 007	Particulate matter, total < 2.5 µ (TPM2.5)	0.0005 %	BACT-PSD
				99.009	cooling towers - 007	Particulate matter, total < 10 µ (TPM10)	0.0005 %	BACT-PSD
				99.009	cooling towers - 007	Particulate matter, total < 2.5 µ (TPM2.5)	0.0005 %	BACT-PSD
TX-0803	18999, PSDTX755M1, N216	07/12/2016	FLINT HILLS RESOURCES HOUSTON CHEMICAL LLC PL PROPYLENE HOUSTON OLEFINS PLANT	99.009	Cooling Tower	Particulate matter, total < 10 µ (TPM10)	0.0010 % DRIFT	BACT-PSD
				99.009	Cooling Tower	Particulate matter, total < 2.5 µ (TPM2.5)	0.0010 % DRIFT	BACT-PSD
				99.009	Cooling Tower	Particulate matter, total < 10 µ (TPM10)	0.0010 % DRIFT	BACT-PSD
				99.009	Cooling Tower	Particulate matter, total < 2.5 µ (TPM2.5)	0.0010 % DRIFT	BACT-PSD
LA-0305	PSD-LA-803(M1)	06/30/2016	LAKE CHARLES METHANOL, LLC LAKE CHARLES METHANOL FACILITY	99.009	Cooling Towers	Particulate matter, total < 10 µ (TPM10)	0.0005 %	BACT-PSD
				99.009	Cooling Towers	Particulate matter, total < 2.5 µ (TPM2.5)	0.0005 %	BACT-PSD
				99.009	Cooling Towers	Particulate matter, total < 10 µ (TPM10)	0.0005 %	BACT-PSD
				99.009	Cooling Towers	Particulate matter, total < 2.5 µ (TPM2.5)	0.0005 %	BACT-PSD
SC-0193	0560-0385-CA	04/15/2016	MERCEDES BENZ VANS, LLC MERCEDES BENZ VANS, LLC	41.002	Cooling Towers	Particulate matter, total (TPM)	0.0010 % DRIFT RATE	BACT-PSD
				41.002	Cooling Towers	Particulate matter, total < 10 µ (TPM10)	0.0010 % DRIFT RATE	BACT-PSD
				41.002	Cooling Towers	Particulate matter, total < 2.5 µ (TPM2.5)	0.0010 % DRIFT RATE	BACT-PSD
				41.002	Cooling Towers	Particulate matter, total (TPM)	0.0010 % DRIFT RATE	BACT-PSD
				41.002	Cooling Towers	Particulate matter, total < 10 µ (TPM10)	0.0010 % DRIFT RATE	BACT-PSD
				41.002	Cooling Towers	Particulate matter, total < 2.5 µ (TPM2.5)	0.0010 % DRIFT RATE	BACT-PSD
OK-0173	2015-0643-C PSD	01/19/2016	COMMERCIAL METALS COMPANY CMC STEEL OKLAHOMA	81.390	Cooling Towers	Particulate matter, total < 10 µ (TPM10)	0.0010 % DRIFT	BACT-PSD
				81.390	Cooling Towers	Particulate matter, total < 10 µ (TPM10)	0.0010 % DRIFT	BACT-PSD
PA-0312	23-0003Z	01/11/2016	MONROE ENERGY, LLC MONROE ENERGY LLC/TRAINER	50.999	Cooling Tower 1	Process Notes:	Alky Cooling Tower #2 equipped with drift eliminators, drift rate 0.0005%.	
				50.999	Cooling Tower 1	Process Notes:	Alky Cooling Tower #2 equipped with drift eliminators, drift rate 0.0005%.	
				50.999	FCC Cooling Tower	Process Notes:	FCC Cooling Tower equipped with drift eliminators, drift rate 0.0005%	
				50.999	FCC Cooling Tower	Process Notes:	FCC Cooling Tower equipped with drift eliminators, drift rate 0.0005%	
				50.999	Crude Cooling Tower	Process Notes:	Crude Cooling Tower equipped with drift eliminators, drift rate 0.0005%	
				50.999	Crude Cooling Tower	Process Notes:	Crude Cooling Tower equipped with drift eliminators, drift rate 0.0005%	
KS-0029	C-12987	07/14/2015	THE EMPIRE DISTRICT ELECTRIC COMPANY THE EMPIRE DISTRICT ELECTRIC COMPANY	99.009	Mechanical draft cooling tower	Particulate matter, total (TPM)	0.0005 % DRIFT RATE	BACT-PSD
				99.009	Mechanical draft cooling tower	Particulate matter, total < 10 µ (TPM10)	0.0005 % DRIFT RATE	BACT-PSD
				99.009	Mechanical draft cooling tower	Particulate matter, total < 2.5 µ (TPM2.5)	0.0005 % DRIFT RATE	BACT-PSD
				99.009	Mechanical draft cooling tower	Particulate matter, total (TPM)	0.0005 % DRIFT RATE	BACT-PSD
				99.009	Mechanical draft cooling tower	Particulate matter, total < 10 µ (TPM10)	0.0005 % DRIFT RATE	BACT-PSD
				99.009	Mechanical draft cooling tower	Particulate matter, total < 2.5 µ (TPM2.5)	0.0005 % DRIFT RATE	BACT-PSD
LA-0309	PSD-LA-774(M1)	06/04/2015	BENTELER STEEL / TUBE MANUFACTURING CORPORATION BENTELER STEEL TUBE FACILITY	99.009	Cooling Towers	Particulate matter, total < 10 µ (TPM10)	0.0005 % DRIFT RATE	BACT-PSD
				99.009	Cooling Towers	Particulate matter, total < 2.5 µ (TPM2.5)	0.0005 % DRIFT RATE	BACT-PSD
				99.009	Cooling Towers	Particulate matter, total < 10 µ (TPM10)	0.0005 % DRIFT RATE	BACT-PSD
				99.009	Cooling Towers	Particulate matter, total < 2.5 µ (TPM2.5)	0.0005 % DRIFT RATE	BACT-PSD
NE-0059	CP14-007	03/25/2015	AG PROCESSING INC., A COOPERATIVE AGP SOY	99.009	Cooling Tower	Particulate matter, total (TPM)	0.0005 %	BACT-PSD
				99.009	Cooling Tower	Particulate matter, total (TPM)	0.0005 %	BACT-PSD
AK-0083	AQ0083CPT06	01/06/2015	AGRIUM U.S. INC. KENAI NITROGEN OPERATIONS	99.110	2 Cell Cross-Flow Cooling Tower	Particulate matter, fugitive	0.0020 % DRIFT	BACT-PSD
				99.110	2 Cell Cross-Flow Cooling Tower	Particulate matter, total < 10 µ (TPM10)	0.0020 % DRIFT	BACT-PSD
				99.110	2 Cell Cross-Flow Cooling Tower	Particulate matter, total < 2.5 µ (TPM2.5)	0.0020 % DRIFT	BACT-PSD
				99.110	2 Cell Cross-Flow Cooling Tower	Particulate matter, fugitive	0.0020 % DRIFT	BACT-PSD
				99.110	2 Cell Cross-Flow Cooling Tower	Particulate matter, total < 10 µ (TPM10)	0.0020 % DRIFT	BACT-PSD
				99.110	2 Cell Cross-Flow Cooling Tower	Particulate matter, total < 2.5 µ (TPM2.5)	0.0020 % DRIFT	BACT-PSD

RBLC Search Results: Cooling Tower

RBLC ID	PERMIT	DATE	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
TX-0714	102731 PSDTX1294	12/19/2014	NRG TEXAS POWER LLC S R BERTRON ELECTRIC GENERATING STATION	99.009	cooling tower	Particulate matter, total < 2.5 µ (TPM2.5)	0.0005 %	BACT-PSD
				99.009	cooling tower	Process Notes:	drift eliminators limit drift to 0.0005%	
				99.009	cooling tower	Particulate matter, total < 2.5 µ (TPM2.5)	0.0005 %	BACT-PSD
				99.009	cooling tower	Process Notes:	drift eliminators limit drift to 0.0005%	
TX-0710	108258 PSDTX1348	12/01/2014	VICTORIA WLE L.P. VICTORIA POWER STATION	99.009	cooling tower	Particulate matter, total < 2.5 µ (TPM2.5)	0.0010 %	BACT-PSD
				99.009	cooling tower	Process Notes:	The drift rate, expressed as a percent of the recirculation rate, may be minimized through cooling tower design and the use of drift eliminators. Both technologies will be utilized on the modified cooling tower for the proposed project, to limit drift to 0.001% of the recirculation rate.	
				99.009	cooling tower	Particulate matter, total < 2.5 µ (TPM2.5)	0.0010 %	BACT-PSD
				99.009	cooling tower	Process Notes:	The drift rate, expressed as a percent of the recirculation rate, may be minimized through cooling tower design and the use of drift eliminators. Both technologies will be utilized on the modified cooling tower for the proposed project, to limit drift to 0.001% of the recirculation rate.	
TX-0712	111393 PSDTX1368	11/20/2014	SOUTHERN POWER COMPANY TRINIDAD GENERATING FACILITY	99.009	cooling tower	Particulate matter, total < 2.5 µ (TPM2.5)	0.0010 %	BACT-PSD
				99.009	cooling tower	Process Notes:	drift eliminators that limit drift to 0.001%	
				99.009	cooling tower	Particulate matter, total < 2.5 µ (TPM2.5)	0.0010 %	BACT-PSD
				99.009	cooling tower	Process Notes:	drift eliminators that limit drift to 0.001%	
MI-0417	102-12A	10/27/2014	GERDAU MACSTEEL, INC. GERDAU MACSTEEL, INC.	81.290	EUCASTERCOOLTWR (Caster cooling tower)	Particulate matter, total < 2.5 µ (TPM2.5)	0.0005 %	BACT-PSD
				81.290	EUCASTERCOOLTWR (Caster cooling tower)	Particulate matter, total < 2.5 µ (TPM2.5)	0.0005 %	BACT-PSD
IL-0114	13060007	09/05/2014	CRONUS CHEMICALS, LLC CRONUS CHEMICALS, LLC	61.012	Cooling Tower	Particulate matter, filterable (FPM)	0.0005 % LOSS FROM CIRC.	BACT-PSD
				61.012	Cooling Tower	Particulate matter, total < 10 µ (TPM10)	0.0005 % LOSS FROM CIRC.	BACT-PSD
				61.012	Cooling Tower	Particulate matter, total < 2.5 µ (TPM2.5)	0.0005 % LOSS FROM CIRC.	BACT-PSD
				61.012	Cooling Tower	Particulate matter, filterable (FPM)	0.0005 % LOSS FROM CIRC.	BACT-PSD
				61.012	Cooling Tower	Particulate matter, total < 10 µ (TPM10)	0.0005 % LOSS FROM CIRC.	BACT-PSD
				61.012	Cooling Tower	Particulate matter, total < 2.5 µ (TPM2.5)	0.0005 % LOSS FROM CIRC.	BACT-PSD
TX-0703	107520,PSDTX1384	08/08/2014	FORMOSA PLASTICS CORPORATION LOW DENSITY POLYETHYLENE (LDPE) PLANT	99.999	Cooling Tower	Particulate matter, total < 2.5 µ (TPM2.5)	0.0010 %	BACT-PSD
				99.999	Cooling Tower	Process Notes:	Cooling Tower will have mist eliminators. PM emissions from cooling tower are controlled to a drift elimination factor of 0.001%. VOC emissions from cooling tower are monitored monthly by TCEQ Sampling Procedures Manual, Appendix P (El Paso Method)	
				99.999	Cooling Tower	Particulate matter, total < 2.5 µ (TPM2.5)	0.0010 %	BACT-PSD
				99.999	Cooling Tower	Process Notes:	Cooling Tower will have mist eliminators. PM emissions from cooling tower are controlled to a drift elimination factor of 0.001%. VOC emissions from cooling tower are monitored monthly by TCEQ Sampling Procedures Manual, Appendix P (El Paso Method)	
AL-0271	502-0001-X049	06/11/2014	GEORGIA PACIFIC LLC GEORGIA PACIFIC BRETON LLC	11.310	Cooling Tower - No. 4 Power Boiler	Process Notes:	0.001% Drift Eliminater	
				11.310	Cooling Tower - No. 4 Power Boiler	Process Notes:	0.001% Drift Eliminater	
IN-0173	129-33576-00059	06/04/2014	MIDWEST FERTILIZER CORPORATION MIDWEST FERTILIZER CORPORATION	99.009	TEN CELL EVAPORATIVE COOLING TOWER	Particulate matter, filterable (FPM)	0.0005 % DRIFT LOSS	BACT-PSD
				99.009	TEN CELL EVAPORATIVE COOLING TOWER	Particulate matter, total < 10 µ (TPM10)	0.0005 % DRIFT LOSS	BACT-PSD
				99.009	TEN CELL EVAPORATIVE COOLING TOWER	Particulate matter, total < 2.5 µ (TPM2.5)	0.0005 % DRIFT LOSS	BACT-PSD
				99.009	TEN CELL EVAPORATIVE COOLING TOWER	Particulate matter, filterable (FPM)	0.0005 % DRIFT LOSS	BACT-PSD
				99.009	TEN CELL EVAPORATIVE COOLING TOWER	Particulate matter, total < 10 µ (TPM10)	0.0005 % DRIFT LOSS	BACT-PSD
				99.009	TEN CELL EVAPORATIVE COOLING TOWER	Particulate matter, total < 2.5 µ (TPM2.5)	0.0005 % DRIFT LOSS	BACT-PSD
				99.009	SIX CELL EVAPORATIVE COOLING TOWER	Particulate matter, filterable (FPM)	0.0005 % DRIFT LOSS	BACT-PSD
				99.009	SIX CELL EVAPORATIVE COOLING TOWER	Particulate matter, total < 10 µ (TPM10)	0.0005 % DRIFT LOSS	BACT-PSD
				99.009	SIX CELL EVAPORATIVE COOLING TOWER	Particulate matter, total < 2.5 µ (TPM2.5)	0.0005 % DRIFT LOSS	BACT-PSD

RBLC Search Results: Cooling Tower

RBLC ID	PERMIT	DATE	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				99.009	SIX CELL EVAPORATIVE COOLING TOWER	Particulate matter, filterable (FPM)	0.0005 % DRIFT LOSS	BACT-PSD
				99.009	SIX CELL EVAPORATIVE COOLING TOWER	Particulate matter, total < 10 µ (TPM10)	0.0005 % DRIFT LOSS	BACT-PSD
				99.009	SIX CELL EVAPORATIVE COOLING TOWER	Particulate matter, total < 2.5 µ (TPM2.5)	0.0005 % DRIFT LOSS	BACT-PSD
IN-0180	129-33576-00059	06/04/2014	MIDWEST FERTILIZER CORPORATION MIDWEST FERTILIZER CORPORATION	99.009	TEN CELL EVAPORATIVE COOLING TOWER	Particulate matter, filterable (FPM)	0.0005 % DRIFT LOSS	BACT-PSD
				99.009	TEN CELL EVAPORATIVE COOLING TOWER	Particulate matter, total < 10 µ (TPM10)	0.0005 % DRIFT LOSS	BACT-PSD
				99.009	TEN CELL EVAPORATIVE COOLING TOWER	Particulate matter, total < 2.5 µ (TPM2.5)	0.0005 % DRIFT LOSS	BACT-PSD
				99.009	TEN CELL EVAPORATIVE COOLING TOWER	Particulate matter, filterable (FPM)	0.0005 % DRIFT LOSS	BACT-PSD
				99.009	TEN CELL EVAPORATIVE COOLING TOWER	Particulate matter, total < 10 µ (TPM10)	0.0005 % DRIFT LOSS	BACT-PSD
				99.009	TEN CELL EVAPORATIVE COOLING TOWER	Particulate matter, total < 2.5 µ (TPM2.5)	0.0005 % DRIFT LOSS	BACT-PSD
				99.009	SIX CELL EVAPORATIVE COOLING TOWER	Particulate matter, filterable (FPM)	0.0005 % DRIFT LOSS	BACT-PSD
				99.009	SIX CELL EVAPORATIVE COOLING TOWER	Particulate matter, total < 10 µ (TPM10)	0.0005 % DRIFT LOSS	BACT-PSD
				99.009	SIX CELL EVAPORATIVE COOLING TOWER	Particulate matter, total < 2.5 µ (TPM2.5)	0.0005 % DRIFT LOSS	BACT-PSD
				99.009	SIX CELL EVAPORATIVE COOLING TOWER	Particulate matter, filterable (FPM)	0.0005 % DRIFT LOSS	BACT-PSD
				99.009	SIX CELL EVAPORATIVE COOLING TOWER	Particulate matter, total < 10 µ (TPM10)	0.0005 % DRIFT LOSS	BACT-PSD
				99.009	SIX CELL EVAPORATIVE COOLING TOWER	Particulate matter, total < 2.5 µ (TPM2.5)	0.0005 % DRIFT LOSS	BACT-PSD
OK-0162	2011-441-C(M-2)PSD	05/29/2014	KOCH NITROGEN CO LLC ENID NITROGEN PLANT	61.012	Cooling Towers	Particulate matter, total < 10 µ (TPM10)	0.0005 % DRIFT	BACT-PSD
				61.012	Cooling Towers	Particulate matter, total < 2.5 µ (TPM2.5)	0.0005 % DRIFT	BACT-PSD
				61.012	Cooling Towers	Particulate matter, total < 10 µ (TPM10)	0.0005 % DRIFT	BACT-PSD
				61.012	Cooling Towers	Particulate matter, total < 2.5 µ (TPM2.5)	0.0005 % DRIFT	BACT-PSD
TX-0657	PSDTX1340 AND 107764	05/16/2014	NATGASOLINE LLC BEAUMONT GAS TO GASOLINE PLANT	50.002	cooling tower	Particulate matter, total (TPM)	0.0010 % DRIFT	BACT-PSD
				50.002	cooling tower	Particulate matter, total (TPM)	0.0010 % DRIFT	BACT-PSD
MS-0092	0040-00055	05/08/2014	EMBERCLEAR GTL MS LLC EMBERCLEAR GTL MS	99.009	Cooling tower, Induced draft	Particulate matter, total (TPM)	0.0010 %	BACT-PSD
				99.009	Cooling tower, Induced draft	Particulate matter, total < 10 µ (TPM10)	0.0010 %	BACT-PSD
				99.009	Cooling tower, Induced draft	Particulate matter, total < 2.5 µ (TPM2.5)	0.0010 %	BACT-PSD
				99.009	Cooling tower, Induced draft	Particulate matter, total (TPM)	0.0010 %	BACT-PSD
				99.009	Cooling tower, Induced draft	Particulate matter, total < 10 µ (TPM10)	0.0010 %	BACT-PSD
				99.009	Cooling tower, Induced draft	Particulate matter, total < 2.5 µ (TPM2.5)	0.0010 %	BACT-PSD
TX-0713	108411 PSDTX1350	04/29/2014	TENASKA BROWNSVILLE PARTNERS, LLC TENASKA BROWNSVILLE GENERATING STATION	99.009	cooling tower	Particulate matter, total < 2.5 µ (TPM2.5)	0.0005 %	BACT-PSD
				99.009	cooling tower	Process Notes:	high-efficiency mist eliminators with a drift rate of 0.0005%	
				99.009	cooling tower	Particulate matter, total < 2.5 µ (TPM2.5)	0.0005 %	BACT-PSD
				99.009	cooling tower	Process Notes:	high-efficiency mist eliminators with a drift rate of 0.0005%	
MD-0041	PSC CASE NO. 9280	04/23/2014	CPV MARYLAND, LLC CPV ST. CHARLES	99.999	WET MECHANICAL DRAFT COOLING TOWER (10 CELL)	Process Notes:	0.0005 % RECIRULCATING WATER FLOW	
				99.999	WET MECHANICAL DRAFT COOLING TOWER (10 CELL)	Process Notes:	0.0005 % RECIRULCATING WATER FLOW	
MD-0042	CPCN CASE NO. 9327	04/08/2014	OLD DOMINION ELECTRIC CORPORATION (ODEC) WILDCAT POINT GENERATION FACILITY	99.999	WET MECHANICAL DRAFT COOLING TOWER	Process Notes:	HIGH EFFICIENCY DRIFT ELIMINATORS TO ACHIEVE DRIFT LOSS NOT TO EXCEED 0.0005 % RECIRULCATING WATER FLOW	
				99.999	WET MECHANICAL DRAFT COOLING TOWER	Process Notes:	HIGH EFFICIENCY DRIFT ELIMINATORS TO ACHIEVE DRIFT LOSS NOT TO EXCEED 0.0005 % RECIRULCATING WATER FLOW	
NJ-0081	18068 -(BOP120002)	03/07/2014	PSEG FOSSIL LLC PSEG FOSSIL LLC SEWAREN GENERATING STATION	99.999	3 Cell Wet Mechanical Cooling Tower	Process Notes:	Drift Rate: 0.001% of water flow rate	
				99.999	3 Cell Wet Mechanical Cooling Tower	Process Notes:	Drift Rate: 0.001% of water flow rate	
MI-0406	51-13	11/01/2013	LS POWER DEVELOPMENT LLC RENAISSANCE POWER LLC	99.009	EU-COOLIINGTWR: Ten(10) cell mechanical draft wet cooling tower	Particulate matter, total < 2.5 µ (TPM2.5)	0.0005 %	BACT-PSD
				99.009	EU-COOLIINGTWR: Ten(10) cell mechanical draft wet cooling tower	Particulate matter, total < 2.5 µ (TPM2.5)	0.0005 %	BACT-PSD
IN-0179	147-32322-00062	09/25/2013	OHIO VALLEY RESOURCES, LLC OHIO VALLEY RESOURCES, LLC	99.009	TWO (2) COOLING TOWERS	Particulate matter, filterable (FPM)	0.0005 % DRIFT	BACT-PSD
				99.009	TWO (2) COOLING TOWERS	Particulate matter, total < 10 µ (TPM10)	0.0050 % DRIFT	BACT-PSD
				99.009	TWO (2) COOLING TOWERS	Particulate matter, total < 2.5 µ (TPM2.5)	0.0005 % DRIFT	BACT-PSD
				99.009	TWO (2) COOLING TOWERS	Particulate matter, filterable (FPM)	0.0005 % DRIFT	BACT-PSD
				99.009	TWO (2) COOLING TOWERS	Particulate matter, total < 10 µ (TPM10)	0.0050 % DRIFT	BACT-PSD
				99.009	TWO (2) COOLING TOWERS	Particulate matter, total < 2.5 µ (TPM2.5)	0.0005 % DRIFT	BACT-PSD

RBLC Search Results: Cooling Tower

RBLC ID	PERMIT	DATE	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
IA-0106	PN 13-037	07/12/2013	CF INDUSTRIES NITROGEN, LLC CF INDUSTRIES NITROGEN, LLC - PORT NEAL NITROGEN COMPLEX	99.009	Cooling Towers	Particulate matter, total (TPM)	0.0005 %	BACT-PSD
				99.009	Cooling Towers	Particulate matter, total < 10 µ (TPM10)	0.0005 %	BACT-PSD
				99.009	Cooling Towers	Particulate matter, total < 2.5 µ (TPM2.5)	0.0005 %	BACT-PSD
				99.009	Cooling Towers	Particulate matter, total (TPM)	0.0005 %	BACT-PSD
				99.009	Cooling Towers	Particulate matter, total < 10 µ (TPM10)	0.0005 %	BACT-PSD
				99.009	Cooling Towers	Particulate matter, total < 2.5 µ (TPM2.5)	0.0005 %	BACT-PSD
IN-0167	181-32081-00054	04/16/2013	MAGNETATION LLC MAGNETATION LLC	99.009	COOLING TOWER	Particulate matter, filterable (FPM)	0.0010 % MAXIMUM DRIFT RATE	BACT-PSD
				99.009	COOLING TOWER	Particulate matter, total < 10 µ (TPM10)	0.0010 % MAX DRIFT RATE	BACT-PSD
				99.009	COOLING TOWER	Particulate matter, total < 2.5 µ (TPM2.5)	0.0010 % MAXIMUM DRIFT RATE	BACT-PSD
				99.009	COOLING TOWER	Process Notes:	CONTAINED WITHIN THE INDURATION MACHINE, ONE (1) INDUCED DRAFT CROSS FLOW WET COOLING TOWER, IDENTIFIED AS EU024, HAS A MAXIMUM DRIFT RATE OF 0.001% EXHAUSTING TO STACK SV022	
				99.009	COOLING TOWER	Particulate matter, filterable (FPM)	0.0010 % MAXIMUM DRIFT RATE	BACT-PSD
				99.009	COOLING TOWER	Particulate matter, total < 10 µ (TPM10)	0.0010 % MAX DRIFT RATE	BACT-PSD
				99.009	COOLING TOWER	Particulate matter, total < 2.5 µ (TPM2.5)	0.0010 % MAXIMUM DRIFT RATE	BACT-PSD
				99.009	COOLING TOWER	Process Notes:	CONTAINED WITHIN THE INDURATION MACHINE, ONE (1) INDUCED DRAFT CROSS FLOW WET COOLING TOWER, IDENTIFIED AS EU024, HAS A MAXIMUM DRIFT RATE OF 0.001% EXHAUSTING TO STACK SV022	
TX-0708	101542 PSDTX1288	02/07/2013	LA PALOMA ENERGY CENTER, LLC LA PALOMA ENERGY CENTER	99.009	cooling tower	Particulate matter, total < 2.5 µ (TPM2.5)	0.0010 %	BACT-PSD
				99.009	cooling tower	Process Notes:	LPEC proposes to limit the solids in the circulating water of the cooling tower 7,000 milligrams/liter to reduce emissions of PM/PM10/PM2.5. LPEC also proposes to use high-efficiency mist eliminators with a drift rate of 0.001% to reduce PM/PM10/PM2.5 from the cooling tower.	
				99.009	cooling tower	Particulate matter, total < 2.5 µ (TPM2.5)	0.0010 %	BACT-PSD
				99.009	cooling tower	Process Notes:	LPEC proposes to limit the solids in the circulating water of the cooling tower 7,000 milligrams/liter to reduce emissions of PM/PM10/PM2.5. LPEC also proposes to use high-efficiency mist eliminators with a drift rate of 0.001% to reduce PM/PM10/PM2.5 from the cooling tower.	
MI-0404	102-12	01/04/2013	GERDAU MACSTEEL, INC. GERDAU MACSTEEL, INC.	81.290	Caster Cooling Tower (EUCASTERCOOLTWR)	Particulate matter, total < 10 µ (TPM10)	0.0005 % DRIFT LOSS	BACT-PSD
				81.290	Caster Cooling Tower (EUCASTERCOOLTWR)	Particulate matter, total < 10 µ (TPM10)	0.0005 % DRIFT LOSS	BACT-PSD
IN-0156	183-27145-00030	12/21/2012	STEEL DYNAMICS, INC. -STRUCTURAL AND RAIL DIVISION STEEL DYNAMICS, INC. - STRUCTURAL AND RAIL DIVISION	99.009	COOLING TOWER: ROLLING MILL/CASTER (NON-CONTACT) ID#15E	Particulate matter, filterable (FPM)	0.0030 % DRIFT RATE	BACT-PSD
				99.009	COOLING TOWER: ROLLING MILL/CASTER (NON-CONTACT) ID#15E	Particulate matter, filterable < 10 µ (FPM10)	0.0030 % DRIFT RATE	BACT-PSD
				99.009	COOLING TOWER: ROLLING MILL/CASTER (NON-CONTACT) ID#15E	Particulate matter, filterable (FPM)	0.0030 % DRIFT RATE	BACT-PSD
				99.009	COOLING TOWER: ROLLING MILL/CASTER (NON-CONTACT) ID#15E	Particulate matter, filterable < 10 µ (FPM10)	0.0030 % DRIFT RATE	BACT-PSD
				99.009	COOLING TOWER: CASTER SPRAYS (CONTACT) ID#15F	Particulate matter, filterable (FPM)	0.0010 % DRIFT RATE	BACT-PSD
				99.009	COOLING TOWER: CASTER SPRAYS (CONTACT) ID#15F	Particulate matter, filterable < 10 µ (FPM10)	0.0010 % DRIFT RATE	BACT-PSD
				99.009	COOLING TOWER: CASTER SPRAYS (CONTACT) ID#15F	Particulate matter, filterable (FPM)	0.0010 % DRIFT RATE	BACT-PSD
				99.009	COOLING TOWER: CASTER SPRAYS (CONTACT) ID#15F	Particulate matter, filterable < 10 µ (FPM10)	0.0010 % DRIFT RATE	BACT-PSD
				99.009	COOLING TOWER: ROLLING MILL (CONTACT) ID#15A	Particulate matter, filterable (FPM)	0.0010 % DRIFT RATE	BACT-PSD
				99.009	COOLING TOWER: ROLLING MILL (CONTACT) ID#15A	Particulate matter, filterable < 10 µ (FPM10)	0.0010 % DRIFT RATE	BACT-PSD
				99.009	COOLING TOWER: ROLLING MILL (CONTACT) ID#15A	Particulate matter, filterable (FPM)	0.0010 % DRIFT RATE	BACT-PSD
				99.009	COOLING TOWER: ROLLING MILL (CONTACT) ID#15A	Particulate matter, filterable < 10 µ (FPM10)	0.0010 % DRIFT RATE	BACT-PSD
				99.009	COOLING TOWER: LVD BOILER (CONTACT) ID#15G	Particulate matter, filterable (FPM)	0.0050 % DRIFT RATE	BACT-PSD
				99.009	COOLING TOWER: LVD BOILER (CONTACT) ID#15G	Particulate matter, filterable < 10 µ (FPM10)	0.0050 % DRIFT RATE	BACT-PSD

RBLC Search Results: Cooling Tower

RBLC ID	PERMIT	DATE	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				99.009	COOLING TOWER: LVD BOILER (CONTACT) ID#15G	Particulate matter, filterable (FPM)	0.0050 % DRIFT RATE	BACT-PSD
				99.009	COOLING TOWER: LVD BOILER (CONTACT) ID#15G	Particulate matter, filterable < 10 µ (FPM10)	0.0050 % DRIFT RATE	BACT-PSD
				99.009	COOLING TOWER: ROLLING MILL (CONTACT) ID#15B	Particulate matter, filterable (FPM)	0.0010 % DRIFT RATE	BACT-PSD
				99.009	COOLING TOWER: ROLLING MILL (CONTACT) ID#15B	Particulate matter, filterable < 10 µ (FPM10)	0.0010 % DRIFT RATE	BACT-PSD
				99.009	COOLING TOWER: ROLLING MILL (CONTACT) ID#15B	Particulate matter, filterable (FPM)	0.0010 % DRIFT RATE	BACT-PSD
				99.009	COOLING TOWER: ROLLING MILL (CONTACT) ID#15B	Particulate matter, filterable < 10 µ (FPM10)	0.0010 % DRIFT RATE	BACT-PSD
				99.009	COOLING TOWER: ROLLING MILL ID#15C (NONCONTACT)	Particulate matter, filterable (FPM)	0.0010 % DRIFT RATE	BACT-PSD
				99.009	COOLING TOWER: ROLLING MILL ID#15C (NONCONTACT)	Particulate matter, filterable < 10 µ (FPM10)	0.0010 % DRIFT RATE	BACT-PSD
				99.009	COOLING TOWER: ROLLING MILL ID#15C (NONCONTACT)	Particulate matter, filterable (FPM)	0.0010 % DRIFT RATE	BACT-PSD
				99.009	COOLING TOWER: ROLLING MILL ID#15C (NONCONTACT)	Particulate matter, filterable < 10 µ (FPM10)	0.0010 % DRIFT RATE	BACT-PSD
				99.009	COOLING TOWER: #1 CAST ID#15D (CONTACT)	Particulate matter, filterable (FPM)	0.0010 % DRAFT RATE	BACT-PSD
				99.009	COOLING TOWER: #1 CAST ID#15D (CONTACT)	Particulate matter, filterable < 10 µ (FPM10)	0.0010 % DRAFT RATE	BACT-PSD
				99.009	COOLING TOWER: #1 CAST ID#15D (CONTACT)	Particulate matter, filterable (FPM)	0.0010 % DRAFT RATE	BACT-PSD
				99.009	COOLING TOWER: #1 CAST ID#15D (CONTACT)	Particulate matter, filterable < 10 µ (FPM10)	0.0010 % DRAFT RATE	BACT-PSD
IN-0158	141-31003-00579	12/03/2012	ST. JOSEPH ENERGY CENTER, LLC ST. JOSEPH ENEGRY CENTER, LLC	99.009	TWO (2) COOLING TOWERS	Particulate matter, filterable (FPM)	0.0005 % DRIFT LOSS	BACT-PSD
				99.009	TWO (2) COOLING TOWERS	Particulate matter, filterable < 10 µ (FPM10)	0.0005 % DRIFT LOSS	BACT-PSD
				99.009	TWO (2) COOLING TOWERS	Particulate matter, filterable < 2.5 µ (FPM2.5)	0.0005 % DRIFT LOSS	BACT-PSD
				99.009	TWO (2) COOLING TOWERS	Particulate matter, filterable (FPM)	0.0005 % DRIFT LOSS	BACT-PSD
				99.009	TWO (2) COOLING TOWERS	Particulate matter, filterable < 10 µ (FPM10)	0.0005 % DRIFT LOSS	BACT-PSD
				99.009	TWO (2) COOLING TOWERS	Particulate matter, filterable < 2.5 µ (FPM2.5)	0.0005 % DRIFT LOSS	BACT-PSD
IA-0105	12-219	10/26/2012	IOWA FERTILIZER COMPANY IOWA FERTILIZER COMPANY	61.999	Cooling Tower	Particulate matter, total (TPM)	0.0005 %	BACT-PSD
				61.999	Cooling Tower	Particulate matter, total < 10 µ (TPM10)	0.0005 %	BACT-PSD
				61.999	Cooling Tower	Particulate matter, total < 2.5 µ (TPM2.5)	0.0005 %	BACT-PSD
				61.999	Cooling Tower	Particulate matter, total (TPM)	0.0005 %	BACT-PSD
				61.999	Cooling Tower	Particulate matter, total < 10 µ (TPM10)	0.0005 %	BACT-PSD
				61.999	Cooling Tower	Particulate matter, total < 2.5 µ (TPM2.5)	0.0005 %	BACT-PSD
MI-0401	24-11B	12/21/2011	VC ENERGY LLC MIDLAND POWER STATION LLC MIDLAND POWER STATION	99.009	Cooling Tower	Particulate matter, filterable (FPM)	0.0005 % DRIFT LOSS RATE	BACT-PSD
				99.009	Cooling Tower	Particulate matter, filterable (FPM)	0.0005 % DRIFT LOSS RATE	BACT-PSD
PA-0275	20-305A	10/24/2011	CRAWFORD RENEWABLE ENERGY CRAWFORD RENEWABLE ENERGY LLC/GREENWOOD TWP -NOT CONSTRUCTED	99.190	Material Handling, Plant Roadways, and Cooling Tower	Process Notes:	Sand(fluidized bed material) will be deliverd either by truck or rail, then pneumatically transfered to the top of each 1500 cubic ft capacity silo. There is one silo for each CFB unit. Each silo will be equipped with a bin vent dust collection system. The sand will be pneumatically conveyed (enclosed) by blowers from the silos to the CFB units to develop a bed inside the boiler. Limestone will be delivered by either rail or truck, and then pneumatically transfered to the top of each storage silo. Each storage silo is equipped with a bin dust collection system. Limestone and sand particle size is greater than 20 microns for sand and greater than 10 microns for limestone. Therefore no PM-10 or PM-2.5 emissions. Hydrated lime silo potential emisisons based on lb/day limit where they fill the silo once per day for an hour, resulting in emissions on an hourly basis. Aqueous 19% ammonia will be delivered by either rail or truck and stored in 19500 gallon tank equipped with a pressure relief valve. Activated carbon will be delivered in 500lb bags. A five cycle wet mechanical draft cooling tower utilizing drift eliminators to minimize drift of particulate entrailed in water droplets is used. Bottom ash particle size is greater than 10 microns; however PM-10 was assumed in all calculations and therefore no PM-2.5 emissions. Cooling tower emissions based on the manufacturer's	

RBLC Search Results: Cooling Tower

RBLC ID	PERMIT	DATE	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				99.190	Material Handling, Plant Roadways, and Cooling Tower	Process Notes:	Sand(fluidized bed material) will be deliverd either by truck or rail, then pneumatically transfered to the top of each 1500 cubic ft capacity silo. There is one silo for each CFB unit. Each silo will be equipped with a bin vent dust collection system. The sand will be pneumatically conveyed (enclosed) by blowers from the silos to the CFB units to develop a bed inside the boiler. Limestone will be delivered by either rail or truck, and then pneumatically transfered to the top of each storage silo. Each storage silo is equipped with a bin dust collection system. Limestone and sand particle size is greater than 20 microns for sand and greater than 10 microns for limestone. Therefore no PM-10 or PM-2.5 emissions. Hydrated lime silo potential emisisons based on lb/day limit where they fill the silo once per day for an hour, resulting in emissions on an hourly basis. Aqueous 19% ammonia will be delivered by either rail or truck and stored in 19500 gallon tank equipped with a pressure relief valve. Activated carbon will be delivered in 500lb bags. A five cycle wet mechanical draft cooling tower utilizing drift eliminators to minimize drift of particulate entrailed in water droplets is used. Bottom ash particle size is greater than 10 microns; however PM-10 was assumed in all calculations and therefore no PM-2.5 emissions. Cooling tower emissions based on the manufacturer's	
FL-0332	PSD-FL-416, 0550063-001-AC	09/23/2011	HIGHLANDS ENVIROFUELS (HEF), LLC HIGHLANDS BIOREFINERY AND COGENERATION PLANT	12.120	Cooling Towers (miscellaneous machinery)	Process Notes:	The permittee is authorized to construct up to three cooling towers to provide cooling to miscellaneous machinery, the condensing set and process equipment used in ethanol production at the HEF facility. Typical design parameters for the cooling towers are: one cell with a stack height of 35 feet, a circulating water flow rate of 34,000 gallons per minute (gpm), a temperature of 77 °F and a design drift rate of 0.001%.	
				12.120	Cooling Towers (miscellaneous machinery)	Volatile Organic Compounds (VOC)	0.0010 % WATER FLOW RATE	OTHER CASE-BY-CASE
				12.120	Cooling Towers (miscellaneous machinery)	Process Notes:	The permittee is authorized to construct up to three cooling towers to provide cooling to miscellaneous machinery, the condensing set and process equipment used in ethanol production at the HEF facility. Typical design parameters for the cooling towers are: one cell with a stack height of 35 feet, a circulating water flow rate of 34,000 gallons per minute (gpm), a temperature of 77 °F and a design drift rate of 0.001%.	
				12.120	Cooling Towers (miscellaneous machinery)	Volatile Organic Compounds (VOC)	0.0010 % WATER FLOW RATE	OTHER CASE-BY-CASE
WI-0252	09-DCF-251	07/22/2011	SPECIALTY MINERALS INC. (SMI) SPECIALTY MINERALS INC. - SUPERIOR	62.999	P30 - DIRECT CONTACT SCRUBBER WITH COOLING TOWER	Particulate Matter (PM)	0.0005 % CIRCULATION DRIFT	BACT-PSD
				62.999	P30 - DIRECT CONTACT SCRUBBER WITH COOLING TOWER	Particulate matter, filterable < 2.5 µ (FPM2.5)	0.0005 % CIRCULATION DRIFT	BACT-PSD
				62.999	P30 - DIRECT CONTACT SCRUBBER WITH COOLING TOWER	Particulate Matter (PM)	0.0005 % CIRCULATION DRIFT	BACT-PSD
				62.999	P30 - DIRECT CONTACT SCRUBBER WITH COOLING TOWER	Particulate matter, filterable < 2.5 µ (FPM2.5)	0.0005 % CIRCULATION DRIFT	BACT-PSD
				62.999	P40, P50 - COOLING TOWERS	Particulate Matter (PM)	0.0005 % CIRCULATION DRIFT	BACT-PSD
				62.999	P40, P50 - COOLING TOWERS	Particulate matter, filterable < 2.5 µ (FPM2.5)	0.0005 % CIRCULATION DRIFT	BACT-PSD
				62.999	P40, P50 - COOLING TOWERS	Particulate Matter (PM)	0.0005 % CIRCULATION DRIFT	BACT-PSD
				62.999	P40, P50 - COOLING TOWERS	Particulate matter, filterable < 2.5 µ (FPM2.5)	0.0005 % CIRCULATION DRIFT	BACT-PSD
				62.999	P60 - COOLING TOWER	Particulate Matter (PM)	0.0005 % CIRCULATION DRIFT	BACT-PSD
				62.999	P60 - COOLING TOWER	Particulate matter, filterable < 2.5 µ (FPM2.5)	0.0005 % CIRCULATION DRIFT	BACT-PSD
				62.999	P60 - COOLING TOWER	Particulate Matter (PM)	0.0005 % CIRCULATION DRIFT	BACT-PSD
				62.999	P60 - COOLING TOWER	Particulate matter, filterable < 2.5 µ (FPM2.5)	0.0005 % CIRCULATION DRIFT	BACT-PSD
MI-0400	317-07	06/29/2011	WOLVERINE POWER SUPPLY COOPERATIVE, INC. WOLVERINE POWER	99.009	Cooling Tower (EUCOOLINGTWR)	Particulate matter, filterable (FPM)	0.0005 %	BACT-PSD
				99.009	Cooling Tower (EUCOOLINGTWR)	Particulate matter, filterable (FPM)	0.0005 %	BACT-PSD
GA-0142	3312-075-0024-P-01-0	12/29/2010	OSCEOLA STEEL CO. OSCEOLA STEEL CO.	99.009	Cooling Towers, CT1, CT21, CT22, and CT23	Particulate matter, filterable < 10 µ (FPM10)	0.0005 % MASS FLOW RATE	BACT-PSD
				99.009	Cooling Towers, CT1, CT21, CT22, and CT23	Particulate matter, filterable < 10 µ (FPM10)	0.0005 % MASS FLOW RATE	BACT-PSD
OH-0341	P0105283	12/23/2010	NUCOR STEEL NUCOR STEEL MARION, INC.	81.290	Melt Shop Spray Contact Cooling Tower	Process Notes:	Cooling Tower with 0.005% drift rate and 198,360 gallons/hour and a maximum TDS content of 2,650 mg/L.	

RBLC Search Results: Cooling Tower

RBLC ID	PERMIT	DATE	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				81.290	Melt Shop Spray Contact Cooling Tower	Visible Emissions (VE)	10.0000 %	OTHER CASE-BY-CASE
				81.290	Melt Shop Spray Contact Cooling Tower	Process Notes:	Cooling Tower with 0.005% drift rate and 198,360 gallons/hour and a maximum TDS content of 2,650 mg/L.	
				81.290	Melt Shop Spray Contact Cooling Tower	Visible Emissions (VE)	10.0000 %	OTHER CASE-BY-CASE
				81.290	Rolling Mill Contact Cooling Tower	Process Notes:	Cooling Tower with 0.005% drift rate and 225,000 gallons/hour and a maximum TDS content of 2,650 mg/L.	
				81.290	Rolling Mill Contact Cooling Tower	Visible Emissions (VE)	10.0000 %	OTHER CASE-BY-CASE
				81.290	Rolling Mill Contact Cooling Tower	Process Notes:	Cooling Tower with 0.005% drift rate and 225,000 gallons/hour and a maximum TDS content of 2,650 mg/L.	
				81.290	Rolling Mill Contact Cooling Tower	Visible Emissions (VE)	10.0000 %	OTHER CASE-BY-CASE
GA-0141	4911-301-0016-P-01-0	12/17/2010	OGETHORPE POWER CORPERATION WARREN COUNTY BIOMASS ENERGY FACILITY	99.009	Cooling Tower	Particulate matter, filterable (FPM)	0.0005 % EFFECTIVENESS	BACT-PSD
				99.009	Cooling Tower	Particulate matter, filterable (FPM)	0.0005 % EFFECTIVENESS	BACT-PSD
NH-0018	TP-0054	07/26/2010	LAIDLAW BERLIN BIOPOWER, LLC BERLIN BIOPOWER	12.290	EU02 4-CELL WET COOLING TOWER	Particulate matter, fugitive	0.0005 % BY WGT OF FLOW	BACT-PSD
				12.290	EU02 4-CELL WET COOLING TOWER	Particulate matter, fugitive	0.0005 % BY WGT OF FLOW	BACT-PSD
TX-0552	PSDTX1110	03/03/2010	STARK POWER GENERATION II HOLDINGS, LLC WOLF HOLLOW POWER PLANT NO. 2	99.009	Cooling tower	Particulate matter, total (TPM)	0.0005 % DRIFT	BACT-PSD
				99.009	Cooling tower	Particulate matter, total (TPM)	0.0005 % DRIFT	BACT-PSD
TX-0551	PSDTX1198	02/03/2010	PANDA SHERMAN POWER LLC PANDA SHERMAN POWER STATION	99.009	Cooling tower	Particulate matter, total (TPM)	0.0005 % DRIFT	BACT-PSD
				99.009	Cooling tower	Particulate matter, total (TPM)	0.0005 % DRIFT	BACT-PSD
TX-0553	PSDTX1184	01/08/2010	LINDALE RENEWABLE ENERGY LLC LINDALE RENEWABLE ENERGY	99.009	Cooling tower	Particulate matter, total (TPM)	0.0005 % DRIFT	BACT-PSD
				99.009	Cooling tower	Particulate matter, total (TPM)	0.0005 % DRIFT	BACT-PSD
NV-0049	257	08/20/2009	HARRAH'S OPERATING COMPANY, INC. HARRAH'S OPERATING COMPANY, INC.	99.009	COOLING TOWER - UNIT HA19	Process Notes:	UNIT HA19 IS IDENTIFIED AS A BALTIMORE AIRCOIL CO. (BAC) SERIES 3000 COOLING TOWER AT HARRAH'S LAS VEGAS. UNIT HA19 IS IDENTICAL TO UNITS HA20 AND HA21. THE SAME EMISSION LIMIT APPLIES TO EACH OF THE THREE COOLING TOWERS. BACT FOR PM-10 FOR THE THREE UNITS INCLUDES: (1) EACH COOLING TOWER SHALL BE EQUIPPED WITH A DRIFT ELIMINATOR TO REDUCE DRIFT RATE TO BELOW 0.005%. (2) TOTAL DISSOLVED SOLIDS CONTENT IN THE COOLING WATER SHALL BE MAINTAINED BELOW 2,520 PPM.	
				99.009	COOLING TOWER - UNIT HA19	Process Notes:	UNIT HA19 IS IDENTIFIED AS A BALTIMORE AIRCOIL CO. (BAC) SERIES 3000 COOLING TOWER AT HARRAH'S LAS VEGAS. UNIT HA19 IS IDENTICAL TO UNITS HA20 AND HA21. THE SAME EMISSION LIMIT APPLIES TO EACH OF THE THREE COOLING TOWERS. BACT FOR PM-10 FOR THE THREE UNITS INCLUDES: (1) EACH COOLING TOWER SHALL BE EQUIPPED WITH A DRIFT ELIMINATOR TO REDUCE DRIFT RATE TO BELOW 0.005%. (2) TOTAL DISSOLVED SOLIDS CONTENT IN THE COOLING WATER SHALL BE MAINTAINED BELOW 2,520 PPM.	
				99.009	COOLING TOWER - UNIT FL17	Process Notes:	UNIT FL17 IS A MARLEY COOLING TOWER AT FLAMINGO LAS VEGAS. UNIT FL17 IS IDENTICAL TO UNITS FL18, FL19, AND FL20. THE SAME EMISSION LIMIT APPLIES TO EACH OF THE FOUR COOLING TOWERS. BACT FOR PM-10 FOR THE FOUR COOLING TOWERS INCLUDES: (1) EACH COOLING TOWER SHALL BE EQUIPPED WITH A DRIFT ELIMINATOR TO REDUCE DRIFT RATE TO BELOW 0.005%. (2) TOTAL DISSOLVED SOLIDS CONTENT IN THE COOLING WATER SHALL BE MAINTAINED BELOW 3,000 PPM.	

RBLC Search Results: Cooling Tower

RBLC ID	PERMIT	DATE	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				99.009	COOLING TOWER - UNIT FL17	Process Notes:	UNIT FL17 IS A MARLEY COOLING TOWER AT FLAMINGO LAS VEGAS. UNIT FL17 IS IDENTICAL TO UNITS FL18, FL19, AND FL20. THE SAME EMISSION LIMIT APPLIES TO EACH OF THE FOUR COOLING TOWERS. BACT FOR PM-10 FOR THE FOUR COOLING TOWERS INCLUDES: (1) EACH COOLING TOWER SHALL BE EQUIPPED WITH A DRIFT ELIMINATOR TO REDUCE DRIFT RATE TO BELOW 0.005%. (2) TOTAL DISSOLVED SOLIDS CONTENT IN THE COOLING WATER SHALL BE MAINTAINED BELOW 3,000 PPM.	
				99.009	COOLING TOWER - UNIT BA14	Process Notes:	UNIT BA14 IS A BALTIMORE AIR COIL COOLING TOWER AT BALLY'S LAS VEGAS. BACT FOR PM-10 INCLUDES: (1) THE UNIT IS EQUIPPED WITH A DRIFT ELIMINATOR TO REDUCE DRIFT RATE TO BELOW 0.005%; (2) TOTAL DISSOLVED SOLIDS CONTENT IN THE COOLING WATER SHALL BE MAINTAINED BELOW 3,000 PPM. NO OTHER COOLING TOWERS AT BILL'S GAMBLIN' HALL & SALOON, CAESAR'S PALACE, PARIS CASINO RESORT, AND IMPERIAL PALACE HAVE AN ANNUAL POTENTIAL TO EMIT FOR PM-10 IN EXCESS OF ONE TON PER YEAR. THE BACT DETERMINATIONS ARE SIMILAR TO THAT OF UNIT BA14 AND ARE SKIPPED.	
				99.009	COOLING TOWER - UNIT BA14	Process Notes:	UNIT BA14 IS A BALTIMORE AIR COIL COOLING TOWER AT BALLY'S LAS VEGAS. BACT FOR PM-10 INCLUDES: (1) THE UNIT IS EQUIPPED WITH A DRIFT ELIMINATOR TO REDUCE DRIFT RATE TO BELOW 0.005%; (2) TOTAL DISSOLVED SOLIDS CONTENT IN THE COOLING WATER SHALL BE MAINTAINED BELOW 3,000 PPM. NO OTHER COOLING TOWERS AT BILL'S GAMBLIN' HALL & SALOON, CAESAR'S PALACE, PARIS CASINO RESORT, AND IMPERIAL PALACE HAVE AN ANNUAL POTENTIAL TO EMIT FOR PM-10 IN EXCESS OF ONE TON PER YEAR. THE BACT DETERMINATIONS ARE SIMILAR TO THAT OF UNIT BA14 AND ARE SKIPPED.	
TX-0549	95	06/30/2009	INEOS LLC CHOCOLATE BAYOU FACILITY	99.999	COOLING TOWER	Particulate matter, filterable < 10 µ (FPM10)	0.0020 %	BACT-PSD
				99.999	COOLING TOWER	Particulate matter, filterable < 10 µ (FPM10)	0.0020 %	BACT-PSD
FL-0317	0250003-013-AC	05/30/2009	FLORIDA POWER AND LIGHT FPL TURKEY POINT NUCLEAR PLANT	99.009	Industrial Cooling Towers	Particulate matter, filterable < 10 µ (FPM10)	0.0005 %	BACT-PSD
				99.009	Industrial Cooling Towers	Particulate matter, total (TPM)	0.0005 %	BACT-PSD
				99.009	Industrial Cooling Towers	Particulate matter, filterable < 10 µ (FPM10)	0.0005 %	BACT-PSD
				99.009	Industrial Cooling Towers	Particulate matter, total (TPM)	0.0005 %	BACT-PSD
OH-0328	P0103995	04/10/2009	V & M STAR V & M STAR	81.390	PIPE MILL COOLING TOWER	Visible Emissions (VE)	10.0000 % OPACITY	N/A
				81.390	PIPE MILL COOLING TOWER	Visible Emissions (VE)	10.0000 % OPACITY	N/A
				81.390	MELT SHOP COOLING TOWER	Visible Emissions (VE)	10.0000 % OPACITY	N/A
				81.390	MELT SHOP COOLING TOWER	Visible Emissions (VE)	10.0000 % OPACITY	N/A
OH-0308	04-01447	02/23/2009	SUNOCO, INC. SUN COMPANY, INC., TOLEDO REFINERY	50.999	COOLING TOWER	Visible Emissions (VE)	10.0000 % OPACITY	BACT-PSD
				50.999	COOLING TOWER	Visible Emissions (VE)	10.0000 % OPACITY	BACT-PSD
FL-0316	PSD-FL-403 (0750088-001-AC)	02/20/2009	PROGRESS ENERGY FLORIDA LEVY NUCLEAR PLANT	99.009	Industrial Process Cooling Tower	Particulate matter, total (TPM)	0.0005 % DRIFT RATE	BACT-PSD
				99.009	Industrial Process Cooling Tower	Particulate matter, total (TPM)	0.0005 % DRIFT RATE	BACT-PSD
ID-0017	P-2008.0066	02/10/2009	SOUTHEAST IDAHO ENERGY, LLC POWER COUNTY ADVANCED ENERGY CENTER	99.009	ZLDS COOLING TOWER, SRC30	Particulate Matter (PM)	0.0010 % OF TOTAL CIRC FLOW	BACT-PSD
				99.009	ZLDS COOLING TOWER, SRC30	Particulate matter, filterable < 10 µ (FPM10)	0.0010 % OF TOTAL CIRC FLOW	BACT-PSD
				99.009	ZLDS COOLING TOWER, SRC30	Particulate Matter (PM)	0.0010 % OF TOTAL CIRC FLOW	BACT-PSD
				99.009	ZLDS COOLING TOWER, SRC30	Particulate matter, filterable < 10 µ (FPM10)	0.0010 % OF TOTAL CIRC FLOW	BACT-PSD
				99.009	COOLING TOWER, SRC22	Particulate Matter (PM)	0.0005 % OF TOTAL CIRC FLOW	BACT-PSD
				99.009	COOLING TOWER, SRC22	Particulate matter, filterable < 10 µ (FPM10)	0.0005 % OF TOTAL CIRC FLOW	BACT-PSD
				99.009	COOLING TOWER, SRC22	Particulate Matter (PM)	0.0005 % OF TOTAL CIRC FLOW	BACT-PSD
				99.009	COOLING TOWER, SRC22	Particulate matter, filterable < 10 µ (FPM10)	0.0005 % OF TOTAL CIRC FLOW	BACT-PSD
TX-0847	6825A, N65, PSDTX49M1, GHGPSDT	09/16/2018	PREMCOR REFINING GROUP VALERO PORT ARTHUR REFINERY	50.002	Cooling Towers/Heat Exchange System	Particulate matter, total < 10 µ (TPM10)	0.0010 %	BACT-PSD
				50.002	Cooling Towers/Heat Exchange System	Particulate matter, total < 2.5 µ (TPM2.5)	0.0010 %	BACT-PSD
				50.002	Cooling Towers/Heat Exchange System	Particulate matter, total < 10 µ (TPM10)	0.0010 %	BACT-PSD
				50.002	Cooling Towers/Heat Exchange System	Particulate matter, total < 2.5 µ (TPM2.5)	0.0010 %	BACT-PSD
MS-0092	0040-00055	05/08/2014	EMBERCLEAR GTL MS LLC EMBERCLEAR GTL MS	99.009	Cooling tower, Induced draft	Particulate matter, total (TPM)	0.0010 %	BACT-PSD

RBLC Search Results: Cooling Tower

RBLC ID	PERMIT	DATE	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				99.009	Cooling tower, Induced draft	Particulate matter, total < 10 µ (TPM10)	0.0010 %	BACT-PSD
				99.009	Cooling tower, Induced draft	Particulate matter, total < 2.5 µ (TPM2.5)	0.0010 %	BACT-PSD
				99.009	Cooling tower, Induced draft	Particulate matter, total (TPM)	0.0010 %	BACT-PSD
				99.009	Cooling tower, Induced draft	Particulate matter, total < 10 µ (TPM10)	0.0010 %	BACT-PSD
				99.009	Cooling tower, Induced draft	Particulate matter, total < 2.5 µ (TPM2.5)	0.0010 %	BACT-PSD
OH-0317	02-22896	11/20/2008	OHIO RIVER CLEAN FUELS, LLC OHIO RIVER CLEAN FUELS, LLC	90.010	COOLING TOWERS	Visible Emissions (VE)	10.0000 %	BACT-PSD
IA-0095	PROJECT 08-126	09/19/2008	TATE & LYLE INDGREDIENTS AMERICAS, INC.	99.009	COOLING TOWER	Particulate Matter (PM)	0.0005 %	BACT-PSD
				99.009	COOLING TOWER	Particulate matter, filterable < 10 µ (FPM10)	0.0005 %	BACT-PSD
FL-0303	0990646-002-AC (PSD-FL-396)	07/30/2008	FLORIDA POWER AND LIGHT COMPANY (FP&L) FPL WEST COUNTY ENERGY CENTER UNIT 3	99.999	ONE 26-CELL MECHANICAL DRAFT COOLING TOWER	Particulate Matter (PM)	0.0005 %	BACT-PSD
WY-0064	CT-4631	10/15/2007	BASIN ELECTRIC POWER COOPERATIVE DRY FORK STATION	99.999	COOLING TOWERS	Particulate matter, filterable < 10 µ (FPM10)	0.0050 %	BACT-PSD
NE-0046	CP06-0048	09/27/2007	AVENTINE RENEWABLE ENERGY - AURORA WEST, LLC AVENTINE RENEWABLE ENERGY - AURORA WEST LLC	11.310	COOLING TOWER	Particulate Matter (PM)	0.0005 %	BACT-PSD
ND-0024	PTC07026	09/14/2007	GREAT RIVER ENERGY SPIRITWOOD STATION	99.009	COOLING TOWER	Particulate matter, filterable (FPM)	0.0005 % COOLING WATER FLOW	BACT-PSD
MN-0070	06100067-001	09/07/2007	MINNESOTA STEEL INDUSTRIES, LLC	99.009	COOLING TOWER	Particulate Matter (PM)	0.0050 % DRIFT RATE	BACT-PSD
				99.009	COOLING TOWER	Particulate matter, filterable < 10 µ (FPM10)	0.0050 % DRIFT RATE	BACT-PSD
				99.009	COOLING TOWER	Visible Emissions (VE)	20.0000 %	BACT-PSD
IA-0089	07-A-955P TO 07-A-982P	08/08/2007	HOMELAND ENERGY SOLUTIONS, LLC, PN 06-672 HOMELAND ENERGY SOLUTIONS, LLC, PN 06-672	99.009	COOLING TOWER, F80 (07-A-979P)	Particulate Matter (PM)	0.0005 % DRIFT LOSS	BACT-PSD
				99.009	COOLING TOWER, F80 (07-A-979P)	Particulate matter, filterable < 10 µ (FPM10)	0.0005 % DRIFT LOSS	BACT-PSD
IA-0088	57-01-080	06/29/2007	ARCHER DANIELS MIDLAND ADM CORN PROCESSING - CEDAR RAPIDS	99.009	INDUSTRIAL COOLING TOWER	Particulate Matter (PM)	0.0005 %	BACT-PSD
				99.009	INDUSTRIAL COOLING TOWER	Particulate matter, filterable < 10 µ (FPM10)	0.0005 % EFF. DRIFT ELIMIN	BACT-PSD
FL-0284	PSD-FL-369 AND 0570261-007-AC	11/03/2006	DEPARTMENT OF SOLID WASTE MANAGEMENT HILLSBOROUGH COUNTY RESOURCE RECOVERY FACILITY	21.400	COOLING TOWER	Particulate matter, filterable < 10 µ (FPM10)	0.0010 % DRIFT RATE	BACT-PSD
OH-0303	01-01306	08/10/2006	ASALLIANCE BIOFUELS, LLC ASA BLOOMINGBURG, LLC	70.120	COOLING TOWER	Process Notes:	AVERAGE TOTAL DISSOLVED SOLIDS CONTENT OF 2000 PPM. MAXIMUM DRIFT LOSS FACTOR OF 0.005%	
				70.120	COOLING TOWER	Visible Emissions (VE)	10.0000 % OPACITY	BAT (Non-US ONLY)
FL-0293	0710004-010	04/04/2006	PROGRESS ENERGY FLORIDA CRYSTAL RIVER POWER PLANT	99.009	PORTABLE COOLING TOWER	Particulate Matter (PM)	0.0015 % DRIFT RATE	BACT-PSD
IL-0102	05010062	11/01/2005	AVENTINE RENEWABLE ENERGY, INC. AVENTINE RENEWABLE ENERGY, INC.	70.190	COOLING TOWER	Particulate Matter (PM)	0.0050 % DRIFT LOSS	BACT-PSD
IN-0119	033-19475-00092	05/31/2005	AUBURN NUGGET AUBURN NUGGET	99.009	COOLING TOWER	Particulate matter, filterable (FPM)	0.0050 % OF THROUGHPUT	BACT-PSD
				99.009	COOLING TOWER	Visible Emissions (VE)	20.0000 % OPACITY	BACT-PSD
NY-0093	1-2820-01015/00009	03/31/2005	TRIGEN-NASSAU ENERGY CORPORATION TRIGEN-NASSAU ENERGY CORPORATION	99.009	COOLING TOWER	Particulate matter, filterable < 10 µ (FPM10)	0.0005 % DRIFT	BACT-PSD
AZ-0047	1001653	12/01/2004	DOME VALLEY ENERGY PARTNERS WELLTON MOHAWK GENERATING STATION	99.009	MECHANICAL DRAFT COOLING TOWERS	Visible Emissions (VE)	5.0000 % OPACITY	BACT-PSD
NC-0112	08680T09	11/23/2004	NUCOR STEEL NUCOR STEEL	99.009	COOLING TOWERS	Particulate Matter (PM)	0.0080 %	BACT-PSD
MD-0032	CPCN CASE NO. 8888	11/05/2004	MIRANT MID-ATLANTIC, LLC DICKERSON	99.009	COOLING TOWER	Particulate Matter (PM)	0.0010 %	BACT-PSD
LA-0206	PSD-LA-667(M-1)	02/18/2004	EXXONMOBIL REFINING & SUPPLY CO BATON ROUGE REFINERY	99.009	COOLING TOWERS	Particulate matter, filterable < 10 µ (FPM10)	0.0030 % DRIFT	BACT-PSD
NE-0029	59094C05	01/21/2004	ABENGOA BIOENERGY CORPORATION ABENGOA BIOENERY CORPORATION - YORK	70.016	COOLING TOWER	Particulate Matter (PM)	0.0050 %	BACT-PSD
IN-0108	107-16823-00038	11/21/2003	NUCOR STEEL NUCOR STEEL	99.009	COOLING TOWERS	Process Notes:	17 cooling towers of various sizes and design capacities. Range from 1 cell , 750 gal/min to 9 cell 60,000 gal/min. Drift rate from each cooling tower shall not exceed 0.0005%.	
				99.009	COOLING TOWERS	Visible Emissions (VE)	20.0000 % OPACITY	BACT-PSD
AZ-0049	1001743	09/04/2003	ALLEGHENY ENERGY SUPPLY LLC LA PAZ GENERATING FACILITY	99.009	MECHANICAL DRAFT COOLING TOWERS FOR GE TURBINES	Particulate matter, filterable < 10 µ (FPM10)	0.0005 % BY VOL	BACT-PSD
				99.009	MECHANICAL DRAFT COOLING TOWERS FOR SIEMENS TURBINES	Particulate matter, filterable < 10 µ (FPM10)	0.0005 % BY VOL	BACT-PSD
WI-0204	03-DCF-048	08/14/2003	UNITED WISCONSIN GRAIN PRODUCERS UWGP - FUEL GRADE ETHANOL PLANT	99.009	COOLING TOWERS, P80	Process Notes:	0.005% DRIFT MAX.	
OH-0256	03-11250	07/10/2003	BRITISH PETROLEUM CHEMICALS, INC. LIMA CHEMICALS COMPLEX	99.009	COOLING TOWER	Visible Emissions (VE)	20.0000 % OPACITY	Other Case-by-Case
OH-0248	07-00505	09/24/2002	CALPINE CORPORATION LAWRENCE ENERGY	99.009	22 CELL MECHANICAL DRAFT COOLING TOWER	Visible Emissions (VE)	20.0000 % OPACITY	N/A
AR-0070	2009-AOP-R0	08/23/2002	GENOVA ARKANSAS I, LLC GENOVA ARKANSAS I, LLC	99.009	COOLING TOWER	Particulate matter, filterable < 10 µ (FPM10)	0.0010 % DRIFT LOSS	BACT-PSD
MS-0055	0540-00080	06/24/2002	EL PASO MERCHANT ENERGY CO. EL PASO MERCHANT ENERGY CO.	99.009	COOLING TOWER	Visible Emissions (VE)	40.0000 % OPACITY	Other Case-by-Case
OH-0264	16-02110	05/23/2002	NORTON ENERGY NORTON ENERGY STORAGE, LLC	99.003	COOLING TOWERS (3), MECHANICAL INDUCED DRAFT	Visible Emissions (VE)	10.0000 % OPACITY	BACT-PSD
TN-0153	0101-08PC AND 1010-05PCR	04/03/2002	WILLIAMS REFINING & MARKETING, L.L.C. WILLIAMS REFINING & MARKETING, L.L.C.	99.003	COOLING TOWER	Particulate matter, filterable < 10 µ (FPM10)	0.0050 % OF FLOW	BACT-PSD

RBLC Search Results: Cooling Tower

RBLC ID	PERMIT	DATE	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
OH-0268	03-13445	03/26/2002	Global Energy, Inc. LIMA ENERGY COMPANY	99.009	COOLING TOWER	Visible Emissions (VE)	20.0000 % OPACITY	BACT-PSD
OK-0056	2001-156-C PSD	02/12/2002	MUSTANG POWER LLC HORSESHOE ENERGY PROJECT	99.009	COOLING TOWERS	Particulate matter, filterable < 10 µ (FPM10)	0.0010 % DRIFT	BACT-PSD
				99.009	COOLING TOWERS	Process Notes:	The two four-cell cooling towers each will have a total flow of 8,400 GPM. Based on a total dissolved solids content of the water of 8,000 ppm and a drift of 0.0005%, potential emissions of 0.17 lb/hr and 0.74 T/Y are calculated. These two cooling towers will be considered insignificant sources for Title V purposes. For the six-cell cooling tower, a total flow of 94,638 GPM and total dissolved solids content of the water of 8,000 ppm equate to potential emissions of 3.78 lb/hr. These emissions units are considered trivial activities pursuant to Appendix J of OAC 252:100, but since PM emissions of 16.60 T/Y are anticipated, the six-cell tower will be permitted as a significant source.	
TX-0295	PSD-TX-1011	01/17/2002	SOUTH TEXAS ELECTRIC COOPERATIVE INC SAM RAYBURN GENERATION STATION	99.009	COOLING TOWER, COOLTWR	Process Notes:	CHROMIUM-BASED SOLUTIONS SHALL NOT BE USED IN THE COOLING TOWER. COOLING TOWER WILL HAVE DRIFT ELIMINATORS TO REDUCE DRIFT TO 0.0005% OF WATER FLOW.	
OH-0257	06-06313	12/27/2001	JACKSON COUNTY POWER, LLC JACKSON COUNTY POWER, LLC	99.009	COOLING TOWERS (4)	Visible Emissions (VE)	20.0000 % OPACITY	BACT-PSD
MS-0058	0400-00019	12/13/2001	CHOCTAW GAS GENERATION, LLC CHOCTAW GAS GENERATION, LLC	99.009	COOLING TOWER	Visible Emissions (VE)	40.0000 % OPACITY	Other Case-by-Case
PR-0007	14	10/29/2001	AES PUERTO RICO COGENERATION PLANT (AES-PRCP)	99.009	COOLING TOWER	Process Notes:	DRIFT RATE SHALL BE LIMITED TO 2.25 GAL/MIN (0.001% OF CIRCULATING WATER FLOW)	
MS-0047	1240-00028	09/28/2001	MUELLER CASTING COMPANY, INC. MUELLER CASTING COMPANY, INC.	99.009	SOUTH COOLING TOWER	Particulate matter, filterable < 10 µ (FPM10)	90.0000 % REDUCTION	BACT-PSD
				99.009	MID COOLING TOWER	Particulate matter, filterable < 10 µ (FPM10)	90.0000 % REDUCTION	BACT-PSD
				99.009	NORTH COOLING TOWER	Particulate matter, filterable < 10 µ (FPM10)	90.0000 % REDUCTION	BACT-PSD
OH-0263	03-13549	08/09/2001	CALPINE CORPORATION FREMONT ENERGY CENTER, LLC	99.009	COOLING TOWER, MECHANICAL DRAFT	Visible Emissions (VE)	20.0000 % OPACITY	BACT-PSD
TX-0326	PSD-TX-939	07/20/2000	THE AES AURORA AES WOLF HOLLOW LP	99.009	(2) COOLING TOWERS, E-CTOWER-W&-E	Visible Emissions (VE)	5.0000 % OPACITY	Other Case-by-Case
AK-0037	9923-AC010	03/21/2000	TESORO ALASKA COMPANY KENAI REFINERY	17.230	COOLING TOWER CAT, P719C	Visible Emissions (VE)	20.0000 % OPACITY	N/A
PR-0005	5	03/02/2000	PUERTO RICO ELECTRIC AUTHORITY (PREPA) SAN JUAN REPOWERING PROJECT	99.009	COOLING TOWER	Process Notes:	DRIFT LIMITED TO LESS THAN OR EQUAL TO 0.005% OF CIRCULATING FLOW USING 2 STAGES OF MIST ELIMINATORS	
TX-0293	PSD-TX-877	06/16/1999	GREGORY POWER PARTNERS LP GREGORY POWER FACILITY	99.009	COOLING TOWER	Visible Emissions (VE)	5.0000 % OPACITY	BACT-PSD
IN-0100	147-6713-00041	02/13/1997	AK STEEL CORPORATION ROCKPORT WORKS	99.009	COOLING TOWERS (2), NON-CONTACT	Particulate Matter (PM)	0.0050 % DRIFT	BACT-PSD
PR-0004	PR-0102	10/01/1996	ECOELECTRICA, L.P. ECOELECTRICA, L.P.	99.009	COOLING TOWER	Particulate matter, filterable < 10 µ (FPM10)	0.0015 % FLOW THROUGH	RACT
FL-0050	PSD-FL-139	08/30/1990	FLORIDA POWER CORPORATION FLORIDA POWER CORPORATION	99.009	COOLING TOWER, 4 EACH	Particulate Matter (PM)	0.0040 % OF CIRCULATION WAT	BACT-PSD
NY-0005	NONE	02/22/1982	POWER AUTHORITY STATE OF NEW YORK POWER AUTHORITY STATE OF NEW YORK	99.003	COOLING TOWER	Particulate Matter (PM)	0.0020 % OF H2O FLOW	BACT-PSD

RBLC Search Results: Boilers

RBLC ID	PERMIT	DATE	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
IL-0130	17040013	12/31/2018	JACKSON ENERGY CENTER	13.31	Auxiliary Boiler	Nitrogen Oxides (NOx)	0.01 LB/MMBTU (3-HOUR AVERAGE)	LAER
				13.31	Auxiliary Boiler	Carbon Monoxide	0.037 LB/MMBTU (3-HOUR)	BACT-PSD
				13.31	Auxiliary Boiler	Particulate matter, total (TPM)	0.0075 LB/MMBTU (3-HOUR AVERAGE); 0.0019 LB/MMBTUD (3-HOUR AVERAGE)	BACT-PSD
				13.31	Auxiliary Boiler	Sulfuric Acid (mist, vapors, etc)	0.1 POUNDS/HOUR	BACT-PSD
				13.31	Auxiliary Boiler	Carbon Dioxide Equivalent (CO2e)	11250 TONS/YEAR (12-MONTH ROLLING AVERAGE)	BACT-PSD
LA-0246	PSD-LA-619(M6)	12/31/2010	ST. CHARLES REFINERY	13.31	EQT0323 - Boiler 401F	Particulate matter, total < 10 µ (TPM10)	0.74 LB/H (HOURLY MAXIMUM)	BACT-PSD
				13.31	EQT0323 - Boiler 401F	Carbon Monoxide	8.15 LB/H (HOURLY MAXIMUM)	BACT-PSD
				13.31	EQT0323 - Boiler 401F	Volatile Organic Compounds (VOC)	0.53 LB/H (HOURLY MAXIMUM)	BACT-PSD
				13.31	EQT0323 - Boiler 401F	Sulfur Dioxide (SO2)	2.54 LB/H (HOURLY MAXIMUM)	BACT-PSD
				13.31	EQT0323 - Boiler 401F	Nitrogen Oxides (NOx)	0.04 LB/MMBTU; 3.96 LB/H (HOURLY MAXIMUM)	BACT-PSD
LA-0294	PSD-LA-627(M-3)	12/30/2013	DODSON DIVISION	11.12	Wood-Fired Boiler (017, EQT 6)	Volatile Organic Compounds (VOC)	3.45 LB/H (HOURLY MAXIMUM); 11.8 T/YR (ANNUAL MAXIMUM)	BACT-PSD
TX-0585	PSDTX1123 AND HAP13, 84167	12/30/2010	TENASKA TRAILBLAZER ENERGY CENTER	11.11	Coal-fired Boiler	Carbon Monoxide	0.1 LB/MMBTU (30-DAY ROLLING); 0.1 LB/MMBTU (12-MONTH ROLLING)	BACT-PSD
				11.11	Coal-fired Boiler	Particulate matter, total < 10 µ (TPM10)	0.012 LB/MMBTU (12-MONTH ROLLING AVG); 99.68 LB/H (1-H)	BACT-PSD
				11.11	Coal-fired Boiler	Particulate matter, total < 10 µ (TPM10)	0.025 LB/MMBTU (12-MONTH ROLLING AVG); 207.68 LB/H (1-H)	BACT-PSD
				11.11	Coal-fired Boiler	Volatile Organic Compounds (VOC)	0.0036 LB/MMBTU (12-MONTH ROLLING AVG); 29.91 LB/H (1-H)	BACT-PSD
				11.11	Coal-fired Boiler	Sulfuric Acid (mist, vapors, etc)	0.0037 LB/MMBTU (12-MONTH ROLLING)	BACT-PSD
				11.11	Coal-fired Boiler	Hydrochloric Acid	0.0006 LB/MMBTU (12-MONTH ROLLING); 5.2 LB/H (1-H)	MACT
				11.11	Coal-fired Boiler	Hydrogen Fluoride	0.0005 LB/MMBTU (12-MONTH ROLLING); 4.15 LB/H (1-H)	MACT
				11.11	Coal-fired Boiler	Lead (Pb) / Lead Compounds	0 LB/MMBTU (12-MONTH ROLLING)	BACT-PSD
				11.11	Coal-fired Boiler	Ammonia (NH3)	10 PPMVD (12-MONTH ROLLING)	BACT-PSD
				11.11	Coal-fired Boiler	Mercury	0 LB/MMBTU (12-MONTH ROLLING)	MACT
				11.11	Coal-fired Boiler	Nitrogen Oxides (NOx)	0.05 LB/MMBTU (12-MONTH ROLLING); 0.06 LB/MMBTU (30-DAY ROLLING)	BACT-PSD
				11.11	Coal-fired Boiler	Sulfur Dioxide (SO2)	0.06 LB/MMBTU (30-DAY ROLLING); 0.06 LB/MMBTU (12-MONTH ROLLING)	BACT-PSD
VT-0022	AOP-09-034	12/30/2009	WEIDMANN ELECTRICAL TECHNOLOGY, INC.	13.21	WEST BUILDING BOILER #3	Sulfur Dioxide (SO2)	0.5 % SULFUR CONTENT	BACT-PSD
OH-0338	P0106805	12/29/2010	DP & L, KILLEN GENERATING STATION	11.19	Utility Boiler, dry bottom, wall-fired	Carbon Monoxide	889.2 LB/H (AS A 24-HOUR AVERAGE); 3895 T/YR	BACT-PSD
				11.19	Utility Boiler, dry bottom, wall-fired	Particulate matter, total (TPM)	0	OTHER CASE-BY-CASE
				11.19	Utility Boiler, dry bottom, wall-fired	Nitrogen Oxides (NOx)	0	OTHER CASE-BY-CASE
				11.19	Utility Boiler, dry bottom, wall-fired	Sulfur Dioxide (SO2)	0	OTHER CASE-BY-CASE
				11.19	Utility Boiler, dry bottom, wall-fired	Volatile Organic Compounds (VOC)	0.0034 LB/MMBTU (OF ACTUAL HEAT INPUT)	OTHER CASE-BY-CASE
				11.19	Utility Boiler, dry bottom, wall-fired	Visible Emissions (VE)	0	OTHER CASE-BY-CASE
OR-0048	25-0016-ST-02	12/29/2010	CARTY PLANT	13.31	NATURAL GAS-FIRED BOILER	Nitrogen Oxides (NOx)	4.5 LB/H	BACT-PSD
				13.31	NATURAL GAS-FIRED BOILER	Particulate matter, total < 10 µ (TPM10)	2.5 LB/MMCF	BACT-PSD
MI-0389	341-07	12/29/2009	KARN WEADOCK GENERATING COMPLEX	11.11	BOILER	Hydrochloric Acid	0.001 LB/MMBTU (TEST METHOD)	OTHER CASE-BY-CASE
				11.11	BOILER	Hydrogen Fluoride	0.0001 LB/MMBTU (TEST METHOD)	OTHER CASE-BY-CASE
				11.11	BOILER	Particulate matter, filterable (FPM)	0.011 LB/MMBTU (TEST METHOD)	BACT-PSD
				11.11	BOILER	Particulate matter, total < 10 µ (TPM10)	0.024 LB/MMBTU (TEST METHOD); 196.6 LB/H (TEST METHOD)	BACT-PSD
				11.11	BOILER	Sulfur Dioxide (SO2)	0.06 LB/MMBTU (30-DAY ROLLING); 491.4 LB/H (24-HOUR ROLLING)	BACT-PSD
				11.11	BOILER	Nitrogen Oxides (NOx)	0.05 LB/MMBTU (30-DAY ROLLING); 409.5 LB/H (24-HOUR ROLLING)	BACT-PSD
				11.11	BOILER	Carbon Monoxide	0.125 LB/MMBTU (24-HOUR ROLLING); 1023.8 LB/H (24-HOUR ROLLING)	BACT-PSD
				11.11	BOILER	Volatile Organic Compounds (VOC)	0.003 LB/MMBTU (TEST METHOD); 24.6 LB/H (TEST METHOD)	BACT-PSD
				11.11	BOILER	Lead (Pb) / Lead Compounds	0 (SEE NOTE BELOW)	BACT-PSD
				11.11	BOILER	Mercury	0.0079 LB/GWH (12-MONTH ROLLING)	BACT-PSD
				11.11	BOILER	Sulfuric Acid (mist, vapors, etc)	0.004 LB/MMBTU (TEST METHOD)	BACT-PSD
				12.31	AUXILARY BOILER	Nitrogen Oxides (NOx)	0.018 LB/MMBTU (30-DAY ROLLING)	BACT-PSD
				12.31	AUXILARY BOILER	Volatile Organic Compounds (VOC)	0.0013 LB/MMBTU (TEST METHOD)	BACT-PSD
				12.31	AUXILARY BOILER	Carbon Monoxide	0.035 LB/MMBTU (TEST METHOD)	OTHER CASE-BY-CASE
FL-0323	PSD-FL-411 (0010131-001-AC)	12/28/2010	GAINESVILLE RENEWABLE ENERGY CENTER	12.12	Biomass bubbling fludized bed (BFB) boiler	Carbon Monoxide	0.12 LB/MMBTU (30-DAY ROLLING BY CEMS); 0.08 LB/MMBTU (30-DAY ROLLING BY CEMS)	BACT-PSD
				12.12	Biomass bubbling fludized bed (BFB) boiler	Hydrochloric Acid	2.22 LB/H (INITIAL STACK TEST (CAN USE RATA)); 9.72 T/YR (EMISSION CAP) (12-MONTH, ROLLED MONTHLY BY CEMS)	OTHER CASE-BY-CASE

RBLC Search Results: Boilers

RBLC ID	PERMIT	DATE	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				12.12	Biomass bubbling fludized bed (BFB) boiler	Hydrogen Fluoride	2.22 LB/H (INITIAL STACK TEST (CAN USE RATA)); 9.72 T/YR (EMISSION CAP) (12-MONTH, ROLLED MONTHLY BY CEMS)	OTHER CASE-BY-CASE
				12.12	Biomass bubbling fludized bed (BFB) boiler	Particulate matter, total < 10 µ (TPM10)	0.015 LB/MMBTU (INITIAL AND ANNUAL STACK TEST)	BACT-PSD
				12.12	Biomass bubbling fludized bed (BFB) boiler	Visible Emissions (VE)	10 % OPACITY (6-MINUTE BLOCKS BY COMS); 20 % OPACITY(ONCE/H) (INITIAL STACK TEST)	BACT-PSD
				12.12	Biomass bubbling fludized bed (BFB) boiler	Volatile Organic Compounds (VOC)	0.01 LB/MMBTU (INITIAL AND ANNUAL STACK TEST); 0.009 LB/MMBTU (INITIAL AND ANNUAL SATCK TEST)	BACT-PSD
				12.12	Biomass bubbling fludized bed (BFB) boiler	Ammonia (NH3)	10 PPMVD (INITAL AND ANNUAL TEST)	OTHER CASE-BY-CASE
				12.12	Biomass bubbling fludized bed (BFB) boiler	Hazardous Air Pollutants (HAP)	24.7 T/YR (12-MONTH BLOCKS; CEMS AND STACK TEST)	OTHER CASE-BY-CASE
				12.12	Biomass bubbling fludized bed (BFB) boiler	Nitrogen Oxides (NOx)	1 LB/MW-H (30-DAY ROLLING BY CEMS); 0.07 LB/MMBTU (24-HOUR ROLLING BY CEMS)	OTHER CASE-BY-CASE
				12.12	Biomass bubbling fludized bed (BFB) boiler	Sulfur Dioxide (SO2)	1.4 LB/MWH (30-DAY ROLLING BY CEMS); 0.029 LB/MMBTU (24-HOUR ROLLING BY CEMS)	OTHER CASE-BY-CASE
				12.12	Biomass bubbling fludized bed (BFB) boiler	Sulfuric Acid (mist, vapors, etc)	1.4 LB/H (INITIAL AND ANNUAL TESTS)	OTHER CASE-BY-CASE
*PA-0314	63-00922D	12/27/2017	BEECH HOLLOW	11.31	NATURAL GAS-FIRED AUXILIARY BOILER	Nitrogen Oxides (NOx)	0.02 LBS (MMBTU)	
				11.31	NATURAL GAS-FIRED AUXILIARY BOILER	Carbon Monoxide	0.055 LBS (MMBTU)	
PA-0309	35-00069A	12/23/2015	LACKAWANNA ENERGY CTR/JESSUP	13.31	Auxillary Boiler	Carbon Monoxide	0.037 LB/MMBTU; 13.68 TONS (12-MONTH ROLLING BASIS)	BACT-PSD
				13.31	Auxillary Boiler	Particulate matter, filterable (FPM)	0.002 LB/MMBTU; 0.69 TONS (12-MONTH ROLLING BASIS)	BACT-PSD
				13.31	Auxillary Boiler	Particulate matter, total < 10 µ (TPM10)	0.007 LB/MMBTU; 2.59 TONS (12-MONTH ROLLING BASIS)	BACT-PSD
				13.31	Auxillary Boiler	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.007 LB/MMBTU; 2.59 TONS (12-MONTH ROLLING BASIS)	BACT-PSD
				13.31	Auxillary Boiler	Carbon Dioxide Equivalent (CO2e)	44107 TON (12-MONTH ROLLING BASIS)	BACT-PSD
				13.31	Auxillary Boiler	Ammonia (NH3)	5 PPMDV @ 15% O2 (12-MONTH ROLLING BASIS)	BACT-PSD
				13.31	Auxillary Boiler	Sulfuric Acid (mist, vapors, etc)	0.0001 LB/MMBTU; 0.05 TONS (12-MONTH ROLLING BASIS)	BACT-PSD
				13.31	Auxillary Boiler	Nitrogen Oxides (NOx)	0.006 LB/MMBTU (30-DAY ROLLING AVERAGE BASIS); 2.22 TPY (12-MOTH ROLLING BASIS)	LAER
				13.31	Auxillary Boiler	Volatile Organic Compounds (VOC)	0.005 LB/MMBTU (30-DAY ROLLING BASIS); 1.85 TONS (12-MONTH ROLLING BASIS)	LAER
FL-0322	PSD-FL-412 (0510032-001-AC)	12/23/2010	SWEET SORGHUM-TO-ETHANOL ADVANCED BIOREFINERY	12.12	Cogeneration Biomass Boiler	Sulfur Dioxide (SO2)	0.06 LB/MMBTU (30-DAY ROLLING BY CEMS)	BACT-PSD
				12.12	Cogeneration Biomass Boiler	Carbon Monoxide	0.1 LB/MMBTU (30-DAY ROLLING BY CEMS); 240 T/YR (12-MONTH ROLLING BY CEMS)	BACT-PSD
				12.12	Cogeneration Biomass Boiler	Sulfuric Acid (mist, vapors, etc)	0.003 LB/MMBTU (INITIAL AND ANNUAL STACK TEST)	OTHER CASE-BY-CASE
				12.12	Cogeneration Biomass Boiler	Hydrochloric Acid	2 T/YR (12-MONTH ROLLING MONTHLY BY CEMS)	OTHER CASE-BY-CASE
				12.12	Cogeneration Biomass Boiler	Hazardous Air Pollutants (HAP)	20 T/YR (12-MONTH BLOCKS; CEMS + STACK TEST)	OTHER CASE-BY-CASE
				12.12	Cogeneration Biomass Boiler	Particulate matter, total < 10 µ (TPM10)	0.015 LB/MMBTU (INITIAL AND ANNUAL STACK TEST)	BACT-PSD
				12.12	Cogeneration Biomass Boiler	Hydrogen Fluoride	0.475 LB/H (INITIAL AND ANNUAL TEST)	OTHER CASE-BY-CASE
				12.12	Cogeneration Biomass Boiler	Nitrogen Oxides (NOx)	0.1 LB/MMBTU (30-DAY ROLLING BY CEMS); 0.08 LB/MMBTU (30-DAY ROLLING BY CEMS)	BACT-PSD
				12.12	Cogeneration Biomass Boiler	Volatile Organic Compounds (VOC)	0.01 LB/MMBTU (INITIAL AND ANNUAL TESTS)	BACT-PSD
				12.12	Cogeneration Biomass Boiler	Visible Emissions (VE)	10 % OPACITY	BACT-PSD
SC-0111	1680-0046-CU	12/22/2009	FLAKEBOARD AMERICA LIMITED - BENNETTSVILLE MDF	13.12	SANDERDUST BOILER	Particulate matter, total < 10 µ (TPM10)	0.025 LB/MMBTU (3-HOURS)	BACT-PSD
				13.12	SANDERDUST BOILER	Nitrogen Oxides (NOx)	1.23 LB/MMBTU (3-HOURS)	BACT-PSD
				13.12	SANDERDUST BOILER	Carbon Monoxide	0.3 LB/MMBTU (3-HOURS)	BACT-PSD
				13.12	SANDERDUST BOILER	Volatile Organic Compounds (VOC)	0.1 LB/MMBTU (3-HOURS)	BACT-PSD
MI-0441	74-18	12/21/2018	LBWL--ERICKSON STATION	13.31	EUAUXBOILER--natural gas fired auxiliary boiler rated at <= 99MMBTU/H	Nitrogen Oxides (NOx)	30 PPM (@3%O2; HOURLY)	BACT-PSD
				13.31	EUAUXBOILER--natural gas fired auxiliary boiler rated at <= 99MMBTU/H	Carbon Monoxide	50 PPM (@3%O2; HOURLY)	BACT-PSD

RBLC Search Results: Boilers

RBLC ID	PERMIT	DATE	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				13.31	EUAUXBOILER--natural gas fired auxiliary boiler rated at <= 99MMBTU/H	Particulate matter, total < 10 µ (TPM10)	0.74 LB/H (HOURLY)	BACT-PSD
				13.31	EUAUXBOILER--natural gas fired auxiliary boiler rated at <= 99MMBTU/H	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.74 LB/H (HOURLY)	BACT-PSD
				13.31	EUAUXBOILER--natural gas fired auxiliary boiler rated at <= 99MMBTU/H	Volatile Organic Compounds (VOC)	0.5 LB/H (HOURLY)	BACT-PSD
				13.31	EUAUXBOILER--natural gas fired auxiliary boiler rated at <= 99MMBTU/H	Carbon Dioxide Equivalent (CO2e)	50776 T/YR (12-MO ROLLING TIME PERIOD)	BACT-PSD
OH-0378	P0124972	12/21/2018	PTTGCA PETROCHEMICAL COMPLEX	11.39	Natural Gas and Ethane-Fired Steam Boilers (B007 - B009)	Nitrogen Oxides (NOx)	0.02 LB/MMBTU (DURING STARTUP AND SHUTDOWN. SEE NOTES.); 4 LB/H (AS ROLLING 30-DAY AVG. SEE NOTES.)	BACT-PSD
				11.39	Natural Gas and Ethane-Fired Steam Boilers (B007 - B009)	Carbon Monoxide	14 LB/H; 30.7 T/YR (PER ROLLING 12 MONTH PERIOD. SEE NOTES.)	BACT-PSD
				11.39	Natural Gas and Ethane-Fired Steam Boilers (B007 - B009)	Volatile Organic Compounds (VOC)	2.16 LB/H; 4.73 T/YR (PER ROLLING 12 MONTH PERIOD. SEE NOTES.)	BACT-PSD
				11.39	Natural Gas and Ethane-Fired Steam Boilers (B007 - B009)	Particulate matter, total (TPM)	2 LB/H; 4.38 T/YR (PER ROLLING 12 MONTH PERIOD. SEE NOTES.)	BACT-PSD
				11.39	Natural Gas and Ethane-Fired Steam Boilers (B007 - B009)	Particulate matter, total < 10 µ (TPM10)	2 LB/H; 4.38 T/YR (PER ROLLING 12 MONTH PERIOD. SEE NOTES.)	BACT-PSD
				11.39	Natural Gas and Ethane-Fired Steam Boilers (B007 - B009)	Particulate matter, total < 2.5 Âµ (TPM2.5)	2 LB/H; 4.38 T/YR (PER ROLLING 12 MONTH PERIOD. SEE NOTES.)	BACT-PSD
				11.39	Natural Gas and Ethane-Fired Steam Boilers (B007 - B009)	Carbon Dioxide Equivalent (CO2e)	102500 T/YR (PER ROLLING 12 MONTH PERIOD. SEE NOTES.)	BACT-PSD
				11.39	Natural Gas and Ethane-Fired Steam Boilers (B007 - B009)	Visible Emissions (VE)	0	BACT-PSD
IN-0156	183-27145-00030	12/21/2012	STEEL DYNAMICS, INC. - STRUCTURAL AND RAIL DIVISION	99.009	COOLING TOWER: LVD BOILER (CONTACT) ID#15G	Particulate matter, filterable (FPM)	0.005 % DRIFT RATE	BACT-PSD
				99.009	COOLING TOWER: LVD BOILER (CONTACT) ID#15G	Particulate matter, total < 10 µ (TPM10)	0.005 % DRIFT RATE	BACT-PSD
MI-0399	93-09A	12/21/2010	DETROIT EDISON--MONROE	11.11	Boiler Units 1, 2, 3 and 4	Carbon Monoxide	0.15 LB/MMBTU (EACH, 30D ROLL. AVG. EXCL. STRTUP&SHTDWN); 27446.4 LB/D (EACH, 30D ROLLING AVG.)	BACT-PSD
				11.11	Boiler Units 1, 2, 3 and 4	Nitrogen Oxides (NOx)	0.08 LB/MMBTU (EACH, 12-MONTH ROLLING AVG.); 222.6 T/MO (EACH, 12-MONTH ROLLING AVG.)	BACT-PSD
				11.11	Boiler Units 1, 2, 3 and 4	Particulate matter, filterable (FPM)	0.011 LB/MMBTU (EACH, TEST/ OR 24H ROLL.AVG. IF PM CEMS); 10 OPAC (EACH, 6 MIN AVG TEST /OR COMS)	BACT-PSD
				11.11	Boiler Units 1, 2, 3 and 4	Sulfur Dioxide (SO2)	0.107 LB/MMBTU (EACH, 24-H ROLL. AVG.); 815.8 LB/H (EACH, 24-H ROLL. AVG.)	BACT-PSD
				11.11	Boiler Units 1, 2, 3 and 4	Volatile Organic Compounds (VOC)	0.0034 LB/MMBTU (EACH, TEST PROTOCOL); 25.9 LB/H (EACH, TEST PROTOCOL)	BACT-PSD
				11.11	Boiler Units 1, 2, 3 and 4	Particulate matter, total < 10 µ (TPM10)	0.024 LB/MMBTU (EACH, TEST); 183 LB/H (EACH, TEST)	BACT-PSD
				11.11	Boiler Units 1, 2, 3 and 4	Lead (Pb) / Lead Compounds	0 LB/MMBTU (EACH, TEST); 0.13 LB/H (EACH, TEST)	BACT-PSD
				11.11	Boiler Units 1, 2, 3 and 4	Sulfuric Acid (mist, vapors, etc)	0.005 LB/MMBTU (EACH, TEST)	BACT-PSD
				11.11	Boiler Units 1, 2, 3 and 4	Hydrogen Fluoride	0.0002 LB/MMBTU (EACH, TEST)	BACT-PSD
				11.11	Boiler Units 1, 2, 3 and 4	Mercury	0.02 LB/GW-H (EACH, 12MO. ROLL. AVG.-CEMS); 143.1 LB/YR (UNITS 1&4, 12MO.ROLL.-CEMS)	OTHER CASE-BY-CASE
				11.11	Boiler Units 1, 2, 3 and 4	Arsenic / Arsenic Compounds	6.3 E-6 LB/MMBTU (EACH, TEST PROTOCOL)	OTHER CASE-BY-CASE
				11.11	Boiler Units 1, 2, 3 and 4	Hydrochloric Acid	0.0024 LB/MMBTU (LIMIT IS FOR EACH BOILER; TEST)	OTHER CASE-BY-CASE
TX-0659	PSDTX1320, 2165	12/20/2013	DEER PARK PLANT	11.31	Boiler	Nitrogen Oxides (NOx)	0.01 LB/MMBTU (1-HR)	BACT-PSD
TX-0700	8576 8579 PSDTX371M5	12/20/2013	LIMESTONE ELECTRIC GENERATING STATION	11.11	(2) coal-fired boilers	Carbon Monoxide	0.33 LB/MMBTU (24-HR ROLLING AVERAGE)	BACT-PSD
				11.11	(2) coal-fired boilers	Particulate matter, total (TPM)	0.03 LB/MMBTU	BACT-PSD
				11.11	(2) coal-fired boilers	Particulate matter, total < 10 µ (TPM10)	0.03 LB/MMBTU	BACT-PSD
				11.11	(2) coal-fired boilers	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.03 LB/MMBTU	BACT-PSD
TX-0707	2165 PSDTX1320	12/20/2013	CHEMICAL MANUFACTURING FACILITY	11.31	(2) boilers	Nitrogen Oxides (NOx)	0.01 LB/MMBTU (1 HOUR)	BACT-PSD
				11.31	(2) boilers	Carbon Monoxide	50 PPMVD (@3% O2, ONE HOUR AVERAGE)	BACT-PSD
				11.31	(2) boilers	Particulate matter, total < 2.5 Âµ (TPM2.5)	0	BACT-PSD
TX-0720	9708, PSDTX861M3	12/20/2013	VALERO MCKEE REFINERY	19.6	Boilers	Nitrogen Oxides (NOx)	0.015 LB/MMBTU (HOURLY BASIS); 0.01 LB/MMBTU (ANNUALLY)	BACT-PSD
				19.6	Boilers	Carbon Monoxide	100 PPMV (AT 3% OXYGEN, HOURLY); 50 PPMV (AT 3% OXYGEN, ANNUALLY)	BACT-PSD
				19.6	Boilers	Ammonia (NH3)	10 PPMV (AMMONIA SLIP FROM SCR, HOURLY AND ANNUAL)	BACT-PSD
SC-0108	0640-0013-CN	12/20/2010	CHESTER WOOD PRODUCTS LLC	12.12	HOG FUEL BOILER	Carbon Monoxide	1400 PPM BY VOL DRY BASIS (3% OXYGEN, 30-DAY ROLLING AVERAGE)	BACT-PSD
*FL-0369	0390009-012-AC	12/19/2018	HAVANA MILL	11.12	Boilers 4 and 5	Carbon Monoxide	770 PPMVD @ 3% O2; 18.54 LB/HOUR	BACT-PSD
				11.12	Boiler 3	Carbon Monoxide	3500 PPMVD @ 3% O2; 238 LB/HOUR	BACT-PSD
TX-0714	102731 PSDTX1294	12/19/2014	S R BERTRON ELECTRIC GENERATING STATION	13.31	boiler	Nitrogen Oxides (NOx)	0.036 LB/MMBTU (3-HR ROLLING)	BACT-PSD
				13.31	boiler	Carbon Monoxide	0.037 LB/MMBTU (3-HR ROLLING AVERAGE)	BACT-PSD

RBLC Search Results: Boilers

RBLC ID	PERMIT	DATE	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
KY-0111	V-11-051 R3	12/18/2019	PHOENIX PAPER WICKLIFFE LLC	11.31	#1 Power Boiler	Volatile Organic Compounds (VOC)	5.5 LB/MMSCF; 7.78 TONS/YEAR (12-MONTH ROLLING FOR #1 POWER BOILER)	OTHER CASE-BY-CASE
				11.31	#1 Power Boiler	Carbon Dioxide Equivalent (CO2e)	119099 LB/MMSCF; 168525.6 TONS/YEAR (12-MONTH ROLLING FOR #1 POWER BOILER)	N/A
				11.31	#2 Power Boiler	Carbon Dioxide Equivalent (CO2e)	119099 LB/MMSCF; 53928.4 TONS/YEAR (12-MONTH ROLLING FOR #2 POWER BOILER)	N/A
				11.31	#2 Power Boiler	Volatile Organic Compounds (VOC)	5.5 LB/MMSCF; 2.5 TONS/YEAR (12-MONTH ROLLING FOR #2 POWER BOILER)	N/A
PA-0296	06-05150A	12/17/2013	BERKS HOLLOW ENERGY ASSOC LLC/ONTELAUNEE	13.31	Auxiliary Boiler	Carbon Monoxide	3.31 T/YR (12-MONTH ROLLING TOTAL)	OTHER CASE-BY-CASE
				13.31	Auxiliary Boiler	Carbon Dioxide Equivalent (CO2e)	12346 T/YR	OTHER CASE-BY-CASE
				13.31	Auxiliary Boiler	Nitrogen Oxides (NOx)	1.01 T/YR (12-MONTH ROLLING TOTAL)	OTHER CASE-BY-CASE
				13.31	Auxiliary Boiler	Particulate matter, total < 10 µ (TPM10)	0.46 T/YR	OTHER CASE-BY-CASE
				13.31	Auxiliary Boiler	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.46 T/YR (BASED ON 12-MONTH ROLLING TOTAL)	N/A
				13.31	Auxiliary Boiler	Sulfur Oxides (SOx)	0.19 T/YR (BASED ON 12-MONTH ROLLING TOTAL)	N/A
				13.31	Auxiliary Boiler	Sulfuric Acid (mist, vapors, etc)	0.04 T/YR (BASED ON 12-MONTH ROLLING TOTAL)	N/A
				13.31	Auxiliary Boiler	Total Suspended Particulates	0.46 T/YR (BASED ON 12-MONTH ROLLING TOTAL)	N/A
				13.31	Auxiliary Boiler	Volatile Organic Compounds (VOC)	0.14 T/YR (BASED ON 12-MONTH ROLLING TOTAL)	N/A
GA-0141	4911-301-0016-P-01-0	12/17/2010	WARREN COUNTY BIOMASS ENERGY FACILITY	11.12	Boiler, Biomass Wood	Nitrogen Oxides (NOx)	0.1 LB/MMBTU (30 D ROLLING AV / CONDITION 2.9); 648 TONS (12 MONTH ROLLING TOTAL / CONDITION 2.18)	BACT-PSD
				11.12	Boiler, Biomass Wood	Sulfur Oxides (SOx)	0.01 LB/MMBTU (30 D ROLLING AV / CONDITION 2.12); 56 TONS (12 MONTH ROLLING TOTAL / CONDITION 2.20)	BACT-PSD
				11.12	Boiler, Biomass Wood	Carbon Monoxide	0.08 LB/MMBTU (30 D ROLLING AV / CONDITION 2.13); 625 TONS (12 MONTH ROLLING TOTAL / CONDITION 2.19)	BACT-PSD
				11.12	Boiler, Biomass Wood	Particulate matter, total < 10 µ (TPM10)	0.01 LB/MMBTU ((FILTERABLE) 30 H AV / CONDITION 2.10); 0.018 LB/MMBTU ((TOTAL) 3 H AV / CONDITION 2.11)	BACT-PSD
				11.12	Boiler, Biomass Wood	Particulate matter, total < 2.5 µ (TPM2.5)	0.018 LB/MMBTU ((TOTAL) 3 H AV/ CONDITION 2.11)	BACT-PSD
MO-0078	122010-011	12/17/2010	THOMAS HILL ENGERGY CENTER	11.11	Unit 1 Cyclone Boiler	Carbon Monoxide	0.55 LB/MMBTU (30-DAY ROLLING AVERAGE); 13873 T/YR (12-MONTH ROLLING AVERAGE)	BACT-PSD
				11.11	Unit 2 Cyclone Boiler	Carbon Monoxide	0.55 LB/MMBTU (30-DAY ROLLING AVERAGE); 13873 T/YR (12-MONTH ROLLING AVERAGE)	BACT-PSD
MO-0084	122010-018	12/17/2010	NEW MADRID POWER PLANT	11.11	UNIT 1 CYCLONE BOILER	Carbon Monoxide	0.55 LB/MMBTU (30-DAY ROLLING AVG); 34449 T/YR	BACT-PSD
				11.11	UNIT 2 CYCLONE BOILER	Carbon Monoxide	0.55 LB/MMBTU (30-DAY ROLLING AVG); 34449 T/YR	BACT-PSD
AL-0272	406-5003-X018	12/16/2014	THE WESTERVELT COMPANY	30.8	Wood fired boiler	Nitrogen Oxides (NOx)	0.22 LB/MMBTU; 27.5 LB/H	BACT-PSD
OH-0336	P0106678	12/14/2010	CAMPBELL SOUP COMPANY	12.31	Boilers (3)	Nitrogen Oxides (NOx)	0.04 LB/MMBTU (BASED ON MFG. GUARANTEE); 63.08 T/YR (ROLLING 12 MO. FROM 3 BOILERS TOGETHER)	OTHER CASE-BY-CASE
				12.31	Boilers (3)	Particulate matter, total < 10 µ (TPM10)	0.01 LB/MMBTU (BASED ON MFG. GUARANTEE); 19.71 T/YR (ROLLING 12 MO. FROM 3 BOILERS TOGETHER)	OTHER CASE-BY-CASE
				12.31	Boilers (3)	Volatile Organic Compounds (VOC)	0.0054 LB/MMBTU (AP-42 FACTOR); 8.5 T/YR (ROLLING 12 MO. FROM 3 BOILERS TOGETHER)	OTHER CASE-BY-CASE
				12.31	Boilers (3)	Sulfur Dioxide (SO2)	0.0006 LB/MMBTU (AP-42 FACTOR); 0.96 T/YR (ROLLING 12 MO. FROM 3 BOILERS TOGETHER)	OTHER CASE-BY-CASE
				12.31	Boilers (3)	Carbon Monoxide	0.075 LB/MMBTU (BASED ON MFG. GUARANTEE); 118.26 T/YR (ROLLING 12 MO. FROM 3 BOILERS TOGETHER)	BACT-PSD
				12.31	Boilers (3)	Visible Emissions (VE)	20 % (AS A 6-MINUTE AVERAGE)	OTHER CASE-BY-CASE
SC-0160	0200-0150-CE.R1	12/13/2012	US8 FACILITY	13.31	BOILERS (BL01) & (BL02)	Volatile Organic Compounds (VOC)	0.18 LB/H; 0.0054 LB/MMBTU	BACT-PSD
LA-0352	PSD-LA-788(M3)	12/12/2019	PLAQUEMINE ETHYLENE PLANT 1	12.31	BP Steam Boiler Packages (EU-2/EU-2, EQT0266/EQT0267)	Nitrogen Oxides (NOx)	0.021 LB/MM BTU (30 DAY ROLLING AVERAGE)	LAER
LA-0374	PSD-LA-788(M3)	12/12/2019	PLAQUEMINE ETHYLENE PLANT 1	11.31	HP Steam Boiler, EQT0266	Nitrogen Oxides (NOx)	0.021 LB/MM BTU	LAER
*IN-0218	091-34002-00002	12/11/2014	SABIC INNOVATIVE PLASTICS MT. VERNON, LC	12.31	NATURAL GAS-FIRED AUXILIARY BOILER (AUX BOILER)	Carbon Dioxide Equivalent (CO2e)	133521 T/YR	
				12.31	NATURAL GAS-FIRED AUXILIARY BOILER (AUX 2 BOILER)	Carbon Dioxide Equivalent (CO2e)	133521 T/YR	
				12.31	NATURAL GAS-FIRED BOILER (CG1 BOILER)	Carbon Dioxide Equivalent (CO2e)	133521 T/YR	
TX-0558	PSDTX1072	12/11/2009	LIMESTONE ELECTRIC GENERATING STATION	11.1	Unit 3 Boiler	Nitrogen Oxides (NOx)	0.07 LB/MMBTU (30-DAY AVERAGE); 0.05 LB/MMBTU (ANNUAL AVERAGE)	BACT-PSD
				11.1	Unit 3 Boiler	Sulfur Dioxide (SO2)	0.1 LB/MMBTU (30-DAY AVERAGE); 0.06 LB/MMBTU (ANNUAL AVERAGE)	BACT-PSD

RBLC Search Results: Boilers

RBLC ID	PERMIT	DATE	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				11.1	Unit 3 Boiler	Particulate matter, total (TPM)	0.015 LB/MMBTU (FILTERABLE); 0.035 LB/MMBTU (TOTAL (FILTERABLE PLUS CONDENSABLE))	BACT-PSD
				11.1	Unit 3 Boiler	Carbon Monoxide	0.15 LB/MMBTU (30-DAY AVERAGE)	BACT-PSD
				11.1	Unit 3 Boiler	Volatile Organic Compounds (VOC)	0.0036 LB/MMBTU (ANNUAL)	BACT-PSD
				11.1	Unit 3 Boiler	Sulfuric Acid (mist, vapors, etc)	0.0075 LB/MMBTU (ANNUAL)	BACT-PSD
				11.1	Unit 3 Boiler	Lead (Pb) / Lead Compounds	11.4 LB/TBTU	BACT-PSD
				11.1	Unit 3 Boiler	Hydrochloric Acid	0.0023 LB/MMBTU	BACT-PSD
				11.1	Unit 3 Boiler	Mercury	0.02 LB/GWH	BACT-PSD
				11.1	Unit 3 Boiler	Hydrogen Fluoride	0.0007 LB/MMBTU	BACT-PSD
TX-0597	PSDTX1158	12/11/2009	BORGER REFINERY	11.39	Boiler	Particulate matter, total (TPM)	3.44 LB/H (1-H)	BACT-PSD
				11.39	Boiler	Nitrogen Oxides (NOx)	0.115 LB/MMBTU (1-H)	BACT-PSD
				11.39	Boiler	Carbon Monoxide	56.6 PPMVD (1-H 3% OXYGEN)	BACT-PSD
				11.39	Boiler	Nitrogen Oxides (NOx)	0.01 LB/MMBTU (1-H, FIRING NATURAL GAS); 0.015 LB/MMBTU (1-H, FIRING REFINERY GAS)	BACT-PSD
				11.39	Boiler	Carbon Monoxide	50 PPMVD (1-H 3% OXYGEN)	BACT-PSD
				11.39	Boiler	Particulate matter, total (TPM)	2.72 LB/H (1-H)	BACT-PSD
TX-0598	HAP14	12/11/2009	LIMESTONE ELECTRIC GENERATING STATION UNIT 3	11.11	PC Boiler	Mercury	0.015 LB/GW-H (12-MONTH, FIRING PRB); 0.0075 LB/GW-H (12-MONTH, FIRING BITUMINOUS)	MACT
				11.11	PC Boiler	Heavy Metals	0.012 LB/MMBTU	MACT
				11.11	PC Boiler	Hydrochloric Acid	0.0023 LB/MMBTU	MACT
				11.11	PC Boiler	Hydrogen Fluoride	0.005 LB/MMBTU	MACT
				11.11	PC Boiler	Hazardous Air Pollutants (HAP)	0.15 LB/MMBTU (30-DAY)	MACT
FL-0318	PSD-FL- 406 (0550061-001-AC)	12/10/2009	HIGHLANDS ETHANOL FACILITY	13.39	Backup 198 mmBtu/hr boiler	Nitrogen Oxides (NOx)	0.072 LB/MMBTU (30-DAYS ROLLING AVERAGE); 14.3 LB/H (30-DAYS ROLLING AVERAGE)	RACT
				13.39	Backup 198 mmBtu/hr boiler	Sulfur Dioxide (SO2)	0.0056 LB/MMBTU; 1.1 LB/H	BACT-PSD
				13.39	Backup 198 mmBtu/hr boiler	Carbon Monoxide	0.037 LB/MMBTU; 7.3 LB/H	BACT-PSD
				13.39	Backup 198 mmBtu/hr boiler	Particulate matter, total < 10 µ (TPM10)	0.0071 LB/MMBTU; 1.4 LB/H	BACT-PSD
				13.39	Backup 198 mmBtu/hr boiler	Volatile Organic Compounds (VOC)	0.0015 LB/MMBTU; 0.3 LB/H	BACT-PSD
				13.39	Backup 198 mmBtu/hr boiler	Visible Emissions (VE)	10 PERCENT	BACT-PSD
				12.12	198 mmBtu/hr Biomass Fueled Boiler	Nitrogen Oxides (NOx)	0.075 LB/MMBTU (30-DAY ROLLING AVERAGE); 14.9 LB/H (30-DAY ROLLING AVERAGE)	BACT-PSD
				12.12	198 mmBtu/hr Biomass Fueled Boiler	Sulfur Dioxide (SO2)	0.06 LB/MMBTU (30 DAY ROLLING AVERAGE); 11.9 LB/H (30 DAY ROLLING AVERAGE)	BACT-PSD
				12.12	198 mmBtu/hr Biomass Fueled Boiler	Carbon Monoxide	0.1 LB/MMBTU (30 DAY ROLLING AVERAGE); 19.8 LB/H (30 DAY ROLLING AVERAGE)	BACT-PSD
				12.12	198 mmBtu/hr Biomass Fueled Boiler	Particulate matter, total < 10 µ (TPM10)	0.01 LB/MMBTU; 2 LB/H	BACT-PSD
				12.12	198 mmBtu/hr Biomass Fueled Boiler	Hydrochloric Acid	0.0054 LB/MMBTU (30 DAY ROLLING AVERAGE); 1.05 LB/H (30 DAY ROLLING AVERAGE)	BACT-PSD
				12.12	198 mmBtu/hr Biomass Fueled Boiler	Volatile Organic Compounds (VOC)	0.005 LB/MMBTU; 1 LB/H	BACT-PSD
				12.12	198 mmBtu/hr Biomass Fueled Boiler	Ammonia (NH3)	10 PPMVD; 1.45 LB/H	BACT-PSD
				12.12	198 mmBtu/hr Biomass Fueled Boiler	Visible Emissions (VE)	10 %	BACT-PSD
*VA-0333	60326-36	12/09/2020	NORFOLK NAVAL SHIPYARD	13.31	Three (3) boilers	Particulate matter, total < 10 µ (TPM10)	0.0078 LB (MMBTU)	BACT-PSD
				13.31	Three (3) boilers	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.0078 LB (MMBTU)	BACT-PSD
				13.31	Three (3) boilers	Carbon Dioxide Equivalent (CO2e)	117.1 LB (MMBTU)	BACT-PSD
MI-0408	41-13	12/09/2013	PRESQUE ISLE POWER PLANT	11.11	Boiler 7 (EUBOILER7)	Carbon Monoxide	0.2 LB/MMBTU (30 OPERATING DAY ROLLING AVGERAGE)	BACT-PSD
				11.11	Boilers 5 and 6 (FG5&6)	Carbon Monoxide	0.2 LB/MMBTU (30 OPERATING DAY ROLLING AVERAGE)	BACT-PSD
				11.11	Boilers 8 & 9 (FG8&9)	Carbon Monoxide	0.2 LB/MMBTU (30 OPERATING DAY ROLLING AVERAGE)	BACT-PSD
IN-0234	027-35177-00046	12/08/2015	GRAIN PROCESSING CORPORATION	11.31	BOILER 1	Sulfur Dioxide (SO2)	0.0006 LB/MMBTU (NATURAL GAS ALONE); 0.0008 LB/MMBTU (NATURAL GAS AND ALCOHOL)	BACT-PSD
				11.31	BOILER 1	Particulate matter, filterable (FPM)	0.002 LB/MMBTU (NATURAL GAS ONLY); 0.007 LB/MMBTU (NATURAL GAS AND ALCOHOL)	BACT-PSD
				11.31	BOILER 1	Nitrogen Oxides (NOx)	0.05 LB/MMBTU (NORMAL OPERATION); 0.2 LB/MMBTU (DURING SSM)	BACT-PSD
				11.31	BOILER 1	Carbon Monoxide	0.0365 LB/MMBTU; 9.89 LB/H	BACT-PSD
				11.31	BOILER 1	Volatile Organic Compounds (VOC)	0.0015 LB/MMBTU (NATURAL GAS ALONE); 0.003 LB/MMBTU (NATURAL GAS AND ALCOHOL)	BACT-PSD
				11.31	BOILER 2	Sulfur Dioxide (SO2)	0.0006 LB/MMBTU (NATURAL GAS ALONE); 0.0008 LB/MMBTU (NATURAL GAS WITH ALCOHOL)	BACT-PSD
				11.31	BOILER 2	Particulate matter, filterable (FPM)	0.002 LB/MMBTU (NATURAL GAS ALONE); 0.007 LB/MMBTU (NATURAL GAS WITH ALCOHOL)	BACT-PSD
				11.31	BOILER 2	Particulate matter, total < 10 µ (TPM10)	0.005 LB/MMBTU (NATURAL GAS ALONE); 0.007 LB/MMBTU (NATURAL GAS WITH ALCOHOL)	BACT-PSD
				11.31	BOILER 2	Nitrogen Oxides (NOx)	0.05 LB/MMBTU (NORMAL OPERATION); 0.2 LB/MMBTU (DURING SSM)	BACT-PSD
				11.31	BOILER 2	Carbon Monoxide	0.0365 LB/MMBTU; 9.89 LB/H	BACT-PSD

RBLC Search Results: Boilers

RBLC ID	PERMIT	DATE	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				11.31	BOILER 2	Volatile Organic Compounds (VOC)	0.0015 LB/MMBTU (NATURAL GAS ALONE); 0.003 LB/MMBTU (NATURAL GAS WITH ALCOHOL)	BACT-PSD
VA-0320	20304-025	12/06/2012	CELANESE ACETATE LLC	11.31	NATURAL GAS FIRED BOILERS, (6)	Carbon Monoxide	50 PPMVD @3% O2 (ROLLING 24-H AVG INCLUDING SSM)	BACT-PSD
				11.31	NATURAL GAS FIRED BOILERS, (6)	Volatile Organic Compounds (VOC)	2.2 LB/H (ROLLING 24-H AVG INCLUDING SSM)	BACT-PSD
MI-0424	107-13C	12/05/2016	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET	13.31	EUAUXBOILER (Auxiliary boiler)	Carbon Monoxide	0.077 LB/MMBTU (TEST PROTOCOL WILL SPECIFY AVG TIME)	BACT-PSD
				13.31	EUAUXBOILER (Auxiliary boiler)	Nitrogen Oxides (NOx)	0.05 LB/MMBTU (TEST PROTOCOL WILL SPECIFY AVG TIME)	BACT-PSD
				13.31	EUAUXBOILER (Auxiliary boiler)	Particulate matter, filterable (FPM)	0.0018 LB/MMBTU (TEST PROTOCOL WILL SPECIFY AVG TIME)	BACT-PSD
				13.31	EUAUXBOILER (Auxiliary boiler)	Particulate matter, total < 10 µ (TPM10)	0.007 LB/MMBTU (TEST PROTOCOL WIL SPECIFY AVG TIME)	BACT-PSD
				13.31	EUAUXBOILER (Auxiliary boiler)	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.007 LB/MMBTU (TEST PROTOCOL WILL SPECIFY AVG TIME.)	BACT-PSD
				13.31	EUAUXBOILER (Auxiliary boiler)	Volatile Organic Compounds (VOC)	0.008 LB/MMBTU (TEST PROTOCOL WILL SPECIFY AVG TIME)	BACT-PSD
				13.31	EUAUXBOILER (Auxiliary boiler)	Carbon Dioxide Equivalent (CO2e)	43283 T/YR (12-MO ROLLING TIME PERIOD)	BACT-PSD
*FL-0363	0110037-017-AC	12/04/2017	DANIA BEACH ENERGY CENTER	13.31	99.8 MMBtu/hr auxiliary boiler	Carbon Monoxide	0.08 LB/MMBTU	BACT-PSD
				13.31	99.8 MMBtu/hr auxiliary boiler	Sulfur Dioxide (SO2)	0	BACT-PSD
				13.31	99.8 MMBtu/hr auxiliary boiler	Sulfuric Acid (mist, vapors, etc)	0	BACT-PSD
				13.31	99.8 MMBtu/hr auxiliary boiler	Particulate matter, filterable (FPM)	0	BACT-PSD
				13.31	99.8 MMBtu/hr auxiliary boiler	Particulate matter, total < 10 µ (TPM10)	0	BACT-PSD
				13.31	99.8 MMBtu/hr auxiliary boiler	Particulate matter, total < 2.5 Âµ (TPM2.5)	0	BACT-PSD
MI-0412	107-13	12/04/2013	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET	13.31	Auxiliary Boiler B (EUAUXBOILERB)	Carbon Monoxide	0.077 LB/MMBTU (TEST PROTOCOL)	BACT-PSD
				13.31	Auxiliary Boiler B (EUAUXBOILERB)	Nitrogen Oxides (NOx)	0.05 LB/MMBTU (TEST PROTOCOL)	BACT-PSD
				13.31	Auxiliary Boiler B (EUAUXBOILERB)	Particulate matter, filterable (FPM)	0.0018 LB/MMBTU (TEST PROTOCOL)	BACT-PSD
				13.31	Auxiliary Boiler B (EUAUXBOILERB)	Particulate matter, total < 10 µ (TPM10)	0.007 LB/MMBTU (TEST PROTOCOL)	BACT-PSD
				13.31	Auxiliary Boiler B (EUAUXBOILERB)	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.007 LB/MMBTU (TEST PROTOCOL)	BACT-PSD
				13.31	Auxiliary Boiler B (EUAUXBOILERB)	Volatile Organic Compounds (VOC)	0.008 LB/MMBTU (TEST PROTOCOL)	BACT-PSD
				13.31	Auxiliary Boiler B (EUAUXBOILERB)	Carbon Dioxide Equivalent (CO2e)	49251 T/YR (12-MO ROLLING TIME PERIOD)	BACT-PSD
				13.31	Auxiliary Boiler A (EUAUXBOILERA)	Carbon Dioxide Equivalent (CO2e)	28514 T/YR (12-MO ROLLING TIME PERIOD)	BACT-PSD
				13.31	Auxiliary Boiler A (EUAUXBOILERA)	Volatile Organic Compounds (VOC)	0.008 LB/MMBTU (TEST PROTOCOL)	BACT-PSD
				13.31	Auxiliary Boiler A (EUAUXBOILERA)	Carbon Monoxide	0.077 LB/MMBTU (TEST PROTOCOL)	BACT-PSD
				13.31	Auxiliary Boiler A (EUAUXBOILERA)	Nitrogen Oxides (NOx)	0.05 LB/MMBTU (TEST PROTOCOL)	BACT-PSD
				13.31	Auxiliary Boiler A (EUAUXBOILERA)	Particulate matter, filterable (FPM)	0.0018 LB/MMBTU (TEST PROTOCOL)	BACT-PSD
				13.31	Auxiliary Boiler A (EUAUXBOILERA)	Particulate matter, total < 10 µ (TPM10)	0.007 LB/MMBTU (TEST PROTOCOL)	BACT-PSD
				13.31	Auxiliary Boiler A (EUAUXBOILERA)	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.007 LB/MMBTU (TEST PROTOCOL)	BACT-PSD
IN-0158	141-31003-00579	12/03/2012	ST. JOSEPH ENEGRY CENTER, LLC	13.31	TWO (2) NATURAL GAS AUXILIARY BOILERS	Carbon Dioxide Equivalent (CO2e)	81996 TONS (12 CONSECUTIVE MONTH PERIOD); 80 % HHV	BACT-PSD
				13.31	TWO (2) NATURAL GAS AUXILIARY BOILERS	Particulate matter, filterable (FPM)	0.0075 LB/MMBTU (3 HOURS); 0.6 LB/H (3 HOURS)	BACT-PSD
				13.31	TWO (2) NATURAL GAS AUXILIARY BOILERS	Particulate matter, total < 10 µ (TPM10)	0.0075 LB/MMBTU (3 HOURS); 0.6 LB/H (3 HOURS)	BACT-PSD
				13.31	TWO (2) NATURAL GAS AUXILIARY BOILERS	Particulate matter, total < 2.5 µ (TPM2.5)	0.0075 LB/MMBTU (3 HOURS); 0.6 LB/H (3 HOURS)	BACT-PSD
				13.31	TWO (2) NATURAL GAS AUXILIARY BOILERS	Carbon Monoxide	0.083 LB/MMBTU (3 HOURS); 6.64 LB/H (3 HOURS)	BACT-PSD
				13.31	TWO (2) NATURAL GAS AUXILIARY BOILERS	Sulfur Dioxide (SO2)	0.0022 LB/MMBTU (3 HOURS); 0.176 LB/H (3 HOURS)	BACT-PSD
				13.31	TWO (2) NATURAL GAS AUXILIARY BOILERS	Volatile Organic Compounds (VOC)	0.005 LB/MMBTU (3 HOURS); 0.4 LB/H (3 HOURS)	BACT-PSD
				13.31	TWO (2) NATURAL GAS AUXILIARY BOILERS	Nitrogen Oxides (NOx)	0.032 LB/MMBTU (3 HOURS); 2.56 LB/H (3 HOURS)	BACT-PSD
GA-0140	4911-095-0002-V-02-3	12/03/2010	MITCHELL STEAM-GENERATING PLANT (PLANT MITCHEL	11.12	Boiler, Wood-Fired	Volatile Organic Compounds (VOC)	0.05 LB/MMBTU (3H AV/INITIAL & ANNUAL TESTING)	BACT-PSD
				11.12	Boiler, Wood-Fired	Particulate matter, total < 10 µ (TPM10)	0.04 LB/MMBTU (3H, INITIAL & ANNUAL TESTING)	BACT-PSD
				11.12	Boiler, Wood-Fired	Carbon Monoxide	0.45 LB/MMBTU (30 D ROLLING AVG)	BACT-PSD
TX-0704	108819 PSDTX1354	12/02/2014	UTILITY PLANT	11.31	(2) boilers	Nitrogen Oxides (NOx)	0.01 LB/MMBTU (3-HR ROLLING AVERAGE)	BACT-PSD
				11.31	(2) boilers	Carbon Monoxide	50 PPMVD (@3% O2, 3-HR ROLLING AVERAGE)	BACT-PSD
				11.31	(2) boilers	Volatile Organic Compounds (VOC)	0.004 LB/MMBTU	BACT-PSD
				11.31	(2) boilers	Particulate matter, total < 2.5 Âµ (TPM2.5)	0	BACT-PSD
				11.31	boiler	Nitrogen Oxides (NOx)	0.01 LB/MMBTU (3-HR ROLLING AVERAGE)	BACT-PSD
				11.31	boiler	Carbon Monoxide	50 PPMVD (@3% O2, 3-HR ROLLING AVERAGE)	BACT-PSD
				11.31	boiler	Volatile Organic Compounds (VOC)	0.004 LB/MMBTU	BACT-PSD
				11.31	boiler	Particulate matter, total < 2.5 Âµ (TPM2.5)	0	BACT-PSD
AR-0167	0868-AOP-R18	12/01/2020	LION OIL COMPANY	13.31	SN-803 - #4 Pre-Flash Column Reboiler	Nitrogen Oxides (NOx)	1.9 LB/HR (3-HOUR AVERAGE)	BACT-PSD
				13.31	SN-805 - #4 Pre-Flash Reboiler	Nitrogen Oxides (NOx)	3.5 LB/HR (3-HOUR AVERAGE)	BACT-PSD
				13.31	SN-810 - #9 Hydrotreater Furnace/Reboiler	Nitrogen Oxides (NOx)	12.7 LB/HR (3-HOUR AVERAGE)	BACT-PSD
*FL-0330	DPA-EPA-R4001	12/01/2011	PORT DOLPHIN ENERGY LLC	11.31	Boilers (4 - 278 mmbtu/hr each)	Carbon Dioxide	117 LB/MMBTU (8-HOUR ROLLING AVERAGE)	BACT-PSD
				11.31	Boilers (4 - 278 mmbtu/hr each)	Nitrogen Oxides (NOx)	0.012 LB/MMBTU (3-HOUR ROLLING AVERAGE)	BACT-PSD

RBLC Search Results: Boilers

RBLC ID	PERMIT	DATE	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				11.31	Boilers (4 - 278 mmbtu/hr each)	Carbon Monoxide	0.015 LB/MMBTU (3-HOUR ROLLING AVERAGE)	BACT-PSD
				11.31	Boilers (4 - 278 mmbtu/hr each)	Sulfur Dioxide (SO2)	0.0006 LB/MMBTU (3-HOUR ROLLING AVERAGE)	BACT-PSD
				11.31	Boilers (4 - 278 mmbtu/hr each)	Sulfuric Acid (mist, vapors, etc)	0.34 LB/H (3-HOUR ROLLING AVERAGE)	BACT-PSD
				11.31	Boilers (4 - 278 mmbtu/hr each)	Volatile Organic Compounds (VOC)	0.0054 LB/MMBTU (3-HOUR ROLLING AVERAGE)	BACT-PSD
				11.31	Boilers (4 - 278 mmbtu/hr each)	Particulate matter, filterable (FPM)	0.01 LB/MMBTU (3-HOUR ROLLING AVERAGE)	BACT-PSD
				11.31	Boilers (4 - 278 mmbtu/hr each)	Particulate matter, total < 10 µ (TPM10)	0.0075 LB/MMBTU (3-HOUR ROLLING AVERAGE)	BACT-PSD
CT-0159	144-0025	11/30/2015	CPV TOWANTIC, LLC	13.31	Aux Boiler	Nitrogen Oxides (NOx)	7 PPMVD @3% O2	LAER
WI-0260	12-DMM-186	11/30/2012	EXPERA SPECIALTY SOLUTIONS	12.31	B25 - B&W Natural Gas-Fired Boiler	Carbon Dioxide Equivalent (CO2e)	0	BACT-PSD
NV-0050	825	11/30/2009	MGM MIRAGE	11.31	BOILERS - UNITS CC001, CC002, AND CC003 AT CITY CENTER	Carbon Monoxide	0.0184 LB/MMBTU; 25 PPMVD (CORRECTED TO 3.0% OXYGEN)	LAER
				11.31	BOILERS - UNITS CC001, CC002, AND CC003 AT CITY CENTER	Nitrogen Oxides (NOx)	0.011 LB/MMBTU; 9 PPM (CORRECTED TO 3.0% OXYGEN)	Other Case-by-Case
				11.31	BOILERS - UNITS CC001, CC002, AND CC003 AT CITY CENTER	Particulate matter, total < 10 µ (TPM10)	0.0077 LB/MMBTU; 7.64 LB/D	Other Case-by-Case
				11.31	BOILERS - UNITS CC001, CC002, AND CC003 AT CITY CENTER	Sulfur Dioxide (SO2)	0.0007 LB/MMBTU; 0.72 LB/D	BACT-PSD
				11.31	BOILERS - UNITS CC001, CC002, AND CC003 AT CITY CENTER	Volatile Organic Compounds (VOC)	0.0024 LB/MMBTU; 2.63 LB/D	Other Case-by-Case
				11.31	BOILERS - UNITS CC001, CC002, AND CC003 AT CITY CENTER	Hazardous Air Pollutants (HAP)	0.0019 LB/MMBTU; 1.9 LB/D	Other Case-by-Case
				11.31	BOILERS - UNITS CC004, CC005, AND CC006 AT CITY CENTER	Carbon Monoxide	0.0214 LB/MMBTU; 30 PPM (CORRECTED TO 3.0% OXYGEN)	LAER
				11.31	BOILERS - UNITS CC004, CC005, AND CC006 AT CITY CENTER	Nitrogen Oxides (NOx)	0.0143 LB/MMBTU; 12 PPM (CORRECTED TO 3.0% OXYGEN)	Other Case-by-Case
				11.31	BOILERS - UNITS CC004, CC005, AND CC006 AT CITY CENTER	Particulate matter, total < 10 µ (TPM10)	0.0071 LB/MMBTU; 0.76 LB/D	Other Case-by-Case
				11.31	BOILERS - UNITS CC004, CC005, AND CC006 AT CITY CENTER	Sulfur Oxides (SOx)	0.0024 LB/MMBTU; 0.07 LB/D	BACT-PSD
				11.31	BOILERS - UNITS CC004, CC005, AND CC006 AT CITY CENTER	Volatile Organic Compounds (VOC)	0.0048 LB/MMBTU; 0.42 LB/D	Other Case-by-Case
				11.31	BOILERS - UNITS CC004, CC005, AND CC006 AT CITY CENTER	Hazardous Air Pollutants (HAP)	0.0019 LB/MMBTU; 0.19 LB/D	Other Case-by-Case
				11.31	BOILER - UNIT MB090 AT MANDALAY BAY	Carbon Monoxide	0.0362 LB/MMBTU; 50 PPMVD (CORRECTED TO 3% OXYGEN)	LAER
				11.31	BOILER - UNIT MB090 AT MANDALAY BAY	Nitrogen Oxides (NOx)	0.014 LB/MMBTU; 12 PPMVD (CORRECTED TO 3% OXYGEN)	Other Case-by-Case
				11.31	BOILER - UNIT MB090 AT MANDALAY BAY	Particulate matter, total < 10 µ (TPM10)	0.007 LB/MMBTU; 0.03 LB/H	Other Case-by-Case
				11.31	BOILER - UNIT MB090 AT MANDALAY BAY	Sulfur Oxides (SOx)	0.0006 LB/MMBTU; 0.0025 LB/H	BACT-PSD
				11.31	BOILER - UNIT MB090 AT MANDALAY BAY	Volatile Organic Compounds (VOC)	0.0054 LB/MMBTU; 0.023 LB/H	Other Case-by-Case
				11.31	BOILER - UNIT MB090 AT MANDALAY BAY	Hazardous Air Pollutants (HAP)	0.0018 LB/MMBTU; 0.0079 LB/H	Other Case-by-Case
				11.31	BOILERS - UNITS BE102 THRU BE105 AT BELLAGIO	Carbon Monoxide	0.037 LB/MMBTU; 50 PPMVD (CORRECTED TO 3.0% OXYGEN)	LAER
				11.31	BOILERS - UNITS BE102 THRU BE105 AT BELLAGIO	Nitrogen Oxides (NOx)	0.0123 LB/MMBTU; 10 PPMVD (CORRECTED TO 3.0% OXYGEN)	Other Case-by-Case
				11.31	BOILERS - UNITS BE102 THRU BE105 AT BELLAGIO	Particulate matter, total < 10 µ (TPM10)	0.0075 LB/MMBTU; 0.015 LB/H	Other Case-by-Case
				11.31	BOILERS - UNITS BE102 THRU BE105 AT BELLAGIO	Volatile Organic Compounds (VOC)	0.0054 LB/MMBTU; 0.011 LB/H	Other Case-by-Case
				11.31	BOILERS - UNITS BE102 THRU BE105 AT BELLAGIO	Sulfur Oxides (SOx)	0.0006 LB/MMBTU; 0.0012 LB/H	BACT-PSD
				11.31	BOILERS - UNITS BE102 THRU BE105 AT BELLAGIO	Hazardous Air Pollutants (HAP)	0.0018 LB/MMBTU; 0.0037 LB/H	Other Case-by-Case
				11.31	BOILER - UNIT BE111 AT BELLAGIO	Carbon Monoxide	0.038 LB/MMBTU; 0.08 LB/H	LAER
				11.31	BOILER - UNIT BE111 AT BELLAGIO	Nitrogen Oxides (NOx)	0.024 MMBTU; 20 PPMVD (CORRECTED TO 3% OXYGEN)	Other Case-by-Case
				11.31	BOILER - UNIT BE111 AT BELLAGIO	Particulate matter, total < 10 µ (TPM10)	0.0095 LB/MMBTU; 0.02 LB/H	LAER
				11.31	BOILER - UNIT BE111 AT BELLAGIO	Volatile Organic Compounds (VOC)	0.0048 LB/MMBTU; 0.01 LB/H	Other Case-by-Case
				11.31	BOILER - UNIT BE111 AT BELLAGIO	Sulfur Oxides (SOx)	0.0048 LB/MMBTU; 0.01 LB/H	BACT-PSD
				12.31	BOILERS - UNITS CC026, CC027 AND CC028 AT CITY CENTER	Sulfur Oxides (SOx)	0.0007 LB/MMBTU; 0.03 LB/H	BACT-PSD
				12.31	BOILERS - UNITS CC026, CC027 AND CC028 AT CITY CENTER	Volatile Organic Compounds (VOC)	0.0055 LB/MMBTU; 0.24 LB/H	Other Case-by-Case
				12.31	BOILERS - UNITS CC026, CC027 AND CC028 AT CITY CENTER	Hazardous Air Pollutants (HAP)	0.0018 LB/MMBTU; 0.08 LB/H	Other Case-by-Case
				12.31	BOILERS - UNITS CC026, CC027 AND CC028 AT CITY CENTER	Carbon Monoxide	0.0148 LB/MMBTU; 20 PPMVD (CORRECTED TO 3% OXYGEN)	LAER
				12.31	BOILERS - UNITS CC026, CC027 AND CC028 AT CITY CENTER	Nitrogen Oxides (NOx)	0.0109 LB/MMBTU; 9 PPMVD (CORRECTED TO 3% OXYGEN)	Other Case-by-Case
				12.31	BOILERS - UNITS CC026, CC027 AND CC028 AT CITY CENTER	Particulate matter, total < 10 µ (TPM10)	0.0075 LB/MMBTU; 0.33 LB/H	LAER
				11.31	BOILERS - UNITS NY42, NY43, AND NY44 AT NEW YORK - NEW YORK	Particulate matter, total < 10 µ (TPM10)	0.005 LB/MMBTU; 0.01 LB/H	LAER

RBLC Search Results: Boilers

RBLC ID	PERMIT	DATE	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				11.31	BOILERS - UNITS NY42, NY43, AND NY44 AT NEW YORK - NEW YORK	Sulfur Oxides (SOx)	0.005 LB/MMBTU; 0.01 LB/H	BACT-PSD
				11.31	BOILERS - UNITS NY42, NY43, AND NY44 AT NEW YORK - NEW YORK	Volatile Organic Compounds (VOC)	0.005 LB/MMBTU; 0.01 LB/H	Other Case-by-Case
				11.31	BOILERS - UNITS NY42, NY43, AND NY44 AT NEW YORK - NEW YORK	Carbon Monoxide	0.035 LB/MMBTU; 50 PPMVD (CORRECTED TO 3% OXYGEN)	LAER
				11.31	BOILERS - UNITS NY42, NY43, AND NY44 AT NEW YORK - NEW YORK	Nitrogen Oxides (NOx)	0.025 LB/MMBTU; 20 PPMVD (CORRECTED TO 3% OXYGEN)	Other Case-by-Case
FL-0359	0510003-061-AC	11/29/2016	CLEWISTON MILL	11.12	Boiler No. 9	Nitrogen Oxides (NOx)	0.1 LB/MMBTU (30-DAY ROLLING); 130 LB/HR (DAILY BLOCK)	BACT-PSD
				11.12	Boiler No. 9	Sulfur Dioxide (SO2)	0.064 LB/MMBTU	BACT-PSD
				11.12	Boiler No. 9	Carbon Dioxide	0.49 LB CO2/LB STEAM (12-MONTH ROLLING)	BACT-PSD
				11.12	Boiler No. 9	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.0268 LB/MMBTU	BACT-PSD
				11.12	Boiler No. 9	Ammonia (NH3)	25 PPMVD @ 7% O2	BACT-PSD
ME-0037	A-22-77-4-A	11/29/2010	VERSO BUCKSPORT LLC	11.12	Biomass Boiler 8	Particulate matter, total (TPM)	0.03 LB/MMBTU; 24.4 LB/H	BACT-PSD
				11.12	Biomass Boiler 8	Sulfur Dioxide (SO2)	0.8 LB/MMBTU (3-HR AVERAGE); 651.2 LB/H	BACT-PSD
				11.12	Biomass Boiler 8	Nitrogen Oxides (NOx)	0.15 LB/MMBTU (30 DAY ROLLING); 244.2 LB/H	BACT-PSD
				11.12	Biomass Boiler 8	Carbon Monoxide	0.3 LB/MMBTU (30 DAY ROLLING); 435 LB/H (24-HR BLOCK)	BACT-PSD
				11.12	Biomass Boiler 8	Volatile Organic Compounds (VOC)	0.05 LB/MMBTU; 40.7 LB/H	LAER
*MI-0445	75-16B	11/26/2019	INDECK NILES, LLC	12.31	EUAUXBOILER	Carbon Monoxide	0.04 LB/MMBTU (HOURLY)	BACT-PSD
				12.31	EUAUXBOILER	Nitrogen Oxides (NOx)	0.04 LB/MMBTU (30-DAY ROLLING AVERAGE TIME PERIOD)	BACT-PSD
				12.31	EUAUXBOILER	Particulate matter, filterable (FPM)	0.005 LB/MMBTU (HOURLY)	BACT-PSD
				12.31	EUAUXBOILER	Particulate matter, total < 10 µ (TPM10)	1.36 LB/H (HOURLY)	BACT-PSD
				12.31	EUAUXBOILER	Particulate matter, total < 2.5 Âµ (TPM2.5)	1.36 LB/H (HOURLY)	BACT-PSD
				12.31	EUAUXBOILER	Volatile Organic Compounds (VOC)	0.004 LB/MMBTU (HOURLY)	BACT-PSD
				12.31	EUAUXBOILER	Sulfur Dioxide (SO2)	0.6 LB/MMSCF (BASED UPON FUEL RECEIPT RECORDS)	BACT-PSD
				12.31	EUAUXBOILER	Carbon Dioxide Equivalent (CO2e)	93346 T/YR (12-MO ROLLING TIME PERIOD)	BACT-PSD
AR-0164	0463-AOP-R17	11/22/2019	GP WOOD PRODUCTS SOUTH LLC GURDON PLYWOOD &	12.12	#1 Wood Fuel Fired Boiler	Volatile Organic Compounds (VOC)	10 LB/HR; 43.8 TPY	OTHER CASE-BY-CASE
				12.12	#2 Wood Fuel Fired Boiler	Volatile Organic Compounds (VOC)	10 LB/HR; 43.8 TPY	OTHER CASE-BY-CASE
TX-0813	16963, PSDTX1478, GHGPSDTX148	11/22/2016	ODESSA PETROCHEMICAL PLANT	12.31	Boilers	Volatile Organic Compounds (VOC)	0.0005 LB/MMBTU	BACT-PSD
				12.31	Boilers	Carbon Dioxide Equivalent (CO2e)	63796 T/YR	BACT-PSD
				13.31	small Boiler	Volatile Organic Compounds (VOC)	0.0005 MMBTU/HR	BACT-PSD
WV-0025	R14-0030	11/21/2014	MOUNDSVILLE COMBINED CYCLE POWER PLANT	12.31	Auxiliary Boiler	Carbon Monoxide	4 LB/H	BACT-PSD
				12.31	Auxiliary Boiler	Nitrogen Oxides (NOx)	2 LB/H	BACT-PSD
				12.31	Auxiliary Boiler	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.5 LB/H	BACT-PSD
				12.31	Auxiliary Boiler	Volatile Organic Compounds (VOC)	0.6 LB/H; 0.006 LB/MMBTU	BACT-PSD
				12.31	Auxiliary Boiler	Carbon Dioxide Equivalent (CO2e)	12081 LB/H; 120.81 LB/MMBTU	BACT-PSD
TX-0739	PSD-TX-612-GHG	11/21/2013	AIR LIQUIDE, BAYOU COGENERATION PLANT	11.31	Boiler equipped with SCR	Carbon Dioxide Equivalent (CO2e)	117 LB CO2/MMBTU (12-MONTH ROLLING AVERAGE INCLUDES MSS); 485588 TPY CO2E (12-MONTH TOTAL, ROLLING MONTHLY)	BACT-PSD
TX-0712	111393 PSDTX1368	11/20/2014	TRINIDAD GENERATING FACILITY	12.31	boiler	Nitrogen Oxides (NOx)	9 PPMVD (@15% O2)	BACT-PSD
AR-0121	0573-AOP-R16	11/18/2013	EL DORADO CHEMICAL COMPANY	12.31	START-UP BOILER	Visible Emissions (VE)	0 %	BACT-PSD
				12.31	START-UP BOILER	Sulfur Dioxide (SO2)	0.18 LB/H (ROLLING 3 HOUR AVERAGE); 0.0007 LB/MMBTU (ROLLING 3 HOUR AVERAGE)	BACT-PSD
				12.31	START-UP BOILER	Volatile Organic Compounds (VOC)	0.96 LB/H (ROLLING 3 HOUR AVERAGE); 0.004 LB/MMBTU (ROLLING 3 HOUR AVERAGE)	BACT-PSD
				12.31	START-UP BOILER	Carbon Monoxide	8.88 LB/H (ROLLING 3 HOUR AVERAGE); 0.037 LB/MMBTU (ROLLING 3 HOUR AVERAGE)	BACT-PSD
				12.31	START-UP BOILER	Nitrogen Oxides (NOx)	4.32 LB/H (ROLLING 3 HOUR AVERAGE); 0.018 LB/MMBTU (ROLLING 3 HOUR AVERAGE)	BACT-PSD
				12.31	START-UP BOILER	Carbon Dioxide	117 LB/MMBTU (ROLLING 3 HOUR AVERAGE)	BACT-PSD
				12.31	START-UP BOILER	Methane	0.0022 LB/MMBTU (ROLLING 3 HOUR AVERAGE)	BACT-PSD
				12.31	START-UP BOILER	Nitrous Oxide (N2O)	0.0002 LB/MMBTU (ROLLING 3 HOUR AVERAGE)	BACT-PSD
				12.31	START-UP BOILER	Carbon Dioxide Equivalent (CO2e)	123411 T/YR (ROLLING 12 MONTH AVERAGE)	BACT-PSD
WY-0074	MD-13083	11/18/2013	GREEN RIVER SODA ASH PLANT	11.31	Natural Gas Package Boiler	Nitrogen Oxides (NOx)	0.011 LB/MMBTU (30-DAY ROLLING); 2.8 LB/H (30-DAY ROLLING)	BACT-PSD
				11.31	Natural Gas Package Boiler	Carbon Monoxide	0.037 LB/MMBTU (30-DAY ROLLING); 9.4 LB/H (30-DAY ROLLING)	BACT-PSD
				11.31	Natural Gas Package Boiler	Volatile Organic Compounds (VOC)	0.0054 LB/MMBTU (3-HR AVERAGE); 1.4 LB/H (3-HR AVERAGE)	N/A
				11.31	Natural Gas Package Boiler	Particulate matter, total (TPM)	0.007 LB/MMBTU (3-HR AVERAGE); 1.8 LB/H (3-HR AVERAGE)	BACT-PSD
MI-0427	66-17	11/17/2017	FILER CITY STATION	12.31	EUAUXBOILER (Auxiliary boiler)	Carbon Monoxide	0.04 LB/MMBTU	BACT-PSD
				12.31	EUAUXBOILER (Auxiliary boiler)	Nitrogen Oxides (NOx)	0.04 LB/MMBTU (30 DAY ROLLING AVERAGE)	BACT-PSD
				12.31	EUAUXBOILER (Auxiliary boiler)	Particulate matter, filterable (FPM)	0.005 LB/MMBTU	BACT-PSD
				12.31	EUAUXBOILER (Auxiliary boiler)	Particulate matter, total < 10 µ (TPM10)	0.0075 LB/MMBTU	BACT-PSD
				12.31	EUAUXBOILER (Auxiliary boiler)	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.0075 LB/MMBTU	BACT-PSD
				12.31	EUAUXBOILER (Auxiliary boiler)	Carbon Dioxide Equivalent (CO2e)	93346 T/YR (12-MO.ROLL. TIME PERIOD)	BACT-PSD
LA-0213	PSD-LA-619(M5)	11/17/2009	ST. CHARLES REFINERY	11.39	BOILERS (94-43 & 94-45)	Particulate matter, total < 10 µ (TPM10)	2.64 LB/H (HOURLY MAXIMUM)	BACT-PSD
				11.39	BOILERS (94-43 & 94-45)	Sulfur Dioxide (SO2)	9.43 LB/H (HOURLY MAXIMUM)	BACT-PSD

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RBLC ID	PERMIT	DATE	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				11.39	BOILERS (94-43 & 94-45)	Nitrogen Oxides (NOx)	46.37 LB/H (HOURLY MAXIMUM FOR BOILER 94-43); 36.82 LB/H (HOURLY MAXIMUM FOR BOILER 94-45)	BACT-PSD
				11.39	BOILERS (94-43 & 94-45)	Carbon Monoxide	29.15 LB/H (HOURLY MAXIMUM)	BACT-PSD
				11.39	BOILERS (94-43 & 94-45)	Volatile Organic Compounds (VOC)	1.91 LB/H (HOURLY MAXIMUM)	BACT-PSD
				11.39	BOILER 401-E (2004-10)	Carbon Monoxide	34.59 LB/H (HOURLY MAXIMUM)	BACT-PSD
				13.39	HEATERS/REBOILERS	Particulate matter, total < 10 µ (TPM10)	0 (SEE NOTE)	BACT-PSD
				13.39	HEATERS/REBOILERS	Sulfur Dioxide (SO2)	0 (SEE NOTE)	BACT-PSD
				13.39	HEATERS/REBOILERS	Nitrogen Oxides (NOx)	0.04 LB/MMBTU (THREE 1-HOUR TEST AVERAGE)	BACT-PSD
				13.39	HEATERS/REBOILERS	Carbon Monoxide	0.08 LB/MMBTU (THREE 1-HOUR TEST AVERAGE)	BACT-PSD
				13.39	HEATERS/REBOILERS	Volatile Organic Compounds (VOC)	0 (SEE NOTE)	BACT-PSD
				11.39	BOILERS (2008-10, 2008-11, 2008-40)	Sulfur Dioxide (SO2)	0 (SEE NOTE)	BACT-PSD
				11.39	BOILERS (2008-10, 2008-11, 2008-40)	Nitrogen Oxides (NOx)	0.04 LB/MMBTU (WITH COMBUSTION AIR PREHEAT); 0.03 LB/MMBTU (WITHOUT COMBUSTION AIR PREHEAT)	BACT-PSD
				11.39	BOILERS (2008-10, 2008-11, 2008-40)	Carbon Monoxide	0.08 LB/MMBTU (THREE ONE HOUR TEST AVE)	BACT-PSD
				11.39	BOILERS (2008-10, 2008-11, 2008-40)	Volatile Organic Compounds (VOC)	0 (SEE NOTE)	BACT-PSD
				11.39	BOILERS (2008-10, 2008-11, 2008-40)	Particulate matter, total < 10 µ (TPM10)	0 (SEE NOTE)	BACT-PSD
KY-0114	V-19-016	11/13/2020	WESTLAKE VINYLS, INC.- VINYLS PLANT	12.39	Boiler #6 013B (EPN 013)	Carbon Dioxide Equivalent (CO2e)	98255 TONS/YEAR (12-MONTH ROLLING BASIS)	BACT-PSD
				12.39	Boiler #6 013B (EPN 013)	Carbon Monoxide	0.037 LB/MMBTU (12-MONTH ROLLING BASIS); 32.67 TONS/YEAR (12-MONTH ROLLING BASIS)	BACT-PSD
				12.39	Boiler #6 013B (EPN 013)	Particulate matter, filterable (FPM)	1.56 LBS/HOUR (12-MONTH ROLLING BASIS); 6.23 TONS/YEAR (12-MONTH ROLLING BASIS)	BACT-PSD
				12.39	Boiler #6 013B (EPN 013)	Particulate matter, total < 10 µ (TPM10)	1.56 LBS/HOUR (12-MONTH ROLLING BASIS); 6.23 TONS/YEAR (12-MONTH ROLLING BASIS)	BACT-PSD
				12.39	Boiler #6 013B (EPN 013)	Volatile Organic Compounds (VOC)	1.13 LBS/HOUR (12-MONTH ROLLING BASIS); 4.51 TONS/YEAR (12-MONTH ROLLING BASIS)	BACT-PSD
				12.39	Boiler #6 013B (EPN 013)	Particulate matter, total < 2.5 Âµ (TPM2.5)	1.56 LBS/HOUR (12-MONTH ROLLING BASIS); 6.23 TONS/YEAR (12-MONTH ROLLING BASIS)	BACT-PSD
MD-0045	PSC CASE. NO. 9330	11/13/2015	MATTAWOMAN ENERGY CENTER	13.31	AUXILIARY BOILER	Particulate matter, filterable (FPM)	0.0019 LB/MMBTU (3-HOUR BLOCK AVERAGE)	BACT-PSD
				13.31	AUXILIARY BOILER	Particulate matter, total < 10 µ (TPM10)	0.0075 LB/MMBTU (3-HOUR BLOCK AVERAGE)	BACT-PSD
				13.31	AUXILIARY BOILER	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.0075 LB/MMBTU (3-HOUR BLOCK AVERAGE)	BACT-PSD
				13.31	AUXILIARY BOILER	Nitrogen Oxides (NOx)	0.01 LB/MMBTU (3-HOUR BLOCK AVERAGE)	BACT-PSD
				13.31	AUXILIARY BOILER	Carbon Monoxide	0.037 LB/MMBTU (3-HOUR BLOCK AVERAGE)	BACT-PSD
				13.31	AUXILIARY BOILER	Volatile Organic Compounds (VOC)	0.003 LB/MMBTU (3-HOUR BLOCK AVERAGE)	LAER
				13.31	AUXILIARY BOILER	Sulfuric Acid (mist, vapors, etc)	0.004 LB/MMBTU (3-HOUR BLOCK AVERAGE)	BACT-PSD
TX-0776	123077, PSDTX1436, AND GHGPSD	11/12/2015	BISHOP FACILITY	11.39	Boiler	Nitrogen Oxides (NOx)	0.02 PPM (1-HR AVG); 0.01 PPM (ROLLING MONTHLY AVERAGE)	BACT-PSD
				11.39	Boiler	Volatile Organic Compounds (VOC)	0	BACT-PSD
				11.39	Boiler	Carbon Monoxide	100 PPM (1-HR AVG); 50 PPM (ROLLING MONTHLY AVERAGE)	BACT-PSD
				11.39	Boiler	Particulate matter, total < 10 µ (TPM10)	3.37 LB/HR; 14.75 TPY	BACT-PSD
				11.39	Boiler	Particulate matter, total < 2.5 Âµ (TPM2.5)	3.37 LB/HR; 14.75 TPY	BACT-PSD
				11.39	Boiler	Carbon Dioxide Equivalent (CO2e)	235156 TPY	BACT-PSD
TX-0641	PSDTX1298	11/12/2013	PINECREST ENERGY CENTER	12.31	Auxiliary boiler	Carbon Monoxide	75 PPMVD (INITIAL STACK TEST, 3% OXYGEN)	BACT-PSD
				12.31	Auxiliary boiler	Nitrogen Oxides (NOx)	16 PPMVD (INITIAL STACK TEST, 3% OXYGEN)	BACT-PSD
				12.31	Auxiliary boiler	Particulate matter, total < 2.5 Âµ (TPM2.5)	1.14 LB/H	BACT-PSD
				12.31	Auxiliary boiler	Volatile Organic Compounds (VOC)	0.9 LB/H	BACT-PSD
IN-0135	153-29394-00005	11/10/2011	HOOSIER ENERGY REC INC. - MEROM GENERATING STAT	19.9	COAL BED METHANE CBM DEHYDRATOR UNITS (CBM-FIRED REBOILER AND FLASH TANK)	Carbon Dioxide	59.36 LB/H (HOURLY); 260 T/12 CONSEC MONTHS (12 CONSECUTIVE MONTH PERIOD)	OTHER CASE-BY-CASE
AR-0155	2035-AOP-R2	11/07/2018	BIG RIVER STEEL LLC	13.29	BOILER, VACUUM DEGASSER	Particulate matter, filterable (FPM)	9.38 X10^-4 LB/MMBTU	BACT-PSD
				13.29	BOILER, VACUUM DEGASSER	Particulate matter, total < 10 µ (TPM10)	9.38 X10^-4 LB/MMBTU	BACT-PSD
				13.29	BOILER, VACUUM DEGASSER	Particulate matter, total < 2.5 Âµ (TPM2.5)	9.38 X10^-4 LB/MMBTU	BACT-PSD
				13.29	BOILER, VACUUM DEGASSER	Visible Emissions (VE)	5 %	BACT-PSD
				13.29	BOILER, VACUUM DEGASSER	Sulfur Dioxide (SO2)	5.88 X10^-4 LB/MMBTU	BACT-PSD
				13.29	BOILER, VACUUM DEGASSER	Volatile Organic Compounds (VOC)	0.0054 LB/MMBTU	BACT-PSD
				13.29	BOILER, VACUUM DEGASSER	Carbon Monoxide	0.0824 LB/MMBTU	BACT-PSD
				13.29	BOILER, VACUUM DEGASSER	Nitrogen Oxides (NOx)	0.035 LB/MMBTU (3 HR)	BACT-PSD
				13.29	BOILER, VACUUM DEGASSER	Carbon Dioxide	117 LB/MMBTU	BACT-PSD
				13.29	BOILER, VACUUM DEGASSER	Methane	0.0022 LB/MMBTU	BACT-PSD
				13.29	BOILER, VACUUM DEGASSER	Nitrous Oxide (N2O)	0.0002 LB/MMBTU	BACT-PSD
				13.31	BOILER, PICKLE LINE	Particulate matter, filterable (FPM)	0.0019 LB/MMBTU	BACT-PSD
				13.31	BOILER, PICKLE LINE	Particulate matter, total < 10 µ (TPM10)	0.0019 LB/MMBTU	BACT-PSD
				13.31	BOILER, PICKLE LINE	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.0019 LB/MMBTU	BACT-PSD
				13.31	BOILER, PICKLE LINE	Visible Emissions (VE)	5 %	BACT-PSD
				13.31	BOILER, PICKLE LINE	Sulfur Oxides (SOx)	5.88 X10^-4 LB/MMBTU	BACT-PSD
				13.31	BOILER, PICKLE LINE	Volatile Organic Compounds (VOC)	0.0054 LB/MMBTU	BACT-PSD
				13.31	BOILER, PICKLE LINE	Carbon Monoxide	0.0824 LB/MMBTU	BACT-PSD
				13.31	BOILER, PICKLE LINE	Nitrogen Oxides (NOx)	0.035 LB/MMBTU	BACT-PSD
				13.31	BOILER, PICKLE LINE	Carbon Dioxide	117 LB/MMBTU	BACT-PSD
				13.31	BOILER, PICKLE LINE	Methane	0.0022 LB/MMBTU	BACT-PSD
				13.31	BOILER, PICKLE LINE	Nitrous Oxide (N2O)	0.0002 LB/MMBTU	BACT-PSD

RBLC Search Results: Boilers

RBLC ID	PERMIT	DATE	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				13.31	BOILER SN-26, GALVANIZING LINE	Particulate matter, filterable (FPM)	6.8 X10^-4 LB/MMBTU	BACT-PSD
				13.31	BOILER SN-26, GALVANIZING LINE	Particulate matter, total < 10 µ (TPM10)	6.8 X10^-4 LB/MMBTU	BACT-PSD
				13.31	BOILER SN-26, GALVANIZING LINE	Particulate matter, total < 2.5 Âµ (TPM2.5)	6.8 X10^-4 LB/MMBTU	BACT-PSD
				13.31	BOILER SN-26, GALVANIZING LINE	Visible Emissions (VE)	5 %	BACT-PSD
				13.31	BOILER SN-26, GALVANIZING LINE	Sulfur Oxides (SOx)	5.88 X10^-4 LB/MMBTU	BACT-PSD
				13.31	BOILER SN-26, GALVANIZING LINE	Volatile Organic Compounds (VOC)	0.054 LB/MMBTU	BACT-PSD
				13.31	BOILER SN-26, GALVANIZING LINE	Carbon Monoxide	0.0824 LB/MMBTU	BACT-PSD
				13.31	BOILER SN-26, GALVANIZING LINE	Nitrogen Oxides (NOx)	0.035 LB/MMBTU	BACT-PSD
				13.31	BOILER SN-26, GALVANIZING LINE	Carbon Dioxide	117 LB/MMBTU	BACT-PSD
				13.31	BOILER SN-26, GALVANIZING LINE	Methane	0.0022 LB/MMBTU	BACT-PSD
				13.31	BOILER SN-26, GALVANIZING LINE	Nitrous Oxide (N2O)	0.0002 LB/MMBTU	BACT-PSD
OH-0375	P0122829	11/07/2017	LONG RIDGE ENERGY GENERATION LLC - HANNIBAL POV	13.31	Auxiliary Boiler (B001)	Nitrogen Oxides (NOx)	0.29 LB/H; 0.74 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				13.31	Auxiliary Boiler (B001)	Carbon Monoxide	0.99 LB/H; 2.48 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				13.31	Auxiliary Boiler (B001)	Volatile Organic Compounds (VOC)	0.13 LB/H; 0.34 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				13.31	Auxiliary Boiler (B001)	Particulate matter, total (TPM)	0.27 LB/H; 0.67 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				13.31	Auxiliary Boiler (B001)	Particulate matter, total < 10 µ (TPM10)	0.27 LB/H; 0.67 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				13.31	Auxiliary Boiler (B001)	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.27 LB/H; 0.67 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				13.31	Auxiliary Boiler (B001)	Sulfuric Acid (mist, vapors, etc)	0.003 LB/H; 0.007 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				13.31	Auxiliary Boiler (B001)	Visible Emissions (VE)	0	BACT-PSD
				13.31	Auxiliary Boiler (B001)	Carbon Dioxide Equivalent (CO2e)	7845 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
IA-0108	13-137	11/07/2013	IOWA STATE UNIVERSITY POWER PLANT	11.31	Boiler	Carbon Monoxide	0.075 LB/MMBTU (30 DAY ROLLING AVERAGE)	BACT-PSD
				11.31	Boiler	Carbon Dioxide Equivalent (CO2e)	113552 TONS (12-MONTH ROLLING TOTAL)	BACT-PSD
TX-0772	118901, GHGPSDTX108 AND PSDT)	11/06/2015	PORT OF BEAUMONT PETROLEUM TRANSLOAD TERMINA	13.31	Commercial/Institutional-Size Boilers/Furnaces	Nitrogen Oxides (NOx)	0.036 LB/MMBTU	BACT-PSD
				13.31	Commercial/Institutional-Size Boilers/Furnaces	Carbon Monoxide	50 PPMVD @ 3% O2	BACT-PSD
				13.31	Commercial/Institutional-Size Boilers/Furnaces	Volatile Organic Compounds (VOC)	0.94 T/YR	BACT-PSD
				13.31	Commercial/Institutional-Size Boilers/Furnaces	Particulate matter, total < 10 µ (TPM10)	1.31 T/YR	BACT-PSD
				13.31	Commercial/Institutional-Size Boilers/Furnaces	Particulate matter, total < 2.5 Âµ (TPM2.5)	1.31 T/YR	BACT-PSD
				13.31	Commercial/Institutional-Size Boilers/Furnaces	Sulfur Dioxide (SO2)	5 GR/100 SCF	BACT-PSD
				13.31	Commercial/Institutional-Size Boilers/Furnaces	Carbon Dioxide Equivalent (CO2e)	20758 T/YR	BACT-PSD
				13.31	Commercial/Institutional-Size Boilers/Furnaces	Nitrogen Oxides (NOx)	0.011 LB/MMBTU	BACT-PSD
				13.31	Commercial/Institutional-Size Boilers/Furnaces	Carbon Monoxide	50 PPMVD @ 3% O2	BACT-PSD
				13.31	Commercial/Institutional-Size Boilers/Furnaces	Volatile Organic Compounds (VOC)	5.42 T/YR	BACT-PSD
				13.31	Commercial/Institutional-Size Boilers/Furnaces	Particulate matter, total < 10 µ (TPM10)	7.49 T/YR	BACT-PSD
				13.31	Commercial/Institutional-Size Boilers/Furnaces	Particulate matter, total < 2.5 Âµ (TPM2.5)	7.49 T/YR	BACT-PSD
				13.31	Commercial/Institutional-Size Boilers/Furnaces	Sulfur Dioxide (SO2)	5 GR/100 SCF	BACT-PSD
				13.31	Commercial/Institutional-Size Boilers/Furnaces	Carbon Dioxide Equivalent (CO2e)	119195 T/YR	BACT-PSD
				13.31	Commercial/Institutional-Size Boilers/Furnaces	Nitrogen Oxides (NOx)	0.1 LB/MMBTU	BACT-PSD
				13.31	Commercial/Institutional-Size Boilers/Furnaces	Carbon Monoxide	50 PPMVD @ 3% O2	BACT-PSD
				13.31	Commercial/Institutional-Size Boilers/Furnaces	Volatile Organic Compounds (VOC)	0.3 T/YR	BACT-PSD
				13.31	Commercial/Institutional-Size Boilers/Furnaces	Particulate matter, total < 10 µ (TPM10)	0.4 T/YR	BACT-PSD
				13.31	Commercial/Institutional-Size Boilers/Furnaces	Particulate matter, total < 2.5 Âµ (TPM2.5)	4 T/YR	BACT-PSD
				13.31	Commercial/Institutional-Size Boilers/Furnaces	Sulfur Dioxide (SO2)	5 GR/100 SCF	BACT-PSD
				13.31	Commercial/Institutional-Size Boilers/Furnaces	Carbon Dioxide Equivalent (CO2e)	6850 T/YR	BACT-PSD
CA-1214	2012-APP-002050	11/06/2012	GROSSMONT HOSPITAL	11.31	Two 29.4 MMBtu/hr Boilers with low NOx burners	Nitrogen Oxides (NOx)	9 PPMVD@3% O2 (1 HOUR)	OTHER CASE-BY-CASE

RBLC Search Results: Boilers

RBLC ID	PERMIT	DATE	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
SC-0117	1460-0003-DG	11/06/2010	SPRINGS GLOBAL US, INC. - GRACE COMPLEX	12.12	INDUSTRIAL-SIZE BOILERS/FURNACES	Particulate Matter (PM)	0.059 LB/MMBTU - EACH (30 DAY ROLLING AVERAGE - EACH)	BACT-PSD
				12.12	INDUSTRIAL-SIZE BOILERS/FURNACES	Particulate matter, total < 2.5 µ (TPM2.5)	0.043 LB/MMBTU - EACH	BACT-PSD
				12.12	INDUSTRIAL-SIZE BOILERS/FURNACES	Volatile Organic Compounds (VOC)	0.045 LB/MMBTU - EACH	BACT-PSD
				12.12	INDUSTRIAL-SIZE BOILERS/FURNACES	Carbon Monoxide	0.45 LB/MMBTU - EACH (30 DAY ROLLING AVERAGE - EACH)	BACT-PSD
				12.12	INDUSTRIAL-SIZE BOILERS/FURNACES	Visible Emissions (VE)	20 % OPACITY - EACH (6 MINUTE AVERAGE - EACH)	BACT-PSD
				11.12	UTILITY- AND LARGE INDUSTRIAL-SIZE BOILERS/FURNACES	Particulate Matter (PM)	0.059 LB/MMBTU (30 DAY ROLLING AVERAGE)	BACT-PSD
				11.12	UTILITY- AND LARGE INDUSTRIAL-SIZE BOILERS/FURNACES	Particulate matter, total < 2.5 µ (TPM2.5)	0.043 LB/MMBTU	BACT-PSD
				11.12	UTILITY- AND LARGE INDUSTRIAL-SIZE BOILERS/FURNACES	Volatile Organic Compounds (VOC)	0.045 LB/MMBTU	BACT-PSD
				11.12	UTILITY- AND LARGE INDUSTRIAL-SIZE BOILERS/FURNACES	Carbon Monoxide	0.45 LB/MMBTU (30 DAY ROLLING AVERAGE)	BACT-PSD
				11.12	UTILITY- AND LARGE INDUSTRIAL-SIZE BOILERS/FURNACES	Visible Emissions (VE)	20 % OPACITY (6 MINUTE AVERAGE)	BACT-PSD
OH-0363	P0116610	11/05/2014	NTE OHIO, LLC	12.31	Auxiliary Boiler (B001)	Carbon Monoxide	5.55 LB/H; 11.1 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				12.31	Auxiliary Boiler (B001)	Nitrogen Oxides (NOx)	1.65 LB/H; 3.3 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				12.31	Auxiliary Boiler (B001)	Particulate matter, total (TPM)	1.05 LB/H; 2.1 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				12.31	Auxiliary Boiler (B001)	Particulate matter, total < 10 µ (TPM10)	1.05 LB/H; 2.1 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				12.31	Auxiliary Boiler (B001)	Particulate matter, total < 2.5 Âµ (TPM2.5)	1.05 LB/H; 2.1 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				12.31	Auxiliary Boiler (B001)	Visible Emissions (VE)	0	N/A
				12.31	Auxiliary Boiler (B001)	Sulfuric Acid (mist, vapors, etc)	0.03 LB/H; 0.06 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				12.31	Auxiliary Boiler (B001)	Carbon Dioxide Equivalent (CO2e)	35895 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
OH-0360	P0113762	11/05/2013	CARROLL COUNTY ENERGY	13.31	Auxiliary Boiler (B001)	Carbon Monoxide	5.45 LB/H; 12.25 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				13.31	Auxiliary Boiler (B001)	Nitrogen Oxides (NOx)	1.98 LB/H; 4.46 T/YR	BACT-PSD
				13.31	Auxiliary Boiler (B001)	Particulate matter, total < 10 µ (TPM10)	0.79 LB/H; 1.78 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				13.31	Auxiliary Boiler (B001)	Volatile Organic Compounds (VOC)	0.59 LB/H; 1.34 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				13.31	Auxiliary Boiler (B001)	Carbon Dioxide Equivalent (CO2e)	26259.76 T/YR (PER ROLLING 12-MONTHS)	BACT-PSD
				13.31	Auxiliary Boiler (B001)	Sulfuric Acid (mist, vapors, etc)	0.02 LB/H; 0.05 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				13.31	Auxiliary Boiler (B001)	Visible Emissions (VE)	0	BACT-PSD
				13.31	Auxiliary Boiler (B001)	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.79 LB/H; 1.78 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
NY-0112	7-3132-00055/00037	11/02/2012	WESTROCK-SOLVAY LLC	12.31	Boilers - NG	Carbon Dioxide Equivalent (CO2e)	0	BACT-PSD
				12.31	Boilers - NG	Particulate matter, filterable (FPM)	0.007 LB/MMBTU (1 H)	BACT-PSD
				12.22	Boilers - ULSD	Particulate matter, filterable (FPM)	0.015 LB/MMBTU (1 H)	BACT-PSD
MI-0406	51-13	11/01/2013	RENAISSANCE POWER LLC	19.6	EU-HEATERSC: Natural gas-fired fuel heater used for heating natural gas prior to combustion in the CTGs. Misc. boilers, furnaces, and heaters	Carbon Monoxide	0.09 LB/MMBTU (TEST PROTOCOL)	BACT-PSD
				19.6	EU-HEATERSC: Natural gas-fired fuel heater used for heating natural gas prior to combustion in the CTGs. Misc. boilers, furnaces, and heaters	Nitrogen Oxides (NOx)	0.15 LB/MMBTU (TEST PROTOCOL)	BACT-PSD
				19.6	EU-HEATERSC: Natural gas-fired fuel heater used for heating natural gas prior to combustion in the CTGs. Misc. boilers, furnaces, and heaters	Particulate matter, filterable (FPM)	0.009 LB/MMBTU (TEST PROTOCOL)	BACT-PSD
				19.6	EU-HEATERSC: Natural gas-fired fuel heater used for heating natural gas prior to combustion in the CTGs. Misc. boilers, furnaces, and heaters	Particulate matter, total < 10 µ (TPM10)	0.009 LB/MMBTU (TEST PROTOCOL)	BACT-PSD
				19.6	EU-HEATERSC: Natural gas-fired fuel heater used for heating natural gas prior to combustion in the CTGs. Misc. boilers, furnaces, and heaters	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.009 LB/MMBTU (TEST PROTOCOL)	BACT-PSD
				19.6	EU-HEATERSC: Natural gas-fired fuel heater used for heating natural gas prior to combustion in the CTGs. Misc. boilers, furnaces, and heaters	Volatile Organic Compounds (VOC)	0.05 LB/MMBTU (TEST PROTOCOL)	BACT-PSD

RBLC Search Results: Boilers

RBLC ID	PERMIT	DATE	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				19.6	EU-HEATERSC: Natural gas-fired fuel heater used for heating natural gas prior to combustion in the CTGs. Misc. boilers, furnaces, and heaters	Carbon Dioxide Equivalent (CO2e)	10943 T/YR (TEST PROTOCOL)	BACT-PSD
				13.31	FG-AUXBOILER1-2; Two (2) natural gas-fired auxiliary boilers.	Nitrogen Oxides (NOx)	0.035 LB/MMBTU (TEST PROTOCOL; EACH UNIT.)	BACT-PSD
				13.31	FG-AUXBOILER1-2; Two (2) natural gas-fired auxiliary boilers.	Carbon Monoxide	0.036 LB/MMBTU (TEST PROTOCOL; EACH UNIT.)	BACT-PSD
				13.31	FG-AUXBOILER1-2; Two (2) natural gas-fired auxiliary boilers.	Particulate matter, filterable (FPM)	0.005 LB/MMBTU (TEST PROTOCOL; EACH UNIT.)	BACT-PSD
				13.31	FG-AUXBOILER1-2; Two (2) natural gas-fired auxiliary boilers.	Particulate matter, total < 10 µ (TPM10)	0.005 LB/MMBTU (TEST PROTOCOL; EACH UNIT.)	BACT-PSD
				13.31	FG-AUXBOILER1-2; Two (2) natural gas-fired auxiliary boilers.	Particulate matter, total < 2.5 µ (TPM2.5)	0.005 LB/MMBTU (TEST PROTOCOL; EACH UNIT.)	BACT-PSD
				13.31	FG-AUXBOILER1-2; Two (2) natural gas-fired auxiliary boilers.	Volatile Organic Compounds (VOC)	0.005 LB/MMBTU (TEST PROTOCOL; EACH UNIT.)	BACT-PSD
				13.31	FG-AUXBOILER1-2; Two (2) natural gas-fired auxiliary boilers.	Carbon Dioxide Equivalent (CO2e)	11503.7 T/YR (TEST PROTOCOL; TOTAL FOR BOTH UNITS.)	BACT-PSD
NJ-0080	08857/BOP110001	11/01/2012	HESS NEWARK ENERGY CENTER	13.31	Boiler less than 100 MMBtu/hr	Nitrogen Oxides (NOx)	0.01 LB/MMBTU (AVERAGE OF THREE TESTS); 0.66 LB/H (AVERAGE OF THREE TESTS)	LAER
				13.31	Boiler less than 100 MMBtu/hr	Carbon Monoxide	2.45 LB/H (AVERAGE OF THREE TESTS)	BACT-PSD
				13.31	Boiler less than 100 MMBtu/hr	Volatile Organic Compounds (VOC)	0.27 LB/H (AVERAGE OF THREE TESTS)	LAER
				13.31	Boiler less than 100 MMBtu/hr	Particulate matter, filterable (FPM)	0.22 LB/H (AVERAGE OF THREE TESTS)	N/A
				13.31	Boiler less than 100 MMBtu/hr	Particulate matter, total < 10 µ (TPM10)	0.33 LB/H (AVERAGE OF THREE TESTS)	BACT-PSD
				13.31	Boiler less than 100 MMBtu/hr	Particulate matter, total < 2.5 µ (TPM2.5)	0.33 LB/H (AVERAGE OF THREE TESTS)	N/A
				13.31	Boiler less than 100 MMBtu/hr	Sulfur Dioxide (SO2)	0.08 LB/H	N/A
OH-0343	P0106289	11/01/2010	SMART PAPERS-HAMILTON MILL	12.12	Spreader Stoker Boiler	Carbon Monoxide	0.23 LB/MMBTU (PER MMBTU ACTUAL HEAT INPUT); 250.8 T/YR (AS A ROLLING 12 MO. SUMMATION)	BACT-PSD
				12.12	Spreader Stoker Boiler	Particulate matter, total < 10 µ (TPM10)	0.104 LB/MMBTU (PER MMBTU OF HEAT INPUT); 113.9 T/YR	OTHER CASE-BY-CASE
				12.12	Spreader Stoker Boiler	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.03 GR/DSCF; 77.2 T/YR	OTHER CASE-BY-CASE
				12.12	Spreader Stoker Boiler	Particulate matter, total (TPM)	0.116 LB/MMBTU (PER MMBTU OF ACTUAL HEAT INPUT); 126.5 T/YR	OTHER CASE-BY-CASE
				12.12	Spreader Stoker Boiler	Sulfur Dioxide (SO2)	1.7 LB/MMBTU (PER MMBTU ACTUAL HEAT INPUT); 1854 T/YR	OTHER CASE-BY-CASE
				12.12	Spreader Stoker Boiler	Nitrogen Oxides (NOx)	163.5 LB/H; 716 T/YR	OTHER CASE-BY-CASE
				12.12	Spreader Stoker Boiler	Volatile Organic Compounds (VOC)	0.017 LB/MMBTU (PER MMBTU OF ACTUAL HEAT INPUT); 4.9 T/YR	OTHER CASE-BY-CASE
				12.12	Spreader Stoker Boiler	Visible Emissions (VE)	20 % (AS A 6-MINUTE AVERAGE)	OTHER CASE-BY-CASE
				11.19	Pulverized Dry-Bottom Boiler	Carbon Monoxide	0.15 LB/MMBTU (PER MMBTU OF ACTUAL HEAT INPUT); 275.9 T/YR (PER ROLLING 12 MONTH SUMMATION)	BACT-PSD
				11.19	Pulverized Dry-Bottom Boiler	Particulate matter, total < 10 µ (TPM10)	0.042 GR/DSCF	OTHER CASE-BY-CASE
				11.19	Pulverized Dry-Bottom Boiler	Particulate matter, total (TPM)	0.116 LB/MMBTU (PER MMBTU OF ACTUAL HEAT INPUT)	OTHER CASE-BY-CASE
				11.19	Pulverized Dry-Bottom Boiler	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.024 GR/DSCF	OTHER CASE-BY-CASE
				11.19	Pulverized Dry-Bottom Boiler	Sulfur Dioxide (SO2)	1.7 LB/MMBTU (PER MMBTU ACTUAL HEAT INPUT)	OTHER CASE-BY-CASE
				11.19	Pulverized Dry-Bottom Boiler	Volatile Organic Compounds (VOC)	0.007 LB/MMBTU (PER MMBTU ACTUAL HEAT INPUT)	OTHER CASE-BY-CASE
				11.19	Pulverized Dry-Bottom Boiler	Visible Emissions (VE)	20 % (AS A 6-MINUTE AVERAGE)	OTHER CASE-BY-CASE
SC-0182	0820-0079.CA.R2	10/31/2017	FIBER INDUSTRIES LLC	19.6	Boilers	Nitrogen Oxides (NOx)	0.14 LB/MM BTU (105 MM BTU/HR BOILER); 0.09 LB/MM BTU / BOILER (74 PPMV AT 3% O2 (99.9 MM BTU/HR BOILER))	BACT-PSD
				19.6	Boilers	Particulate matter, total (TPM)	0.0076 LB/MM BTU / BOILER	BACT-PSD
				19.6	Boilers	Particulate matter, total < 10 µ (TPM10)	0.0076 LB/MM BTU / BOILER	BACT-PSD
				19.6	Boilers	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.0076 LB/MM BTU / BOILER	BACT-PSD
				19.6	Boilers	Carbon Monoxide	0.15 LB/MM BTU / BOILER	BACT-PSD
				19.6	Boilers	Carbon Dioxide Equivalent (CO2e)	161560 TPY (12 MONTH ROLLING SUM (105 MM BTU BLR)); 156329 TPY / BOILER (12 MONTH ROLLING SUM (99.9 MM BTU BLR))	BACT-PSD
TX-0812	9342A, 9343A, PSDTX963M1, GHGI	10/31/2016	CRUDE OIL PROCESSING FACILITY	12.31	Industrial Boilers and Furnaces (Natural gas fired)	Carbon Dioxide Equivalent (CO2e)	54800 T/YR	BACT-PSD
MD-0046	PSC CASE NO. 9297	10/31/2014	KEYS ENERGY CENTER	13.31	AUXILIARY BOILER	Carbon Monoxide	0.08 LB/MMBTU (3-HOUR BLOCK AVERAGE)	BACT-PSD
				13.31	AUXILIARY BOILER	Particulate matter, filterable (FPM)	0.0075 LB/MMBTU (3-HOUR BLOCK AVERAGE)	BACT-PSD
				13.31	AUXILIARY BOILER	Nitrogen Oxides (NOx)	0.01 LB/MMBTU (3-HOUR BLOCK AVERAGE)	BACT-PSD
				13.31	AUXILIARY BOILER	Volatile Organic Compounds (VOC)	0.002 LB/MMBTU (3-HOUR BLOCK AVERAGE)	LAER
				13.31	AUXILIARY BOILER	Particulate matter, total < 10 µ (TPM10)	0.0075 LB/MMBTU (3-HOUR AVERAGE)	BACT-PSD
*TX-0906	6825A, PSDTX49M2, GHGPSDTX16	10/30/2020	PORT ARTHUR REFINERY	11.39	BOILER	Nitrogen Oxides (NOx)	0	BACT-PSD
				11.39	BOILER	Volatile Organic Compounds (VOC)	0	BACT-PSD
				11.39	BOILER	Carbon Dioxide Equivalent (CO2e)	0	BACT-PSD
				11.39	BOILER	Carbon Monoxide	0	BACT-PSD

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RBLC ID	PERMIT	DATE	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				11.39	BOILER	Particulate matter, filterable (FPM)	0	BACT-PSD
				11.39	BOILER	Particulate matter, total < 10 µ (TPM10)	0	BACT-PSD
				11.39	BOILER	Particulate matter, total < 2.5 µ (TPM2.5)	0	BACT-PSD
				11.39	BOILER	Sulfur Dioxide (SO2)	0	BACT-PSD
TX-0601	5699 AND PSDTX18M2	10/28/2011	GIBBONS CREEK STEAM ELECTRIC STATION	11.11	Boiler	Carbon Monoxide	0.12 LB/MMBTU (30-DAY ROLLING AVERAGE); 2428 LB/H	BACT-PSD
				11.11	Boiler	Sulfur Dioxide (SO2)	1.2 LB/MMBTU; 1771 LB/H	BACT-PSD
MN-0078	01700002-011	10/28/2009	SAPPI CLOQUET LLC	11.31	BOILER	Particulate matter, total < 2.5 Âµ (TPM2.5)	2.5 LB/H (3 HOUR AVERAGE)	BACT-PSD
				11.12	BOILER	Particulate matter, total < 2.5 Âµ (TPM2.5)	13.5 LB/H (3 HOUR AVERAGE)	BACT-PSD
				11.12	BOILER	Particulate matter, total < 2.5 Âµ (TPM2.5)	13.5 LB/H (3 HOUR AVERAGE)	BACT-PSD
*SC-0195	0080-0144-CF	10/27/2013	AMERESCO FEDERAL SOLUTIONS	13.12	Biomass Boiler BCB-3	Carbon Monoxide	620 PPM (AT 3% O2)	BACT-PSD
FL-0328	OCS-EPA-R4007	10/27/2011	ENI - HOLY CROSS DRILLING PROJECT	13.22	Boiler	Nitrogen Oxides (NOx)	0.49 TONS PER YEAR (12-MONTH ROLLING)	BACT-PSD
				13.22	Boiler	Carbon Monoxide	0.12 TONS PER YEAR (12-MONTH ROLLING)	BACT-PSD
				13.22	Boiler	Particulate matter, total (TPM)	0.05 TONS PER YEAR (12-MONTH ROLLING)	BACT-PSD
				13.22	Boiler	Particulate matter, total < 10 µ (TPM10)	0.02 TONS PER YEAR (12-MONTH ROLLING)	BACT-PSD
				13.22	Boiler	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.01 TONS PER YEAR (12-MONTH ROLLING)	BACT-PSD
				13.22	Boiler	Carbon Dioxide	565 TONS PER YEAR (12-MONTH ROLLING)	BACT-PSD
				13.22	Boiler	Volatile Organic Compounds (VOC)	0.005 TONS PER YEAR (12-MONTH ROLLING)	BACT-PSD
AR-0141	1995-AOP-R8	10/26/2016	PLUM POINT ENERGY STATION	11.11	BOILER, SN-01 UNIT 1	Carbon Monoxide	0.15 LB/MMBTU	BACT-PSD
IA-0105	12-219	10/26/2012	IOWA FERTILIZER COMPANY	11.31	Auxiliary Boiler	Particulate matter, total (TPM)	0.0024 LB/MMBTU (AVERAGE OF 3 TEST RUNS); 1.06 TONS/YR (ROLLING 12 MONTH TOTAL)	BACT-PSD
				11.31	Auxiliary Boiler	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.0024 LB/MMBTU (AVERAGE OF 3 TEST RUNS); 1.06 TONS/YR (ROLLING 12 MONTH TOTAL)	BACT-PSD
				11.31	Auxiliary Boiler	Particulate matter, total < 10 µ (TPM10)	0.0024 LB/MMBTU (AVERAGE OF 3 TEST RUNS); 1.06 TONS/YR (ROLLING 12 MONTH TOTAL)	BACT-PSD
				11.31	Auxiliary Boiler	Visible Emissions (VE)	0 % OPACITY	BACT-PSD
				11.31	Auxiliary Boiler	Nitrogen Oxides (NOx)	0.0125 LB/MMBTU (ROLLING 30 DAY AVERAGE); 5.52 TONS/YR (ROLLING 12 MONTH TOTAL)	BACT-PSD
				11.31	Auxiliary Boiler	Volatile Organic Compounds (VOC)	0.0014 LB/MMBTU (AVERAGE OF 3 STACK TEST RUNS); 0.62 TONS/YR (ROLLING 12 MONTH TOTAL)	BACT-PSD
				11.31	Auxiliary Boiler	Carbon Monoxide	0.0013 LB/MMBTU (AVERAGE OF 3 STACK TEST RUNS); 0.57 TON/YR (ROLLING 12 MONTH TOTAL)	BACT-PSD
				11.31	Auxiliary Boiler	Carbon Dioxide	117 LB/MMBTU (ROLLING 30 DAY AVERAGE)	BACT-PSD
				11.31	Auxiliary Boiler	Methane	0.0023 LB/MMBTU (AVERAGE OF 3 STACK TEST RUNS)	BACT-PSD
				11.31	Auxiliary Boiler	Nitrous Oxide (N2O)	0.0006 LB/MMBTU (AVERAGE OF 3 STACK TEST RUNS)	BACT-PSD
				11.31	Auxiliary Boiler	Carbon Dioxide Equivalent (CO2e)	51748 TONS/YR (ROLLING 12 MONTH TOTAL)	BACT-PSD
TX-0555	81706	10/26/2009	LUFKIN GENERATING PLANT	11.12	Wood-fired Boiler	Nitrogen Oxides (NOx)	0.075 LB/MMBTU (ROLLING 30-DAY AVERAGE)	BACT-PSD
				11.12	Wood-fired Boiler	Carbon Monoxide	0.075 LB/MMBTU (ROLLING 30-DAY AVERAGE)	BACT-PSD
				11.12	Wood-fired Boiler	Sulfur Dioxide (SO2)	0.025 LB/MMBTU (30 DAY ROLLING AVERAGE)	BACT-PSD
				11.12	Wood-fired Boiler	Particulate matter, total (TPM)	0.025 LB/MMBTU (30 DAY ROLLING AVERAGE)	BACT-PSD
				11.12	Wood-fired Boiler	Particulate matter, filterable (FPM)	0.012 LB/MMBTU (30 DAY ROLLING AVERAGE)	BACT-PSD
				11.12	Wood-fired Boiler	Volatile Organic Compounds (VOC)	0.01 LB/MMBTU (ROLLING 30-DAY AVERAGE)	BACT-PSD
				11.12	Wood-fired Boiler	Ammonia (NH3)	15 PPMV (@7% O2, SLIP)	BACT-PSD
				11.12	Wood-fired Boiler	Hydrochloric Acid	0.02 LB/MMBTU (1 HOUR)	MACT
PA-0275	20-305A	10/24/2011	CRAWFORD RENEWABLE ENERGY LLC/GREENWOOD TW	11.9	Circulating Fluidized Bed Boilers (2)	Nitrogen Oxides (NOx)	252 T/YR (8760)	BACT-PSD
				11.9	Circulating Fluidized Bed Boilers (2)	Sulfur Dioxide (SO2)	142.57 T/YR (8760 HOURS)	BACT-PSD
				11.9	Circulating Fluidized Bed Boilers (2)	Volatile Organic Compounds (VOC)	27.6 T/YR (8760)	BACT-PSD
				11.9	Circulating Fluidized Bed Boilers (2)	Lead (Pb) / Lead Compounds	65.4 LB/YR	N/A
				11.9	Circulating Fluidized Bed Boilers (2)	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.01 LB/MMBTU (8760); 10.5 LB/H (8760)	BACT-PSD
				11.9	Circulating Fluidized Bed Boilers (2)	Particulate matter, total < 10 µ (TPM10)	0.02 LB/MMBTU (8760); 21 LB/H (8760)	BACT-PSD
				11.9	Circulating Fluidized Bed Boilers (2)	Carbon Monoxide	0.15 LB/MMBTU (8760 HOURS); 157.5 LB/H (8760 HOURS)	BACT-PSD
OH-0374	P0122594	10/23/2017	GUERNSEY POWER STATION LLC	12.31	Auxiliary Boiler (B001)	Nitrogen Oxides (NOx)	3.7 LB/H; 9.25 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				12.31	Auxiliary Boiler (B001)	Carbon Monoxide	10.18 LB/H; 25.45 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				12.31	Auxiliary Boiler (B001)	Volatile Organic Compounds (VOC)	0.93 LB/H; 2.33 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				12.31	Auxiliary Boiler (B001)	Particulate matter, total < 2.5 Âµ (TPM2.5)	1.3 LB/H; 3.25 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				12.31	Auxiliary Boiler (B001)	Particulate matter, total (TPM)	1.3 LB/H; 3.25 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				12.31	Auxiliary Boiler (B001)	Particulate matter, total < 10 µ (TPM10)	1.3 LB/H; 3.25 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				12.31	Auxiliary Boiler (B001)	Sulfur Dioxide (SO2)	0.28 LB/H; 0.7 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				12.31	Auxiliary Boiler (B001)	Sulfuric Acid (mist, vapors, etc)	0.043 LB/H; 0.11 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				12.31	Auxiliary Boiler (B001)	Carbon Dioxide Equivalent (CO2e)	54167 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				12.31	Auxiliary Boiler (B001)	Visible Emissions (VE)	0	BACT-PSD

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CA-1208	SAC 08-01	10/21/2010	BURNEY MOUNTAIN POWER	12.9	ZURN WOOD-FIRED BOILER (BIOMASS COMBUSTION)	Nitrogen Oxides (NOx)	115 PPMVD (@12% CO2, 3-HR ROLLING AVG (BIOMASS)); 0.15 LB/MMBTU (3-HR ROLLING AVG (BIOMASS))	BACT-PSD
				12.9	ZURN WOOD-FIRED BOILER (NATURAL GAS ONLY COMBUSTION)	Nitrogen Oxides (NOx)	70 PPMVD (@3% O2, 3-HR ROLLING AVG (NATURAL GAS)); 0.084 LB/MMBTU (3-HR ROLLING AVG (NATURAL GAS))	BACT-PSD
				12.9	ZURN WOOD-FIRED BOILER (STARTUP & SHUTDOWN PERIODS)	Particulate matter, total (TPM)	0.1 GR/DSCF (BOILER STARTUP & SHUTDOWN PERIODS)	BACT-PSD
				12.9	ZURN WOOD-FIRED BOILER (ALL PERIODS)	Carbon Monoxide	1200 PPMVD (@12% CO2, 24-HR ROLLING AVG (BIOMASS)); 400 PPMVD (@12% CO2, 24-HR ROLLING AVG (NAT GAS))	BACT-PSD
				12.9	ZURN WOOD-FIRED BOILER (ALL PERIODS)	Sulfur Dioxide (SO2)	15 PPM (@12% CO2, HOURLY AVG)	BACT-PSD
				12.9	ZURN WOOD-FIRED BOILER (ALL PERIODS)	Volatile Organic Compounds (VOC)	26 LB/H (3-HR AVG)	BACT-PSD
				12.9	ZURN WOOD-FIRED BOILER (ALL PERIODS)	Particulate matter, filterable (FPM)	0.05 GR/DSCF (@12% CO2)	BACT-PSD
AR-0123	697-AOP-R13	10/18/2013	DELTIC TIMBER CORPORATION WALDO	13.12	WOOD-FIRED BOILER #1	Volatile Organic Compounds (VOC)	4.2 LB/H; 18.4 T/YR	BACT-PSD
				13.12	WOOD-FIRED BOILER #2	Volatile Organic Compounds (VOC)	4.2 LB/H; 18.4 T/YR	BACT-PSD
				13.12	WOOD-FIRED BOILER #3	Volatile Organic Compounds (VOC)	4.2 LB/H; 18.4 T/YR	BACT-PSD
CA-1212	SE 09-01	10/18/2011	PALMDALE HYBRID POWER PROJECT	12.31	AUXILIARY BOILER	Carbon Dioxide Equivalent (CO2e)	0	BACT-PSD
				12.31	AUXILIARY BOILER	Carbon Monoxide	50 PPMVD (@3% O2, 3-HR AVG)	BACT-PSD
				12.31	AUXILIARY BOILER	Nitrogen Oxides (NOx)	9 PPMVD (@3% O2, 3-HR AVG)	BACT-PSD
				12.31	AUXILIARY BOILER	Particulate matter, total (TPM)	0.8 LB/H	BACT-PSD
				12.31	AUXILIARY BOILER	Particulate matter, total < 10 µ (TPM10)	0.8 LB/H	BACT-PSD
				12.31	AUXILIARY BOILER	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.8 LB/H	BACT-PSD
MI-0393	206-09	10/14/2010	RAY COMPRESSOR STATION	13.31	Auxiliary Boiler	Nitrogen Oxides (NOx)	0.43 LB/H (TEST METHOD)	BACT-PSD
				13.31	Auxiliary Boiler	Volatile Organic Compounds (VOC)	0.05 LB/H (TEST METHOD)	BACT-PSD
				19.9	Dehydrator (with reboiler)	Nitrogen Oxides (NOx)	1.3 LB/H (TEST METHOD)	BACT-PSD
				19.9	Dehydrator (with reboiler)	Volatile Organic Compounds (VOC)	4.2 LB/H (TEST METHOD)	BACT-PSD
				13.31	Reboiler (dehydrator with reboiler)	Nitrogen Oxides (NOx)	0.098 LB/MMBTU (TEST METHOD)	BACT-PSD
				13.31	Reboiler (dehydrator with reboiler)	Volatile Organic Compounds (VOC)	0.0054 LB/MMBTU (TEST METHOD)	BACT-PSD
IN-0202	109-32471-00004	10/11/2013	IPL EAGLE VALLEY GENERATING STATION	13.39	AUXILLARY BOILER EU-3	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.005 MMBTU/H (3-HR AVERAGE)	OTHER CASE-BY-CASE
				13.39	AUXILLARY BOILER EU-3	Sulfuric Acid (mist, vapors, etc)	0.75 GR S/100	OTHER CASE-BY-CASE
				13.39	AUXILLARY BOILER EU-3	Carbon Monoxide	0.083 LB/MMBTU (3-HOUR AVERAGE)	OTHER CASE-BY-CASE
				13.39	AUXILLARY BOILER EU-3	Volatile Organic Compounds (VOC)	0.0053 LB/MMBTU (3-HR AVERAGE)	OTHER CASE-BY-CASE
				13.39	AUXILLARY BOILER EU-3	Nitrogen Dioxide (NO2)	0.011 LB/MMBTU (3-HR AVERAGE)	OTHER CASE-BY-CASE
				13.39	AUXILLARY BOILER EU-3	Carbon Dioxide Equivalent (CO2e)	80 % THERMAL EFF (HHV); 40639 TONS/YEAR	OTHER CASE-BY-CASE
				13.39	AUXILLARY BOILER EU-3	Particulate matter, total (TPM)	0.005 LB/MMBTU (3-HR AVERAGE)	OTHER CASE-BY-CASE
AL-0307	701-0007-X121-X126	10/09/2015	ALLOYS PLANT	13.31	PACKAGE BOILER	Nitrogen Oxides (NOx)	30 PPMVD (3% O2); 0.64 LB/H	BACT-PSD
				13.31	PACKAGE BOILER	Carbon Monoxide	0.08 LB/MMBTU	BACT-PSD
				13.31	PACKAGE BOILER	Volatile Organic Compounds (VOC)	0.006 LB/MMBTU	BACT-PSD
				13.31	PACKAGE BOILER	Carbon Dioxide Equivalent (CO2e)	34189 T/YR (12 MONTH ROLLING TOTAL)	BACT-PSD
				13.31	2 CALP LINE BOILERS	Carbon Monoxide	0.08 LB/MMBTU	BACT-PSD
				13.31	2 CALP LINE BOILERS	Carbon Dioxide Equivalent (CO2e)	34189 T/YR (12 MONTH ROLLING TOTAL)	BACT-PSD
				13.31	2 CALP LINE BOILERS	Volatile Organic Compounds (VOC)	0.006 LB/MMBTU	BACT-PSD
				13.31	2 CALP LINE BOILERS	Nitrogen Oxides (NOx)	30 PPMVD (3% O2); 0.9 LB/H	BACT-PSD
*TN-0163	974192	10/08/2018	HOLSTON ARMY AMMUNITION PLANT	11.31	Four Boilers, Natural Gas & No. 2 Oil-Fired	Carbon Monoxide	0.035 LB/MMBTU (NATURAL GAS, AVG OF 3 TEST RUNS); 0.04 LB/MMBTU (#2 OIL, AVG OF 3 TEST RUNS)	BACT-PSD
				11.31	Four Boilers, Natural Gas & No. 2 Oil-Fired	Volatile Organic Compounds (VOC)	0.0015 LB/MMBTU (NATURAL GAS, AVG. OF 3 TEST RUNS); 0.004 LB/MMBTU (#2 OIL, AVG. OF 3 TEST RUNS)	BACT-PSD
				11.31	Four Boilers, Natural Gas & No. 2 Oil-Fired	Carbon Dioxide Equivalent (CO2e)	678139 TONS/12 MONTHS	BACT-PSD
				11.31	Four Boilers, Natural Gas & No. 2 Oil-Fired	Particulate matter, total (TPM)	0.1 LB/MMBTU (AVG. OF 3 TEST RUNS)	N/A
				11.31	Four Boilers, Natural Gas & No. 2 Oil-Fired	Sulfur Dioxide (SO2)	0.8 LB/MMBTU (1-HOUR AVERAGE); 6.4 TONS/12 MONTHS (12 MONTH ROLLING TOTAL)	N/A
				11.31	Four Boilers, Natural Gas & No. 2 Oil-Fired	Nitrogen Oxides (NOx)	0.2 LB/MMBTU (30-DAY ROLLING AVERAGE)	N/A
OH-0310	P0104461	10/08/2009	AMERICAN MUNICIPAL POWER GENERATING STATION	12.31	AUXILIARY BOILER	Particulate matter, total < 10 µ (TPM10)	1.14 LB/H; 0.5 T/YR (PER ROLLING 12-MONTHS)	BACT-PSD
				12.31	AUXILIARY BOILER	Sulfur Dioxide (SO2)	0.09 LB/H; 0.04 T/YR (PER ROLLING 12 MONTHS)	BACT-PSD
				12.31	AUXILIARY BOILER	Nitrogen Oxides (NOx)	21 LB/H; 9.2 T/YR (PER ROLLING 12 MONTHS)	BACT-PSD
				12.31	AUXILIARY BOILER	Carbon Monoxide	12.6 LB/H; 5.52 T/YR (PER ROLLING 12 MONTHS)	BACT-PSD
				12.31	AUXILIARY BOILER	Volatile Organic Compounds (VOC)	0.83 LB/H; 0.36 T/YR (PER ROLLING 12 MONTHS)	BACT-PSD
				12.31	AUXILIARY BOILER	Visible Emissions (VE)	10 % OPACITY (AS A 6-MINUTE AVERAGE)	RACT
				11.11	BOILER (2), PULVERIZED COAL FIRED	Sulfur Dioxide (SO2)	1246 LB/H (AS 3-HR AVERAGE EACH BOILER); 3410 T/YR (PER ROLLING 12 MONTHS EACH BOILER)	BACT-PSD

RBLC Search Results: Boilers

RBLC ID	PERMIT	DATE	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				11.11	BOILER (2), PULVERIZED COAL FIRED	Particulate matter, total < 10 µ (TPM10)	125 LB/H (AS 3-HR AVERAGE EACH BOILER); 546 T/YR (PER ROLLING 12-MONTHS EACH BOILER)	BACT-PSD
				11.11	BOILER (2), PULVERIZED COAL FIRED	Nitrogen Oxides (NOx)	519 LB/H (AS A 24-HOUR AVERAGE EACH BOILER); 1592 T/YR (PER ROLLING 12 MONTHS EACH BOILER)	BACT-PSD
				11.11	BOILER (2), PULVERIZED COAL FIRED	Volatile Organic Compounds (VOC)	19.2 LB/H (AS A 3-HOUR AVERAGE EACH BOILER); 83.2 T/YR (PER ROLLING 12 MONTHS EACH BOILER)	BACT-PSD
				11.11	BOILER (2), PULVERIZED COAL FIRED	Lead (Pb) / Lead Compounds	0.051 LB/H (AS A 3-HOUR AVERAGE EACH BOILER); 0.22 T/YR (PER ROLLING 12-MONTHS EACH BOILER)	BACT-PSD
				11.11	BOILER (2), PULVERIZED COAL FIRED	Sulfuric Acid (mist, vapors, etc)	38.9 LB/H (AS A 3-HOUR AVERAGE EACH BOILER); 170.5 T/YR (PER ROLLING 12 MONTHS EACH BOILER)	BACT-PSD
				11.11	BOILER (2), PULVERIZED COAL FIRED	Visible Emissions (VE)	20 % OPACITY (AS A 6-MINUTE AVERAGE)	RACT
				11.11	BOILER (2), PULVERIZED COAL FIRED	Hydrochloric Acid	0.004 LB/MMBTU (HEAT INPUT AS A 3-HR ROLLING AVERAGE); 90.95 T/YR (PER ROLLING 12 MONTHS EACH BOILER)	MACT
				11.11	BOILER (2), PULVERIZED COAL FIRED	Carbon Monoxide	779 LB/H (AS A 3-HOUR AVERAGE EACH BOILER); 3410 T/YR (PER ROLLING 12 MONTHS EACH BOILER)	BACT-PSD
				11.11	BOILER (2), PULVERIZED COAL FIRED	Particulate matter, filterable (FPM)	0.012 LB/MMBTU (HEAT INPUT, AS 3-HR AVERAGE)	MACT
				11.11	BOILER (2), PULVERIZED COAL FIRED	Mercury	1.4 LB/TRILLION BTU (HEAT INPUT AS 12-MONTH ROLLING AVG.); 63.7 LB/YR (PER ROLLING 12-MONTH PERIOD EACH BOILER)	MACT
				11.11	BOILER (2), PULVERIZED COAL FIRED	Hydrogen Fluoride	0.0004 LB/MMBTU (HEAT INPUT AS A 3-HR ROLLING AVERAGE); 9.09 T/YR (PER ROLLING 12-MONTH PERIOD EACH BOILER)	MACT
MO-0082	102010-003	10/05/2010	ARCHER DANIELS MIDLAND-MEXICO	13.31	DUAL-FIRED 85.6 MMBTU/HR WATER-TUBE BOILER	Volatile Organic Compounds (VOC)	0.0055 LB/MMBTU (TEST METHOD AVG); 0.001 LB/MMBTU (TEST METHOD AVG)	BACT-PSD
LA-0335	PSD-LA-701(M-2)	10/04/2018	JOYCE MILL	13.12	EQT003 Kipper Boiler No. 1 (74A)	Carbon Monoxide	105.53 LB/H ((NOT CHANGED))	BACT-PSD
				12.12	EQT0005 McBurney Boiler No. 4 (75A)	Carbon Monoxide	279.12 LB/H	BACT-PSD
LA-0265	PSD-LA-619(M7)	10/02/2012	ST. CHARLES REFINERY	13.39	Boiler 401-F (EQT0323)	Nitrogen Oxides (NOx)	0.04 LB/MMBTU	BACT-PSD
ME-0042	A-215-77-13-A	09/29/2017	WOODLAND PULP LLC	30.211	#3 Recovery Boiler	Carbon Monoxide	429 LB/H (24-HR BLOCK AVERAGE); 1500 LB/H (1-HR BLOCK)	BACT-PSD
LA-0356	PSD-LA-822(M2)	09/27/2019	GARYVILLE REFINERY	13.39	LSR Hydrotreater Stripper Reboiler (101-85, EQT0169)	Nitrogen Oxides (NOx)	0.04 LB/MM BTU	BACT-PSD
				13.39	LSR Hydrotreater Stripper Reboiler (101-85, EQT0169)	Sulfuric Acid (mist, vapors, etc)	0	BACT-PSD
				13.39	LSR Hydrotreater Stripper Reboiler (101-85, EQT0169)	Hydrogen Sulfide	0	BACT-PSD
				13.39	LSR Hydrotreater Stripper Reboiler (101-85, EQT0169)	Particulate matter, total < 2.5 Âµ (TPM2.5)	0	BACT-PSD
				13.39	LSR Hydrotreater Stripper Reboiler (101-85, EQT0169)	Sulfur Dioxide (SO2)	0	BACT-PSD
				13.39	LSR Hydrotreater Stripper Reboiler (101-85, EQT0169)	Particulate matter, total < 10 µ (TPM10)	0	BACT-PSD
				13.39	LSR Hydrotreater Stripper Reboiler (101-85, EQT0169)	Sulfur, Total Reduced (TRS)	0	BACT-PSD
				13.39	LSR Hydrotreater Stripper Reboiler (101-85, EQT0169)	Volatile Organic Compounds (VOC)	0	BACT-PSD
				13.39	LSR Hydrotreater Stripper Reboiler (101-85, EQT0169)	Carbon Monoxide	0	BACT-PSD
OH-0372	P0121049	09/27/2017	OREGON ENERGY CENTER	13.31	Auxiliary Boiler (B001)	Carbon Monoxide	2.08 LB/H; 2.08 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				13.31	Auxiliary Boiler (B001)	Nitrogen Oxides (NOx)	0.76 LB/H; 0.76 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				13.31	Auxiliary Boiler (B001)	Particulate matter, total < 10 µ (TPM10)	0.3 LB/H; 0.3 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				13.31	Auxiliary Boiler (B001)	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.3 LB/H; 0.3 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				13.31	Auxiliary Boiler (B001)	Sulfur Dioxide (SO2)	0.06 LB/H; 0.06 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				13.31	Auxiliary Boiler (B001)	Visible Emissions (VE)	0	BACT-PSD
				13.31	Auxiliary Boiler (B001)	Sulfuric Acid (mist, vapors, etc)	0.004 LB/H; 0.004 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				13.31	Auxiliary Boiler (B001)	Volatile Organic Compounds (VOC)	0.23 LB/H; 0.23 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				13.31	Auxiliary Boiler (B001)	Carbon Dioxide Equivalent (CO2e)	4502 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
AR-0126	263-AOP-R9	09/25/2015	WHITE BLUFF PLANT	11.11	Unit 2 Coal-Fired Boiler	Carbon Monoxide	1342.5 LB/H; 5880.2 T/YR	BACT-PSD
				11.11	Unit 1 Coal-Fired Boiler	Carbon Monoxide	1342.5 LB/H; 5880.2 T/YR	BACT-PSD
IN-0179	147-32322-00062	09/25/2013	OHIO VALLEY RESOURCES, LLC	12.31	FOUR (4) NATURAL GAS-FIRED BOILERS	Particulate matter, filterable (FPM)	1.9 LB/MMCF (3-HR AVERAGE)	BACT-PSD

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				12.31	FOUR (4) NATURAL GAS-FIRED BOILERS	Particulate matter, total < 2.5 Âµ (TPM2.5)	7.6 LB/MMCF (3-HR AVERAGE)	BACT-PSD
				12.31	FOUR (4) NATURAL GAS-FIRED BOILERS	Nitrogen Oxides (NOx)	20.4 LB/MMCF (24-HR AVERAGE)	BACT-PSD
				12.31	FOUR (4) NATURAL GAS-FIRED BOILERS	Carbon Monoxide	37.22 LB/MMCF (3-HR AVERAGE)	BACT-PSD
				12.31	FOUR (4) NATURAL GAS-FIRED BOILERS	Volatile Organic Compounds (VOC)	5.5 LB/MMCF (3-HR AVERAGE)	BACT-PSD
				12.31	FOUR (4) NATURAL GAS-FIRED BOILERS	Carbon Dioxide	59.61 TONS/MMCF (3-HR AVERAGE)	BACT-PSD
				12.31	FOUR (4) NATURAL GAS-FIRED BOILERS	Particulate matter, total < 10 µ (TPM10)	7.6 LB/MMCF (3-HR AVERAGE)	BACT-PSD
NH-0016	TP-0033 (PROJECT CANCELLED)	09/25/2009	CLEAN POWER BERLIN LLC	11.12	BOILER 1	Nitrogen Oxides (NOx)	0.065 LB/MMBTU (30-DAY ROLLING AV)	LAER
AR-0161	2384-AOP-R0	09/23/2019	SUN BIO MATERIAL COMPANY	30.211	Recovery Boiler	Particulate matter, filterable (FPM)	0.015 GR/DSCF @ 8% O2 (PER RTM)	BACT-PSD
				30.211	Recovery Boiler	Particulate matter, total < 10 µ (TPM10)	0.03 GR/DSCF @ 8% O2 (PER RTM)	BACT-PSD
				30.211	Recovery Boiler	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.027 GR/DSCF @ 8% O2 (PER RTM)	BACT-PSD
				30.211	Recovery Boiler	Visible Emissions (VE)	5 % (6 MINUTES)	BACT-PSD
				30.211	Recovery Boiler	Sulfur Dioxide (SO2)	15 PPMVD @ 8% O2 (3 1-HOUR TESTS)	BACT-PSD
				30.211	Recovery Boiler	Volatile Organic Compounds (VOC)	10 PPMVD @ 8% O2 (3 1-HOUR TESTS)	BACT-PSD
				30.211	Recovery Boiler	Carbon Monoxide	200 PPMVD @ 8% O2 (3 1-HOUR TESTS)	BACT-PSD
				30.211	Recovery Boiler	Nitrogen Oxides (NOx)	85 PPMVD @ 8% O2 (3 1-HOUR TESTS)	BACT-PSD
				30.211	Recovery Boiler	Sulfuric Acid (mist, vapors, etc)	1.2 PPMVD @ 8% O2 (3 1-HOUR TESTS)	BACT-PSD
				30.211	Recovery Boiler	Hydrogen Sulfide	3 PPMVD @ 8% O2 (24-HOUR)	BACT-PSD
				30.211	Recovery Boiler	Carbon Dioxide Equivalent (CO2e)	208 LB/MMBTU	BACT-PSD
				11.12	Power Boiler	Particulate matter, filterable (FPM)	0.0098 LB/MMBTU	BACT-PSD
				11.12	Power Boiler	Particulate matter, total < 10 µ (TPM10)	0.024 LB/MMBTU	BACT-PSD
				11.12	Power Boiler	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.024 LB/MMBTU	BACT-PSD
				11.12	Power Boiler	Visible Emissions (VE)	5 %	BACT-PSD
				11.12	Power Boiler	Sulfur Dioxide (SO2)	0.025 LB/MMBTU (3 1-HOUR TESTS)	BACT-PSD
				11.12	Power Boiler	Sulfuric Acid (mist, vapors, etc)	0.0023 LB/MMBTU (3 1-HOUR TESTS)	BACT-PSD
				11.12	Power Boiler	Volatile Organic Compounds (VOC)	0.01 LB/MMBTU	BACT-PSD
				11.12	Power Boiler	Carbon Monoxide	0.075 LB/MMBTU (24-HOUR)	BACT-PSD
				11.12	Power Boiler	Nitrogen Oxides (NOx)	0.06 LB/MMBTU (3-HOUR)	BACT-PSD
				11.12	Power Boiler	Carbon Dioxide Equivalent (CO2e)	211 LB/MMBTU	BACT-PSD
OH-0367	P0119495	09/23/2016	SOUTH FIELD ENERGY LLC	13.31	Auxiliary Boiler (B001)	Carbon Monoxide	7.92 LB/H; 15.39 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				13.31	Auxiliary Boiler (B001)	Nitrogen Oxides (NOx)	9.9 LB/H; 10.65 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				13.31	Auxiliary Boiler (B001)	Particulate matter, total < 10 µ (TPM10)	5.94 LB/H; 5.69 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				13.31	Auxiliary Boiler (B001)	Particulate matter, total < 2.5 Âµ (TPM2.5)	5.94 LB/H; 5.69 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				13.31	Auxiliary Boiler (B001)	Volatile Organic Compounds (VOC)	0.59 LB/H; 1.49 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				13.31	Auxiliary Boiler (B001)	Sulfur Dioxide (SO2)	0.15 LB/H; 0.35 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				13.31	Auxiliary Boiler (B001)	Sulfuric Acid (mist, vapors, etc)	0.011 LB/H; 0.03 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				13.31	Auxiliary Boiler (B001)	Carbon Dioxide Equivalent (CO2e)	32171 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				13.31	Auxiliary Boiler (B001)	Visible Emissions (VE)	0	BACT-PSD
FL-0332	PSD-FL-416, 0550063-001-AC	09/23/2011	HIGHLANDS BIOREFINERY AND COGENERATION PLANT	12.12	Biomass Boiler, Emission Unit 002	Nitrogen Oxides (NOx)	0.1 LB/MMBTU (30 DAYS ROLLING)	BACT-PSD
				12.12	Biomass Boiler, Emission Unit 002	Carbon Monoxide	0.3 LB/MMBTU (30 DAYS ROLLING)	BACT-PSD
				12.12	Biomass Boiler, Emission Unit 002	Hazardous Air Pollutants (HAP)	19.61 T/YR	OTHER CASE-BY-CASE
				12.12	Biomass Boiler, Emission Unit 002	Sulfuric Acid (mist, vapors, etc)	0.0037 LB/MMBTU	OTHER CASE-BY-CASE
				12.12	Biomass Boiler, Emission Unit 002	Sulfur Dioxide (SO2)	0.06 LB/MMBTU (30-DAYS ROLLING)	BACT-PSD
				12.12	Biomass Boiler, Emission Unit 002	Particulate matter, total < 10 µ (TPM10)	0.015 LB/MMBTU (N/A)	BACT-PSD
				12.12	Biomass Boiler, Emission Unit 002	Visible Emissions (VE)	10 % OPACITY (6 MINUTE BLOCKS); 20 % OPACITY (ONE 6 MINUTE BLOCK/H)	BACT-PSD
				12.12	Biomass Boiler, Emission Unit 002	Volatile Organic Compounds (VOC)	0.017 LB/MMBTU (N/A)	BACT-PSD
				12.12	Biomass Boiler, Emission Unit 002	Hydrochloric Acid	9 T/YR (12 MONTHS ROLLED MONTHLY)	OTHER CASE-BY-CASE
				12.12	Biomass Boiler, Emission Unit 002	Ammonia (NH3)	30 PPMVD @ 7% OXYGEN (N/A)	OTHER CASE-BY-CASE
*WV-0032	R14-0035	09/18/2018	BROOKE COUNTY POWER PLANT	13.31	Auxiliary Boiler	Carbon Monoxide	4.14 LB/HR; 9.47 TONS/YEAR	BACT-PSD
				13.31	Auxiliary Boiler	Nitrogen Oxides (NOx)	1.23 LB/HR; 2.82 TONS/YEAR	BACT-PSD
				13.31	Auxiliary Boiler	Particulate matter, total (TPM)	0.87 LB/HR; 1.99 TONS/YEAR	BACT-PSD
				13.31	Auxiliary Boiler	Sulfuric Acid (mist, vapors, etc)	0.02 LB/HR; 0.03 TONS/YEAR	BACT-PSD
				13.31	Auxiliary Boiler	Volatile Organic Compounds (VOC)	0.9 LB/HR; 2.05 TONS/YEAR	BACT-PSD
				13.31	Auxiliary Boiler	Carbon Dioxide Equivalent (CO2e)	14768 LB/HR; 33790 TONS/YEAR	BACT-PSD
AR-0140	2305-AOP-R0	09/18/2013	BIG RIVER STEEL LLC	13.29	BOILER, VACUUM DEGASSER	Particulate matter, filterable (FPM)	5.2 X10^-4 LB/MMBTU	BACT-PSD
				13.29	BOILER, VACUUM DEGASSER	Particulate matter, total < 10 µ (TPM10)	5.2 X10^-4 LB/MMBTU	BACT-PSD
				13.29	BOILER, VACUUM DEGASSER	Particulate matter, total < 2.5 Âµ (TPM2.5)	5.2 X10^-4 LB/MMBTU	BACT-PSD
				13.29	BOILER, VACUUM DEGASSER	Visible Emissions (VE)	5 %	BACT-PSD
				13.29	BOILER, VACUUM DEGASSER	Sulfur Dioxide (SO2)	5.88 X10^-4 LB/MMBTU	BACT-PSD
				13.29	BOILER, VACUUM DEGASSER	Volatile Organic Compounds (VOC)	0.0054 LB/MMBTU	BACT-PSD
				13.29	BOILER, VACUUM DEGASSER	Carbon Monoxide	0.0824 LB/MMBTU	BACT-PSD
				13.29	BOILER, VACUUM DEGASSER	Nitrogen Oxides (NOx)	0.035 LB/MMBTU (3 HR)	BACT-PSD
				13.29	BOILER, VACUUM DEGASSER	Carbon Dioxide	117 LB/MMBTU	BACT-PSD
				13.29	BOILER, VACUUM DEGASSER	Methane	0.0022 LB/MMBTU	BACT-PSD
				13.29	BOILER, VACUUM DEGASSER	Nitrous Oxide (N2O)	0.0002 LB/MMBTU	BACT-PSD
				13.31	BOILER, PICKLE LINE	Sulfur Dioxide (SO2)	5.88 X10^-4 LB/MMBTU	BACT-PSD

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				13.31	BOILER, PICKLE LINE	Xylene	0.0054 LB/MMBTU	BACT-PSD
				13.31	BOILER, PICKLE LINE	Carbon Monoxide	0.0824 LB/MMBTU	BACT-PSD
				13.31	BOILER, PICKLE LINE	Nitrogen Oxides (NOx)	0.035 LB/MMBTU	BACT-PSD
				13.31	BOILER, PICKLE LINE	Carbon Dioxide Equivalent (CO2e)	117 LB/MMBTU	BACT-PSD
				13.31	BOILER, PICKLE LINE	Methane	0.0022 LB/MMBTU	BACT-PSD
				13.31	BOILER, PICKLE LINE	Nitrous Oxide (N2O)	0.0002 LB/MMBTU	BACT-PSD
				13.31	BOILER, PICKLE LINE	Particulate matter, filterable (FPM)	5.2 X10^-4 LB/MMBTU	BACT-PSD
				13.31	BOILER, PICKLE LINE	Particulate matter, total < 10 µ (TPM10)	5.2 X10^-4 LB/MMBTU	BACT-PSD
				13.31	BOILER, PICKLE LINE	Particulate matter, total < 2.5 Âµ (TPM2.5)	5.2 X10^-4 LB/MMBTU	BACT-PSD
				13.31	BOILER, PICKLE LINE	Visible Emissions (VE)	5 %	BACT-PSD
				13.31	BOILERS SN-26 AND 27, GALVANIZING LINE	Particulate matter, filterable (FPM)	5.2 X10^-4 GR/DSCF	BACT-PSD
				13.31	BOILERS SN-26 AND 27, GALVANIZING LINE	Particulate matter, total < 10 µ (TPM10)	5.2 X10^-4 LB/MMBTU	BACT-PSD
				13.31	BOILERS SN-26 AND 27, GALVANIZING LINE	Particulate matter, total < 2.5 Âµ (TPM2.5)	5.2 X10^-4 LB/MMBTU	BACT-PSD
				13.31	BOILERS SN-26 AND 27, GALVANIZING LINE	Visible Emissions (VE)	5 %	BACT-PSD
				13.31	BOILERS SN-26 AND 27, GALVANIZING LINE	Sulfur Dioxide (SO2)	5.88 X10^-4 LB/MMBTU	BACT-PSD
				13.31	BOILERS SN-26 AND 27, GALVANIZING LINE	Volatile Organic Compounds (VOC)	0.0054 LB/MMBTU	BACT-PSD
				13.31	BOILERS SN-26 AND 27, GALVANIZING LINE	Carbon Monoxide	0.0824 LB/MMBTU	BACT-PSD
				13.31	BOILERS SN-26 AND 27, GALVANIZING LINE	Nitrogen Oxides (NOx)	0.035 LB/MMBTU	BACT-PSD
				13.31	BOILERS SN-26 AND 27, GALVANIZING LINE	Carbon Dioxide	117 LB/MMBTU	BACT-PSD
				13.31	BOILERS SN-26 AND 27, GALVANIZING LINE	Methane	0.0022 LB/MMBTU	BACT-PSD
				13.31	BOILERS SN-26 AND 27, GALVANIZING LINE	Nitrous Oxide (N2O)	0.0002 LB/MMBTU	BACT-PSD
FL-0347	OCS-EPA-R4015	09/16/2014	ANADARKO PETROLEUM CORPORATION - EGOM	13.22	Flowback Boiler	Carbon Dioxide Equivalent (CO2e)	0	BACT-PSD
				13.22	Flowback Boiler	Nitrogen Oxides (NOx)	0	BACT-PSD
				13.22	Flowback Boiler	Particulate matter, total (TPM)	0	BACT-PSD
				13.22	Flowback Boiler	Volatile Organic Compounds (VOC)	0	BACT-PSD
LA-0270	PSD-LA-763	09/16/2013	LAKE CHARLES REFINERY	11.39	High Pressure Boiler B-7 (EQT 0586)	Carbon Dioxide Equivalent (CO2e)	81.6 TONS/MM LB STEAM (12-MONTH ROLLING AVERAGE)	BACT-PSD
CA-1206	SJ 85-04	09/16/2011	STOCKTON COGEN COMPANY	11.11	CIRCULATING FLUIDIZED BED BOILER	Sulfur Dioxide (SO2)	59 LB/H (8-HR AVG); 100 LB/H (3-HR AVG)	BACT-PSD
				11.11	CIRCULATING FLUIDIZED BED BOILER	Nitrogen Oxides (NOx)	50 PPM (@3% O2, 3-HR AVG); 42 LB/H (3-HR AVG)	BACT-PSD
				12.31	AUXILIARY BOILER	Nitrogen Oxides (NOx)	7 PPMVD (@3% O2); 0.0085 LB/MMBTU	BACT-PSD
FL-0362	0550063-004-AC/PSD-FL-416A	09/13/2017	HIGHLANDS ENVIROFUELS	11.12	Cogeneration Biomass Boiler	Nitrogen Oxides (NOx)	0.1 LB/MMBTU (30-DAY ROLLING); 0.15 LB/MMBTU (24-OPERATING-HR ROLLING, EXCL. SSM)	BACT-PSD
				11.12	Cogeneration Biomass Boiler	Sulfur Dioxide (SO2)	0.06 LB/MMBTU (30-DAY-ROLLING); 0.078 LB/MMBTU (1-HR AVG)	BACT-PSD
				11.12	Cogeneration Biomass Boiler	Carbon Dioxide	0.42 LB / LB STEAM (12-OPERATING-MONTH ROLLING)	BACT-PSD
				11.12	Cogeneration Biomass Boiler	Particulate matter, filterable (FPM)	0.015 LB/MMBTU (BACT); 0.026 LB/MMBTU (SUBPART DDDDD)	BACT-PSD
				11.12	Cogeneration Biomass Boiler	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.022 LB/MMBTU	BACT-PSD
				11.12	Cogeneration Biomass Boiler	Carbon Monoxide	0.3 LB/MMBTU (30-DAY-ROLLING)	BACT-PSD
				11.12	Cogeneration Biomass Boiler	Volatile Organic Compounds (VOC)	0.017 LB/MMBTU	BACT-PSD
				11.12	Cogeneration Biomass Boiler	Ammonia (NH3)	25 PPMVD @ 7% O2	BACT-PSD
NE-0054	12-042	09/12/2013	CARGILL, INCORPORATED	11.31	Boiler K	Carbon Monoxide	0.08 LB/MMBTU (1-HOUR)	BACT-PSD
				11.31	Boiler K	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.0075 LB/MMBTU (1-HOUR)	BACT-PSD
				11.31	Boiler K	Nitrogen Oxides (NOx)	0.04 LB/MMBTU (30-DAY ROLLING AVERAGE); 12 LB/H (3-HOUR ROLLING AVERAGE)	BACT-PSD
				11.31	Boiler K	Carbon Dioxide Equivalent (CO2e)	153743 TON/YEAR (12-CONSECUTIVE MONTH ROLLING SUM); 178 LB/1,000 LB STEAM (12-CONSECUTIVE MONTH ROLLING AVERAGE)	BACT-PSD
OK-0148	2012-1026-C PSD	09/12/2012	BUFFALO CREEK PROCESSING PLANT	13.31	Commercial/Institutional Boilers (<100 MMBTUH)	Nitrogen Oxides (NOx)	0.045 LB/MMBTU	BACT-PSD
				13.31	Commercial/Institutional Boilers (<100 MMBTUH)	Carbon Monoxide	0.074 LB/MMBTU	BACT-PSD
				13.31	Commercial/Institutional Boilers (<100 MMBTUH)	Volatile Organic Compounds (VOC)	0.0054 LB/MMBTU	BACT-PSD
				13.31	Commercial/Institutional Boilers (<100 MMBTUH)	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.0075 LB/MMBTU	BACT-PSD
				13.31	Commercial/Institutional Boilers (<100 MMBTUH)	Carbon Dioxide Equivalent (CO2e)	117 LB/MMBTU	BACT-PSD
TX-0766	116055, PSDTX1386, GHGPSDTX1(	09/11/2015	GOLDEN PASS LNG EXPORT TERMINAL	12.31	Auxiliary Boiler	Carbon Dioxide Equivalent (CO2e)	1440 HR/YR	BACT-PSD

RBLC Search Results: Boilers

RBLC ID	PERMIT	DATE	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
NY-0114	4-0122-00007/00719	09/11/2014	SABIC INNOVATIVE PLASTICS US LLC	13.31	Package boilers	Carbon Dioxide Equivalent (CO2e)	0	BACT-PSD
*TX-0904	156571, PSDTX1564, GHGPSDTX19	09/09/2020	MOTIVA POLYETHYLENE MANUFACTURING COMPLEX	64.999	BOILERS	Nitrogen Oxides (NOx)	0.015 LB/MMBTU (1-HR); 0.01 LB/MMBTU (ANNUAL)	BACT-PSD
				64.999	BOILERS	Volatile Organic Compounds (VOC)	0.0054 LB/MMBTU	BACT-PSD
				64.999	BOILERS	Carbon Monoxide	100 PPMVD (1HR); 50 PPMVD (ANNUAL)	BACT-PSD
				64.999	BOILERS	Sulfur Dioxide (SO2)	5 GR/100SCF	BACT-PSD
				64.999	BOILERS	Particulate matter, filterable (FPM)	0.0075 LB/MMBTU	BACT-PSD
				64.999	BOILERS	Particulate matter, total < 10 µ (TPM10)	0.0075 LB/MMBTU	BACT-PSD
				64.999	BOILERS	Particulate matter, total < 2.5 µ (TPM2.5)	0.0075 LB/MMBTU	BACT-PSD
				64.999	BOILERS	Carbon Dioxide Equivalent (CO2e)	0	BACT-PSD
OH-0370	P0122331	09/07/2017	TRUMBULL ENERGY CENTER	13.31	Auxiliary Boiler (B001)	Carbon Monoxide	2.08 LB/H; 2.08 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				13.31	Auxiliary Boiler (B001)	Nitrogen Oxides (NOx)	0.76 LB/H; 0.76 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				13.31	Auxiliary Boiler (B001)	Particulate matter, total < 10 µ (TPM10)	0.3 LB/H; 0.3 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				13.31	Auxiliary Boiler (B001)	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.3 LB/H; 0.3 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				13.31	Auxiliary Boiler (B001)	Volatile Organic Compounds (VOC)	0.23 LB/H; 0.23 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				13.31	Auxiliary Boiler (B001)	Sulfur Dioxide (SO2)	0.06 LB/H; 0.06 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				13.31	Auxiliary Boiler (B001)	Sulfuric Acid (mist, vapors, etc)	0.0087 LB/H; 0.0087 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				13.31	Auxiliary Boiler (B001)	Carbon Dioxide Equivalent (CO2e)	4456 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				13.31	Auxiliary Boiler (B001)	Visible Emissions (VE)	0	BACT-PSD
WI-0266	18-DMM-077	09/06/2018	GREEN BAY PACKAGING, INC. - SHIPPING CONTAINER DI	13.31	Natural gas-fied boiler (Boiler B01)	Volatile Organic Compounds (VOC)	0.0055 LB/MMBTU	BACT-PSD
				13.31	Natural gas-fied boiler (Boiler B01)	Carbon Dioxide Equivalent (CO2e)	160 LBCO2E/1000 LB STEAM	BACT-PSD
WI-0267	18-DMM-090	09/06/2018	GREEN BAY PACKAGING, INC. - MILL DIVISION	11.31	Two Natural Gas-Fired Boilers (Boilers B34 and B35)	Volatile Organic Compounds (VOC)	0.0055 LB/MMBTU	BACT-PSD
				11.31	Two Natural Gas-Fired Boilers (Boilers B34 and B35)	Carbon Dioxide Equivalent (CO2e)	160 LBCO2E/1000 LB STEAM (12-MONTH AVG.)	BACT-PSD
IL-0114	13060007	09/05/2014	CRONUS CHEMICALS, LLC	11.31	Boiler	Nitrogen Oxides (NOx)	0.012 LB/MMBTU (30-DAY AVERAGE ROLLED DAILY)	BACT-PSD
				11.31	Boiler	Carbon Monoxide	0.02 LB/MMBTU (30-DAY AVERAGE ROLLED DAILY)	BACT-PSD
				11.31	Boiler	Particulate matter, filterable (FPM)	0.0019 LB/MMBTU (3-HOUR AVERAGE)	BACT-PSD
				11.31	Boiler	Particulate matter, total < 10 µ (TPM10)	0.0024 LB/MMBTU (3-HOUR AVERAGE)	BACT-PSD
				11.31	Boiler	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.001 LB/MMBTU (3-HOUR AVERAGE)	BACT-PSD
				11.31	Boiler	Volatile Organic Compounds (VOC)	0.0054 LB/MMBTU (3-HOUR AVERAGE)	BACT-PSD
TX-0698	9346 PSDTX612M2	09/05/2013	BAYPORT COMPLEX	11.31	(3) gas-fired boilers	Carbon Monoxide	50 PPMVD (@3% O2, 3-HR ROLLING AVERAGE)	BACT-PSD
				11.31	(3) gas-fired boilers	Particulate matter, total < 2.5 Âµ (TPM2.5)	0	BACT-PSD
				11.31	(3) gas-fired boilers	Nitrogen Oxides (NOx)	0.01 LB/MMBTU (3 HOUR ROLLING AVERAGE)	BACT-PSD
FL-0335	1210468-001-AC(PSD-FL-417)	09/05/2012	SUWANNEE MILL	13.31	Four(4) Natural Gas Boilers - 46 MMBtu/hour	Nitrogen Oxides (NOx)	0.036 LB/MMBTU	BACT-PSD
				13.31	Four(4) Natural Gas Boilers - 46 MMBtu/hour	Sulfur Dioxide (SO2)	2 GR OF S/100 SCF	OTHER CASE-BY-CASE
				13.31	Four(4) Natural Gas Boilers - 46 MMBtu/hour	Carbon Monoxide	0.039 LB/MMBTU	BACT-PSD
				13.31	Four(4) Natural Gas Boilers - 46 MMBtu/hour	Particulate matter, total (TPM)	2 GR OF S/100 SCF	BACT-PSD
				13.31	Four(4) Natural Gas Boilers - 46 MMBtu/hour	Particulate matter, total < 10 µ (TPM10)	2 GR OF S/100 SCF	BACT-PSD
				13.31	Four(4) Natural Gas Boilers - 46 MMBtu/hour	Particulate matter, total < 2.5 Âµ (TPM2.5)	2 GR OF S/100 SCF	BACT-PSD
				13.31	Four(4) Natural Gas Boilers - 46 MMBtu/hour	Volatile Organic Compounds (VOC)	0.003 LB/MMBTU	BACT-PSD
				13.12	Two(2) Biomass-Fuel Boilers - 120 MMBtu/hr each	Volatile Organic Compounds (VOC)	0.017 LB/MMBTU	BACT-PSD
				13.12	Two(2) Biomass-Fuel Boilers - 120 MMBtu/hr each	Hydrochloric Acid	0.0022 LB/MMBTU (NESHAP1(SEE NOTE BELOW)); 0.022 LB/MMBTU (NESHAP2(SEE NOTE BELOW))	OTHER CASE-BY-CASE
				13.12	Two(2) Biomass-Fuel Boilers - 120 MMBtu/hr each	Mercury	0 LB/MMBTU (NESHAP1(SEE NOTE BELOW)) (NESHAP2(SEE NOTE BELOW))	OTHER CASE-BY-CASE
				13.12	Two(2) Biomass-Fuel Boilers - 120 MMBtu/hr each	Dichlorodifluoromethane	0.2 NG/DSCM @ 7% O2	OTHER CASE-BY-CASE
				13.12	Two(2) Biomass-Fuel Boilers - 120 MMBtu/hr each	Nitrogen Oxides (NOx)	0.14 MMBTU/H	BACT-PSD
				13.12	Two(2) Biomass-Fuel Boilers - 120 MMBtu/hr each	Sulfur Dioxide (SO2)	0.0336 LB/MMBTU	OTHER CASE-BY-CASE
				13.12	Two(2) Biomass-Fuel Boilers - 120 MMBtu/hr each	Carbon Monoxide	0.4 LB/MMBTU (BACT (SEE NOTE BELOW)); 470 PPMVD @ 3% O2 (NESHAP1(SEE NOTE BELOW))	BACT-PSD

RBLC Search Results: Boilers

RBLC ID	PERMIT	DATE	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				13.12	Two(2) Biomass-Fuel Boilers - 120 MMBtu/hr each	Particulate matter, total (TPM)	0.015 LB/MMBTU ((SEE NOTE BELOW)); 0.0011 LB/MMBTU ((SEE NOTE BELOW))	RACT
				13.12	Two(2) Biomass-Fuel Boilers - 120 MMBtu/hr each	Particulate matter, total < 10 µ (TPM10)	0.032 LB/MMBTU	BACT-PSD
				13.12	Two(2) Biomass-Fuel Boilers - 120 MMBtu/hr each	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.032 LB/MMBTU	BACT-PSD
TX-0763	85872, PSDTX1158M1, GHGPSDTX	09/04/2015	BORGER REFINERY	11.39	Utility and Industrial Boiler greater than 250 million British thermal units (MMBtu) firing	Carbon Dioxide	130 LB/MMBTU	BACT-PSD
				11.39	Utility and Industrial Boiler greater than 250 million British thermal units (MMBtu) firing	Nitrogen Oxides (NOx)	0.015 LB/MMBTU	BACT-PSD
				11.39	Utility and Industrial Boiler greater than 250 million British thermal units (MMBtu) firing	Carbon Monoxide	50 PPM	BACT-PSD
				11.39	Utility and Industrial Boiler greater than 250 million British thermal units (MMBtu) firing	Particulate matter, total < 10 µ (TPM10)	4.17 LB/HR; 18.28 TPY	BACT-PSD
				11.39	Utility and Industrial Boiler greater than 250 million British thermal units (MMBtu)	Carbon Monoxide	50 PPM	BACT-PSD
				11.39	Utility and Industrial Boiler greater than 250 million British thermal units (MMBtu)	Carbon Dioxide	130 LB CO2/MMBTU	BACT-PSD
				11.39	Utility and Industrial Boiler greater than 250 million British thermal units (MMBtu)	Nitrogen Oxides (NOx)	0.04 LB/MMBTU	BACT-PSD
				11.39	Utility and Industrial Boiler greater than 250 million British thermal units (MMBtu)	Particulate matter, total < 10 µ (TPM10)	3.44 LB/HR; 15.09 TPY	BACT-PSD
				11.39	Utility and Industrial Boiler greater than 250 million British thermal units (MMBtu)	Particulate matter, total < 2.5 Âµ (TPM2.5)	3.44 LB/HR; 15.09 TPY	BACT-PSD
				11.39	Utility and Industrial Boiler greater than 250 million British thermal units (MMBtu)	Carbon Dioxide	130 LB/MMBTU	BACT-PSD
				11.39	Utility and Industrial Boiler greater than 250 million British thermal units (MMBtu)	Nitrogen Oxides (NOx)	0.015 LB/MMBTU	BACT-PSD
				11.39	Utility and Industrial Boiler greater than 250 million British thermal units (MMBtu)	Carbon Monoxide	50 PPM	BACT-PSD
				11.39	Utility and Industrial Boiler greater than 250 million British thermal units (MMBtu)	Particulate matter, total < 10 µ (TPM10)	2.72 LB/HR; 11.9 TPY	BACT-PSD
PA-0310	11-00536A	09/02/2016	CPV FAIRVIEW ENERGY CENTER	13.31	Auxilary boiler	Nitrogen Oxides (NOx)	0.011 LB/MMBTU (AVG OF 3 1-HR TEST RUNS); 2.03 TPY (12-MONTH ROLLING BASIS)	LAER
				13.31	Auxilary boiler	Carbon Monoxide	0.037 LB/MMBTU (AVG OF 3 1-HR TEST RUNS); 6.84 TPY (12-MONTH ROLLING BASIS)	BACT-PSD
				13.31	Auxilary boiler	Particulate matter, total (TPM)	0.007 LB/MMBTU; 1.29 TPY (12-MONTH ROLLING BASIS)	BACT-PSD
				13.31	Auxilary boiler	Particulate matter, total < 10 µ (TPM10)	0.007 LB/MMBTU; 1.29 TPY (12-MONTH ROLLING BASIS)	BACT-PSD
				13.31	Auxilary boiler	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.007 LB/MMBTU; 1.29 TPY (12-MONTH ROLLING BASIS)	BACT-PSD
				13.31	Auxilary boiler	Volatile Organic Compounds (VOC)	0.004 LB/MMBTU (AVG OF 3 1-HR TEST RUNS); 0.74 TPY (12-MONTH ROLLING BASIS)	LAER
				13.31	Auxilary boiler	Sulfuric Acid (mist, vapors, etc)	0.0011 LB/MMBTU (AVG OF 3 1-HR TEST RUNS); 20 TPY (12-MONTH ROLLING BASIS)	BACT-PSD
LA-0277	PSD-LA-814	09/01/2016	COMONIMER-1 UNIT	11.31	Utility Steam Boilers (3 units)	Volatile Organic Compounds (VOC)	3.23 LBS/HR (HOURLY MAXIMUM)	BACT-PSD
LA-0319	PSD-LA-814	09/01/2016	LAKE CHARLES CHEMICAL COMPLEX - COMONOMER-1 U	11.31	steam boilers (b7-901, b7-902, b7-903)	Volatile Organic Compounds (VOC)	0	BACT-PSD
KY-0105	V-12-029 R1	09/01/2015	MARATHON PETROLEUM COMPANY LP;CATLETTSBURG F	11.39	Boiler #15 (#15 package boiler)	Particulate matter, total < 2.5 µ (TPM2.5)	3.2 LB/HR; 0.01 LB/MMBTU (AT FULL LOAD)	BACT-PSD
				11.39	Boiler #15 (#15 package boiler)	Carbon Dioxide Equivalent (CO2e)	179000 TONS CO2E PER YEAR (365-DAY ROLLING AVERAGE); 127.1 LB/MMBTU (PER ROLLING 12-MONTH PERIOD)	BACT-PSD
PA-0311	40-00129A	09/01/2015	MOXIE FREEDOM GENERATION PLANT	13.31	Auxilary Boiler	Nitrogen Oxides (NOx)	0.006 LB/MMBTU; 0.66 TPY (12-MONTH ROLLING BASIS)	LAER
				13.31	Auxilary Boiler	Carbon Monoxide	0.037 LB/MMBTU; 4.1 TPY (12-MONTH ROLLING BASIS)	BACT-PSD
				13.31	Auxilary Boiler	Volatile Organic Compounds (VOC)	0.005 LB/MMBTU; 0.554 TPY (12-MONTH ROLLING BASIS)	LAER
				13.31	Auxilary Boiler	Particulate matter, total (TPM)	0.007 LB/MMBTU; 0.775 TPY (12-MONTH ROLLING BASIS)	BACT-PSD
				13.31	Auxilary Boiler	Particulate matter, total < 10 µ (TPM10)	0.007 LB/MMBTU; 0.775 TPY (12-MONTH ROLLING BASIS)	BACT-PSD
				13.31	Auxilary Boiler	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.007 LB/MMBTU; 0.775 TPY (12-MONTH ROLLING BASIS)	BACT-PSD
				13.31	Auxilary Boiler	Sulfuric Acid (mist, vapors, etc)	0.0001 LB/MMBTU; 0.0015 TPY (12-MONTH ROLLING BASIS)	BACT-PSD
				13.31	Auxilary Boiler	Carbon Dioxide Equivalent (CO2e)	13561 TPY (12-MONTH ROLLING BASIS)	BACT-PSD
CA-1203	SAC 87-01-A	08/30/2010	SIERRA PACIFIC INDUSTRIES-LOYALTON	11.12	RILEY SPREADER STOKER BOILER - Transient Period (see notes)	Carbon Monoxide	1998 PPM (@12% CO2, 8-HR ROLLING AVG); 772.42 LB/H (8-HR ROLLING AVG)	BACT-PSD

RBLC Search Results: Boilers

RBLC ID	PERMIT	DATE	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				11.12	RILEY SPREADER STOKER BOILER - Transient Period (see notes)	Nitrogen Oxides (NOx)	102 PPM (@12% CO2, 8-HR ROLLING AVG); 65 LB/H (8-HR ROLLING AVG)	BACT-PSD
				11.12	RILEY SPREADER STOKER BOILER	Nitrogen Oxides (NOx)	80 PPM (@12% CO2, 8-HR ROLLING AVG); 50.75 LB/H (8-HR ROLLING AVG)	BACT-PSD
				11.12	RILEY SPREADER STOKER BOILER	Carbon Monoxide	1443 PPM (@12% CO2, 8-HR ROLLING AVG); 550 LB/H (8-HR ROLLING AVG)	BACT-PSD
				11.12	RILEY SPREADER STOKER BOILER	Particulate matter, total (TPM)	20 % OPACITY (ANY 6-MIN AVG)	BACT-PSD
TX-0861	109923, PSDTX1502, AND GHGPSD	08/29/2019	BUCKEYE TEXAS PROCESSING CORPUS CHRISTI FACILIT	13.39	Boilers	Volatile Organic Compounds (VOC)	5.5 LB/MMSCF	BACT-PSD
				13.39	Boilers	Carbon Dioxide Equivalent (CO2e)	0	BACT-PSD
				13.39	Boilers	Nitrogen Oxides (NOx)	0	BACT-PSD
*PA-0319	30-00235A	08/27/2018	RENAISSANCE ENERGY CENTER	13.31	NATURAL GAS FIRED AUXILIARY BOILER	Nitrogen Oxides (NOx)	0.02 LB/MMBTU (HR)	LAER
				13.31	NATURAL GAS FIRED AUXILIARY BOILER	Carbon Monoxide	0.055 LB/MMBTU (HR)	BACT-PSD
FL-0344	0990332-021-AC	08/27/2013	OKEELANTA COGENERATION PLANT	11.31	Natural Gas Boiler	Particulate matter, total (TPM)	2 GRAINS S/100 SCF GAS; 10 % OPACITY	BACT-PSD
				11.31	Natural Gas Boiler	Nitrogen Oxides (NOx)	0.035 LB/MMBTU (30-DAY ROLLING AVERAGE BY CEMS); 18.8 LB/H (30-DAY ROLLING AVERAGE BY CEMS)	BACT-PSD
				11.31	Natural Gas Boiler	Carbon Monoxide	0.08 LB/MMBTU (30-DAY ROLLING AVG BY CEMS); 42.9 LB/H (30-DAY ROLLING AVG BY CEMS)	BACT-PSD
OH-0366	P0117655	08/25/2015	CLEAN ENERGY FUTURE - LORDSTOWN, LLC	13.31	Auxiliary Boiler (B001)	Carbon Monoxide	1.87 LB/H; 1.87 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				13.31	Auxiliary Boiler (B001)	Nitrogen Oxides (NOx)	0.68 LB/H; 0.68 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				13.31	Auxiliary Boiler (B001)	Particulate matter, total < 10 µ (TPM10)	0.27 LB/H; 0.27 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				13.31	Auxiliary Boiler (B001)	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.27 LB/H; 0.27 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				13.31	Auxiliary Boiler (B001)	Volatile Organic Compounds (VOC)	0.2 LB/H; 0.2 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				13.31	Auxiliary Boiler (B001)	Sulfuric Acid (mist, vapors, etc)	0.004 LB/H; 0.004 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				13.31	Auxiliary Boiler (B001)	Carbon Dioxide Equivalent (CO2e)	4008 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				13.31	Auxiliary Boiler (B001)	Visible Emissions (VE)	0	BACT-PSD
TX-0629	PSD-TX-903-GHG	08/24/2012	BASF TOTAL PETROCHMICALS LP	11.39	Stem Package Boilers	Carbon Dioxide	420095 T/YR (12-MONTH ROLLING AVG BASIS)	BACT-PSD
AL-0315	705-0014-X014	08/22/2017	WESTROCK STEVENSON	30.211	Recovery Boiler	Carbon Monoxide	200 PPM (@ 8% O2 30 DAY AVG); 87.5 LB/HR	BACT-PSD
MI-0442	210-18	08/21/2019	THOMAS TOWNSHIP ENERGY, LLC	13.31	FGAUXBOILER	Nitrogen Oxides (NOx)	0.036 LB/MMBTU (HOURLY; EACH BOILER)	BACT-PSD
				13.31	FGAUXBOILER	Carbon Monoxide	0.037 LB/MMBTU (HOURLY; EACH BOILER)	BACT-PSD
				13.31	FGAUXBOILER	Particulate matter, total (TPM)	1.9 LB/MMSCF (HOURLY; EACH BOILER)	BACT-PSD
				13.31	FGAUXBOILER	Particulate matter, total < 10 µ (TPM10)	7.6 LB/MMSCF (HOURLY; EACH BOILER)	BACT-PSD
				13.31	FGAUXBOILER	Particulate matter, total < 2.5 Âµ (TPM2.5)	7.6 LB/MMSCF (HOURLY; EACH BOILER)	BACT-PSD
				13.31	FGAUXBOILER	Volatile Organic Compounds (VOC)	0.0054 LB/MMBTU (HOURLY; EACH BOILER)	BACT-PSD
				13.31	FGAUXBOILER	Carbon Dioxide Equivalent (CO2e)	41031 T/YR (12-MO ROLLING TIME PERIOD; EACH BOILER)	BACT-PSD
AK-0076	AQ1201CPT01	08/20/2012	POINT THOMSON PRODUCTION FACILITY	12.22	Combustion of Diesel by Boilers	Nitrogen Oxides (NOx)	4 LB/1,000 GALS	BACT-PSD
				12.22	Combustion of Diesel by Boilers	Carbon Monoxide	5 LB/1,000 GALS	BACT-PSD
				12.22	Combustion of Diesel by Boilers	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.25 LB/1,000 GALS	BACT-PSD
				12.22	Combustion of Diesel by Boilers	Carbon Dioxide	0	BACT-PSD
TX-0575	41945, N018M1	08/20/2010	SABINA PETROCHEMICALS LLC	13.31	BOILER	Nitrogen Oxides (NOx)	0.02 LB/MMBTU (HOURLY); 0.007 LB/MMBTU (ANNUAL)	LAER
NV-0049	257	08/20/2009	HARRAH'S OPERATING COMPANY, INC.	11.31	BOILER - UNIT HA08	Particulate matter, total < 10 µ (TPM10)	0.0075 LB/MMBTU; 0.063 LB/H	OTHER CASE-BY-CASE
				11.31	BOILER - UNIT HA08	Nitrogen Oxides (NOx)	0.0146 LB/MMBTU; 12 PPMVD (CORRECTED AT 3% OXYGEN)	BACT-PSD
				11.31	BOILER - UNIT HA08	Carbon Monoxide	0.037 LB/MMBTU; 50 PPMVD (CORRECTED AT 3% OXYGEN)	Other Case-by-Case
				11.31	BOILER - UNIT HA08	Volatile Organic Compounds (VOC)	0.0054 LB/MMBTU; 0.045 LB/H	Other Case-by-Case
				11.31	BOILER - UNIT HA08	Sulfur Dioxide (SO2)	0.0006 LB/MMBTU; 0.005 LB/H	BACT-PSD
				11.31	BOILER - UNIT HA08	Hazardous Air Pollutants (HAP)	0.0019 LB/MMBTU; 0.016 LB/H	Other Case-by-Case
				13.31	BOILER - UNIT FL01	Particulate matter, total < 10 µ (TPM10)	0.0075 LB/MMBTU; 0.11 LB/H	Other Case-by-Case
				13.31	BOILER - UNIT FL01	Nitrogen Oxides (NOx)	0.0353 LB/MMBTU; 29 PPMVD (CORRECTED TO 3% OXYGEN)	BACT-PSD
				13.31	BOILER - UNIT FL01	Carbon Monoxide	0.0705 LB/MMBTU; 95 PPMVD (CORRECTED TO 3% OXYGEN)	Other Case-by-Case
				13.31	BOILER - UNIT FL01	Sulfur Oxides (SOx)	0.0006 LB/MMBTU; 0.0091 LB/H	BACT-PSD
				13.31	BOILER - UNIT FL01	Volatile Organic Compounds (VOC)	0.0054 LB/MMBTU; 0.078 LB/H	OTHER CASE-BY-CASE
				13.31	BOILER - UNIT FL01	Hazardous Air Pollutants (HAP)	0.0019 LB/MMBTU; 0.027 LB/H	OTHER CASE-BY-CASE
				13.31	BOILER - UNIT BA01	Particulate matter, total < 10 µ (TPM10)	0.0077 LB/MMBTU; 0.13 LB/H	Other Case-by-Case
				13.31	BOILER - UNIT BA01	Nitrogen Oxides (NOx)	0.03 LB/MMBTU; 25 PPMVD (CORRECTED TO 3% OXYGEN)	BACT-PSD
				13.31	BOILER - UNIT BA01	Carbon Monoxide	0.0173 LB/MMBTU; 23 PPMVD (CORRECTED TO 3% OXYGEN)	Other Case-by-Case
				13.31	BOILER - UNIT BA01	Sulfur Oxides (SOx)	0.0042 LB/MMBTU; 0.01 LB/H	BACT-PSD
				13.31	BOILER - UNIT BA01	Volatile Organic Compounds (VOC)	0.0054 LB/MMBTU; 0.09 LB/H	Other Case-by-Case
				13.31	BOILER - UNIT BA01	Hazardous Air Pollutants (HAP)	0.0018 LB/MMBTU; 0.03 LB/H	Other Case-by-Case

RBLC Search Results: Boilers

RBLC ID	PERMIT	DATE	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				13.31	BOILER - UNIT BA03	Sulfur Oxides (SOx)	0.0006 LB/MMBTU; 0.02 LB/H	BACT-PSD
				13.31	BOILER - UNIT BA03	Volatile Organic Compounds (VOC)	0.0054 LB/MMBTU; 0.17 LB/H	Other Case-by-Case
				13.31	BOILER - UNIT BA03	Hazardous Air Pollutants (HAP)	0.0019 LB/MMBTU; 0.06 LB/H	Other Case-by-Case
				13.31	BOILER - UNIT BA03	Particulate matter, total < 10 µ (TPM10)	0.0076 LB/MMBTU; 0.24 LB/H	Other Case-by-Case
				13.31	BOILER - UNIT BA03	Nitrogen Oxides (NOx)	0.0306 LB/MMBTU; 25 PPMVD (CORRECTED TO 3% OXYGEN)	BACT-PSD
				13.31	BOILER - UNIT BA03	Carbon Monoxide	0.0172 LB/MMBTU; 23 PPMVD (CORRECTED TO 3% OXYGEN)	Other Case-by-Case
				13.31	BOILER - UNIT CP01	Particulate matter, total < 10 µ (TPM10)	0.0076 LB/MMBTU; 0.27 LB/H	Other Case-by-Case
				13.31	BOILER - UNIT CP01	Nitrogen Oxides (NOx)	0.035 LB/MMBTU; 29 PPMVD (CORRECTED TO 3% OXYGEN)	BACT-PSD
				13.31	BOILER - UNIT CP01	Carbon Monoxide	0.0073 LB/MMBTU; 29 PPMVD (CORRECTED TO 3% OXYGEN)	Other Case-by-Case
				13.31	BOILER - UNIT CP01	Sulfur Oxides (SOx)	0.0006 LB/MMBTU; 0.02 LB/H	BACT-PSD
				13.31	BOILER - UNIT CP01	Volatile Organic Compounds (VOC)	0.0054 LB/MMBTU; 0.19 LB/H	Other Case-by-Case
				13.31	BOILER - UNIT CP01	Hazardous Air Pollutants (HAP)	0.002 LB/MMBTU; 0.07 LB/H	Other Case-by-Case
				13.31	BOILER - UNIT CP03	Particulate matter, total < 10 µ (TPM10)	0.0075 LB/MMBTU; 0.25 LB/H	Other Case-by-Case
				13.31	BOILER - UNIT CP03	Nitrogen Oxides (NOx)	0.0367 LB/MMBTU; 30 PPMVD (CORRECTED TO 3% OXYGEN)	BACT-PSD
				13.31	BOILER - UNIT CP03	Carbon Monoxide	0.0075 LB/MMBTU; 30 PPMVD (CORRECTED TO 3% OXYGEN)	Other Case-by-Case
				13.31	BOILER - UNIT CP03	Sulfur Oxides (SOx)	0.0006 LB/MMBTU; 0.02 LB/H	BACT-PSD
				13.31	BOILER - UNIT CP03	Volatile Organic Compounds (VOC)	0.0054 LB/MMBTU; 0.18 LB/H	Other Case-by-Case
				13.31	BOILER - UNIT CP03	Hazardous Air Pollutants (HAP)	0.0018 LB/MMBTU; 0.06 LB/H	Other Case-by-Case
				13.31	BOILER - UNIT CP26	Particulate matter, total < 10 µ (TPM10)	0.0075 LB/MMBTU; 0.18 LB/H	Other Case-by-Case
				13.31	BOILER - UNIT CP26	Nitrogen Oxides (NOx)	0.0108 LB/MMBTU; 9 PPMVD (CORRECTED TO 3% OXYGEN)	BACT-PSD
				13.31	BOILER - UNIT CP26	Carbon Monoxide	0.037 LB/MMBTU; 50 PPMVD (CORRECTED TO 3% OXYGEN)	Other Case-by-Case
				13.31	BOILER - UNIT CP26	Sulfur Oxides (SOx)	0.0006 LB/MMBTU; 0.01 LB/H	BACT-PSD
				13.31	BOILER - UNIT CP26	Volatile Organic Compounds (VOC)	0.0054 LB/MMBTU; 0.13 LB/H	Other Case-by-Case
				13.31	BOILER - UNIT CP26	Hazardous Air Pollutants (HAP)	0.0021 LB/MMBTU; 0.05 LB/H	Other Case-by-Case
				12.31	BOILER - UNIT PA15	Particulate matter, total < 10 µ (TPM10)	0.0076 LB/MMBTU; 0.16 LB/H	BACT-PSD
				12.31	BOILER - UNIT PA15	Nitrogen Oxides (NOx)	0.0366 LB/MMBTU; 30 PPMVD (CORRECTED TO 3% OXYGEN)	BACT-PSD
				12.31	BOILER - UNIT PA15	Carbon Monoxide	0.848 LB/MMBTU; 114 PPMVD (CORRECTED TO 3% OXYGEN)	Other Case-by-Case
				11.31	BOILER - UNIT IP04	Volatile Organic Compounds (VOC)	0.0053 LB/MMBTU; 0.09 LB/H	Other Case-by-Case
				11.31	BOILER - UNIT IP04	Hazardous Air Pollutants (HAP)	0.0019 LB/MMBTU; 0.14 LB/H	Other Case-by-Case
				11.31	BOILER - UNIT IP04	Particulate matter, total < 10 µ (TPM10)	0.0078 LB/MMBTU; 0.13 LB/H	Other Case-by-Case
				11.31	BOILER - UNIT IP04	Nitrogen Oxides (NOx)	0.049 LB/MMBTU; 40.2 PPMVD (CORRECTED TO 3% OXYGEN)	BACT-PSD
				11.31	BOILER - UNIT IP04	Carbon Monoxide	0.0074 LB/MMBTU; 100 PPMVD (CORRECTED TO 3% OXYGEN)	Other Case-by-Case
				11.31	BOILER - UNIT IP04	Sulfur Oxides (SOx)	0.0006 LB/MMBTU; 0.01 LB/H	BACT-PSD
LA-0252	PSD-LA-701(M1)	08/16/2011	JOYCE MILL	13.12	Kipper Boiler No. 1 and No. 2	Carbon Monoxide	105.52 LB/H ((NOT CHANGED FROM PSD-LA-679))	BACT-PSD
				12.12	McBurney Boiler No. 4	Carbon Monoxide	279.1 LB/H ((NOT CHANGED FRO PSD-LA-679))	BACT-PSD
LA-0254	PSD-LA-752	08/16/2011	NINEMILE POINT ELECTRIC GENERATING PLANT	11.31	AUXILIARY BOILER (AUX-1)	Methane	0.0022 LB/MMBTU	BACT-PSD
				11.31	AUXILIARY BOILER (AUX-1)	Nitrous Oxide (N2O)	0.0002 LB/MMBTU	BACT-PSD
				11.31	AUXILIARY BOILER (AUX-1)	Particulate matter, total < 10 µ (TPM10)	7.6 LB/MMSCF (ANNUAL AVERAGE)	BACT-PSD
				11.31	AUXILIARY BOILER (AUX-1)	Particulate matter, total < 2.5 Âµ (TPM2.5)	7.6 LB/MMSCF (ANNUAL AVERAGE)	BACT-PSD
				11.31	AUXILIARY BOILER (AUX-1)	Carbon Monoxide	84 LB/MMSCF (ANNUAL AVERAGE)	BACT-PSD
				11.31	AUXILIARY BOILER (AUX-1)	Volatile Organic Compounds (VOC)	5.5 LB/MMSCF (ANNUAL AVERAGE)	BACT-PSD
				11.31	AUXILIARY BOILER (AUX-1)	Carbon Dioxide	117 LB/MMBTU	BACT-PSD
*ND-0033	PTC15052	08/10/2015	GRAND FORKS FERTILIZER PLANT	11.31	Boilers	Particulate matter, total (TPM)	0.0067 LB/MM BTU (1-HOUR AVERAGE)	BACT-PSD
				11.31	Boilers	Particulate matter, total < 10 µ (TPM10)	0.0067 LB/MM BTU (1-HOUR AVERAGE)	BACT-PSD
				11.31	Boilers	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.0067 LB/MM BTU (1-HOUR AVERAGE)	BACT-PSD
				11.31	Boilers	Nitrogen Oxides (NOx)	0.018 LB/MM BTU (30 DAY ROLLING AVERAGE)	BACT-PSD
				11.31	Boilers	Carbon Monoxide	0.036 LB/MM BTU (1-HOUR AVERAGE)	BACT-PSD
				11.31	Boilers	Volatile Organic Compounds (VOC)	0.0054 LB/MM BTU (1-HOUR AVERAGE)	BACT-PSD
				11.31	Boilers	Carbon Dioxide Equivalent (CO2e)	59675 TONS/YEAR CO2E (12-MONTH ROLLING TOTAL)	BACT-PSD
				11.31	Boilers	Visible Emissions (VE)	5 PERCENT	BACT-PSD
*NE-0051	12-003	08/09/2012	PLATTE GENERATING STATION	11.11	COAL FIRED BOILER	Carbon Monoxide	0.5 LB/MMBTU (30 DAY ROLLING AVERAGE)	BACT-PSD
TX-0681	107518/PSDTX1383	08/08/2014	OLEFINS PLANT	12.39	Steam Boilers	Nitrogen Oxides (NOx)	0.01 LB NOX/MMBTU (ROLLING 12 MONTH BASIS, NORMAL OPS)	BACT-PSD
				12.39	Steam Boilers	Carbon Monoxide	0.037 LB CO/MMBTU FIRED; 50 PPMVD (AT 3% OXYGEN)	BACT-PSD
				12.39	Steam Boilers	Volatile Organic Compounds (VOC)	0.003 LB/MMBTU FIRED	BACT-PSD
				12.39	Steam Boilers	Sulfur Dioxide (SO2)	0.001 LB/MMBTU FIRED	BACT-PSD
				12.39	Steam Boilers	Ammonia (NH3)	15 PPMVD (1-HR AVERAGE, AMMONIA SLIP); 10 PPMVD (ANNUAL, AMMONIA SLIP)	BACT-PSD

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LA-0337	PSD-LA-582(M-5)	08/07/2018	NORCO CALCINING PLANT	12.19	N-8-Heat Recovery Boiler/Baghouse Stack	Sulfur Dioxide (SO2)	0	BACT-PSD
LA-0314	PSD-LA-813	08/03/2016	INDORAMA LAKE CHARLES FACILITY	12.31	boiler A and B (010 and 011)	Particulate matter, total < 10 µ (TPM10)	0.007 LB/MM BTU (THREE ONE-HOUR TEST AVERAGE)	BACT-PSD
				12.31	boiler A and B (010 and 011)	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.007 LB/MM BTU (THREE ONE-HOUR TEST AVERAGE)	BACT-PSD
				12.31	boiler A and B (010 and 011)	Nitrogen Oxides (NOx)	0.06 LB/MM BTU (THREE ONE-HOUR TEST AVERAGE)	BACT-PSD
				12.31	boiler A and B (010 and 011)	Carbon Monoxide	0.082 LB/MM BTU (THREE ONE-HOUR TEST AVERAGE)	BACT-PSD
				12.31	boiler A and B (010 and 011)	Volatile Organic Compounds (VOC)	0.0054 LB/MM BTU (THREE ONE-HOUR TEST AVERAGE)	BACT-PSD
				12.31	boiler A and B (010 and 011)	Carbon Dioxide Equivalent (CO2e)	0	BACT-PSD
				12.31	boiler B-201	Particulate matter, total < 10 µ (TPM10)	0.007 LB/MM BTU (THREE ONE-HOUR TEST AVERAGE)	BACT-PSD
				12.31	boiler B-201	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.007 LB/MM BTU (THREE ONE-HOUR TEST AVERAGE)	BACT-PSD
				12.31	boiler B-201	Nitrogen Oxides (NOx)	0.06 LB/MM BTU (THREE ONE-HOUR TEST AVERAGE)	BACT-PSD
				12.31	boiler B-201	Carbon Monoxide	0.037 LB/MM BTU (THREE ONE-HOUR TEST AVERAGE)	BACT-PSD
				12.31	boiler B-201	Volatile Organic Compounds (VOC)	0.0054 LB/MM BTU (THREE ONE-HOUR TEST AVERAGE)	BACT-PSD
				12.31	boiler B-201	Carbon Dioxide Equivalent (CO2e)	0	BACT-PSD
NY-0104	3-335600136/00001	08/01/2013	CPV VALLEY ENERGY CENTER	13.31	Auxiliary boiler	Volatile Organic Compounds (VOC)	0.0038 LB/MMBTU (1 H)	LAER
				13.31	Auxiliary boiler	Nitrogen Oxides (NOx)	0.045 LB/MMBTU (1 H)	LAER
				13.31	Auxiliary boiler	Particulate matter, filterable (FPM)	0.0063 LB/MMBTU (1 H)	BACT-PSD
				13.31	Auxiliary boiler	Sulfur Dioxide (SO2)	0.0022 LB/MMBTU (1 H)	BACT-PSD
				13.31	Auxiliary boiler	Sulfuric Acid (mist, vapors, etc)	0.0002 LB/MMBTU (1 H)	BACT-PSD
				13.31	Auxiliary boiler	Carbon Monoxide	0.0721 LB/MMBTU (1 H)	BACT-PSD
OK-0147	2009-179-C(M-2)PSD	08/01/2012	CHOUTEAU COAL FIRED COMPLEX	13.11	COAL-FIRED BOILERS (2)	Carbon Monoxide	0.17 LB/MMBTU (30-DAY ROLLING AVG)	BACT-PSD
OK-0156	2013-0109-C PSD	07/31/2013	NORTHSTAR AGRI IND ENID	13.31	Gas-fired Boiler	Volatile Organic Compounds (VOC)	0.006 LB/MMBTU (3-HOUR)	BACT-PSD
				13.31	Gas-fired Boiler	Particulate matter, total < 10 µ (TPM10)	0.013 LB/MMBTU (3-HOUR AVG)	BACT-PSD
				13.31	Gas-fired Boiler	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.0126 LB/MMBTU	BACT-PSD
				13.31	Gas-fired Boiler	Carbon Monoxide	146 LB CO2/1000 LB STEAM (30-DAY AVG)	BACT-PSD
				13.31	Refinery Boiler	Nitrogen Oxides (NOx)	0.0075 LB/MMBTU (3-HOUR AVG)	N/A
				13.31	Refinery Boiler	Volatile Organic Compounds (VOC)	0.0054 LB/MMBTU (3-HOUR AVG)	N/A
				13.31	Refinery Boiler	Carbon Dioxide	0	N/A
IL-0129	16060032	07/30/2018	CPV THREE RIVERS ENERGY CENTER	13.31	Auxiliary Boiler	Nitrogen Oxides (NOx)	0.011 LB/MMBTU (3-HOUR AVERAGE)	LAER
				13.31	Auxiliary Boiler	Carbon Monoxide	0.037 LB/MMBTU (3-HOUR AVERAGE)	BACT-PSD
				13.31	Auxiliary Boiler	Particulate matter, total (TPM)	0.0075	BACT-PSD
				13.31	Auxiliary Boiler	Sulfuric Acid (mist, vapors, etc)	0.1 LB/HR	BACT-PSD
				13.31	Auxiliary Boiler	Carbon Dioxide Equivalent (CO2e)	22500 TON/YR (12-MONTH ROLLING AVERAGE)	BACT-PSD
IA-0109	01-A-918-P1	07/28/2015	CITY OF AMES STEAM ELECTRIC PLANT	11.31	Boiler 7	Carbon Monoxide	0.2 LB/MMBTU (AVERAGE OF 3 1-HOUR TEST RUNS)	BACT-PSD
				11.31	Boiler 8	Carbon Monoxide	0.2 LB/MMBTU (AVERAGE OF 3 1-HOUR TEST RUNS)	BACT-PSD
*FL-0367	1010524-001-AC	07/27/2018	SHADY HILLS COMBINED CYCLE FACILITY	13.31	60 MMBtu/hour Auxiliary Boiler	Carbon Monoxide	0.08 LB/MMBTU	BACT-PSD
				13.31	60 MMBtu/hour Auxiliary Boiler	Nitrogen Oxides (NOx)	0.05 LB/MMBTU	BACT-PSD
				13.31	60 MMBtu/hour Auxiliary Boiler	Sulfur Dioxide (SO2)	0	BACT-PSD
				13.31	60 MMBtu/hour Auxiliary Boiler	Particulate matter, filterable (FPM)	0	BACT-PSD
				13.31	60 MMBtu/hour Auxiliary Boiler	Particulate matter, total < 10 µ (TPM10)	0	BACT-PSD
				13.31	60 MMBtu/hour Auxiliary Boiler	Particulate matter, total < 2.5 µ (TPM2.5)	0	BACT-PSD
				13.31	60 MMBtu/hour Auxiliary Boiler	Sulfuric Acid (mist, vapors, etc)	0	BACT-PSD
*PA-0313	18-00030C	07/27/2017	FIRST QUALITY TISSUE LOCK HAVEN PLT	11.31	Boiler #3	Nitrogen Oxides (NOx)	0.011 LB (MMBTU/HR); 3.29 TONS (YR)	LAER
				11.31	Boiler #3	Volatile Organic Compounds (VOC)	0.09 LB (LB/HR); 0.39 TON (TPY)	LAER
NH-0018	TP-0054	07/26/2010	BURGESS BIOPOWER	11.12	EU01 BOILER #1	Beryllium / Beryllium Compounds	0.11 E-5 LB/MMBTU (STACK TEST)	BACT-PSD
				11.12	EU01 BOILER #1	Hydrochloric Acid	0.0008 LB/MMBTU (STACK TEST)	MACT
				11.12	EU01 BOILER #1	Mercury	3 E-6 LB/MMBTU (STACK TEST (LIMIT 0.000003))	MACT
				11.12	EU01 BOILER #1	Nitrogen Oxides (NOx)	0.06 LB/MMBTU (30-DAY ROLLING (EXCL SU/SD)); 244.5 T/YR (INCL SU/SD)	LAER
				11.12	EU01 BOILER #1	Nitrogen Dioxide (NO2)	0.06 LB/MMBTU (30-DAY ROLLING); 244.5 T/YR (INCL SU/SD)	BACT-PSD
				11.12	EU01 BOILER #1	Particulate matter, filterable (FPM)	0.01 LB/MMBTU (STACK TEST)	BACT-PSD
				11.12	EU01 BOILER #1	Particulate matter, total < 10 µ (TPM10)	0.01 LB/MMBTU (STACK TEST)	BACT-PSD
				11.12	EU01 BOILER #1	Particulate matter, total < 2.5 µ (TPM2.5)	0.01 LB/MMBTU (STACK TEST)	BACT-PSD
				11.12	EU01 BOILER #1	Carbon Monoxide	0.075 LB/MMBTU(EXCL SU/SD) (CALENDAR DAY (EXCL SU/SD)); 307.3 T/YR (INCL SU/SD)	BACT-PSD
				11.12	EU01 BOILER #1	Sulfur Dioxide (SO2)	0.012 LB/MMBTU (STACK TEST)	BACT-PSD
				11.12	EU01 BOILER #1	Sulfuric Acid (mist, vapors, etc)	0.002 LB/MMBTU (STACK TEST)	BACT-PSD
MI-0410	191-12	07/25/2013	THETFORD GENERATING STATION	13.31	FGAUXBOILERS: Two auxiliary boilers < 100 MMBTU/H heat input each	Nitrogen Oxides (NOx)	0.05 LB/MMBTU (TEST PROTOCOL)	BACT-PSD

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				13.31	FGAUXBOILERS: Two auxiliary boilers < 100 MMBTU/H heat input each	Carbon Monoxide	0.075 LB/MMBTU (HEAT INPUT. TEST PROTOCOL WILL SPECIFY)	BACT-PSD
				13.31	FGAUXBOILERS: Two auxiliary boilers < 100 MMBTU/H heat input each	Particulate matter, filterable (FPM)	0.0018 LB/MMBTU (HEAT INPUT; TEST PROTOCOL WILL SPECIFY)	BACT-PSD
				13.31	FGAUXBOILERS: Two auxiliary boilers < 100 MMBTU/H heat input each	Particulate matter, total < 10 µ (TPM10)	0.007 LB/MMBTU (HEAT INPUT; TEST PROTOCOL SPECIFY AVG)	BACT-PSD
				13.31	FGAUXBOILERS: Two auxiliary boilers < 100 MMBTU/H heat input each	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.007 LB/MMBTU (HEAT INPUT; TEST PROTOCOL WILL SPECIFY)	BACT-PSD
				13.31	FGAUXBOILERS: Two auxiliary boilers < 100 MMBTU/H heat input each	Volatile Organic Compounds (VOC)	0.008 LB/MMBTU (HEAT INPUT; TEST PROTOCOL WILL SPECIFY)	BACT-PSD
				13.31	FGAUXBOILERS: Two auxiliary boilers < 100 MMBTU/H heat input each	Carbon Dioxide Equivalent (CO2e)	24304 T/YR (12-MO ROLL TIME PERIOD EACH MONTH)	BACT-PSD
NJ-0079	18940 - BOP110003	07/25/2012	WOODBRIDGE ENERGY CENTER	13.31	Commercial/Institutional size boilers less than 100 MMBtu/hr	Volatile Organic Compounds (VOC)	0.14 LB/H (AVERAGE OF THREE TESTS)	LAER
				13.31	Commercial/Institutional size boilers less than 100 MMBtu/hr	Particulate matter, filterable (FPM)	0.17 LB/H (AVERAGE OF THREE TESTS)	OTHER CASE-BY-CASE
				13.31	Commercial/Institutional size boilers less than 100 MMBtu/hr	Particulate matter, total < 10 µ (TPM10)	0.46 LB/H (AVERAGE OF THREE TESTS)	OTHER CASE-BY-CASE
				13.31	Commercial/Institutional size boilers less than 100 MMBtu/hr	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.46 LB/H (AVERAGE OF THREE TESTS)	OTHER CASE-BY-CASE
				13.31	Commercial/Institutional size boilers less than 100 MMBtu/hr	Sulfur Dioxide (SO2)	0.162 LB/H (AVERAGE OF THREE TESTS)	OTHER CASE-BY-CASE
				13.31	Commercial/Institutional size boilers less than 100 MMBtu/hr	Nitrogen Oxides (NOx)	0.01 LB/MMBTU (AVERAGE OF THREE TESTS); 0.92 LB/H (AVERAGE OF THREE TESTS)	LAER
				13.31	Commercial/Institutional size boilers less than 100 MMBtu/hr	Carbon Monoxide	3.44 LB/H (AVERAGE OF THREE TESTS)	BACT-PSD
CA-1210	SJ 86-09	07/21/2010	MT. POSO COGENERATION COMPANY	11.19	CIRCULATING FLUIDIZED BED BOILER	Nitrogen Oxides (NOx)	58.6 LB/H (3-HR AVG (STACK TEST) & 1-HR AVG (CEMS)); 0.1 LB/MMBTU (3-HR AVG (STACK TEST) & 1-HR AVG (CEMS))	BACT-PSD
				11.19	CIRCULATING FLUIDIZED BED BOILER	Sulfur Dioxide (SO2)	25 LB/H (3-HR AVG (STACK TEST) OR 1-HR AVG (CEMS)); 0.04 LB/MMBTU (3-HR AVG (STACK TEST) OR 1-HR AVG (CEMS))	BACT-PSD
				11.19	CIRCULATING FLUIDIZED BED BOILER	Carbon Monoxide	50.3 LB/H (3-HR AVG (STACK TEST) & 1-HR AVG (CEMS))	BACT-PSD
				11.19	CIRCULATING FLUIDIZED BED BOILER	Particulate matter, total (TPM)	0.01 GR/DSCF (@12% CO2, 3-HR (STACK TEST), 1-HR (CEMS))	BACT-PSD
				11.19	CIRCULATING FLUIDIZED BED BOILER	Particulate matter, total < 10 µ (TPM10)	0.01 GR/DSCF (@12% CO2, 3-HR (STACK TEST), 1-HR (CEMS)); 23.2 T/YR (12-MONTH ROLLING TOTAL)	BACT-PSD
NJ-0085	19149/PCP150001	07/19/2016	MIDDLESEX ENERGY CENTER, LLC	13.31	AUXILIARY BOILER	Nitrogen Oxides (NOx)	0.975 LB/H (AV OF THREE ONE H INITIAL STACK TEST); 0.01 LB/MMBTU (AV OF THREE ONE H INITIAL STACK TEST)	LAER
				13.31	AUXILIARY BOILER	Carbon Monoxide	3.61 LB/H (AV OF THREE ONE H STACK TESTS INITIALLY)	BACT-PSD
				13.31	AUXILIARY BOILER	Volatile Organic Compounds (VOC)	0.488 LB/H (AV OF THREE ONE H STACK TESTS INITIALLY)	LAER
				13.31	AUXILIARY BOILER	Particulate matter, filterable (FPM)	0.181 LB/H (AV OF THREE ONE H STACK TESTS INITIALLY)	BACT-PSD
				13.31	AUXILIARY BOILER	Particulate matter, total < 10 µ (TPM10)	0.488 LB/H (AV OF THREE ONE H STACK TESTS INITIALLY)	BACT-PSD
				13.31	AUXILIARY BOILER	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.488 LB/H (AV OF THREE ONE H STACK TESTS INITIALLY)	BACT-PSD
				13.31	AUXILIARY BOILER	Sulfur Dioxide (SO2)	0.128 LB/H	OTHER CASE-BY-CASE
				13.31	AUXILIARY BOILER	Sulfuric Acid (mist, vapors, etc)	0.01 LB/H	BACT-PSD
OH-0350	P0109191	07/18/2012	REPUBLIC STEEL	13.31	Steam Boiler	Carbon Monoxide	0.04 LB/MMBTU; 11.4 T/YR	BACT-PSD
				13.31	Steam Boiler	Volatile Organic Compounds (VOC)	0.35 LB/H; 1.52 T/YR	BACT-PSD
				13.31	Steam Boiler	Nitrogen Oxides (NOx)	0.07 LB/MMBTU	N/A
				13.31	Steam Boiler	Particulate matter, total < 10 µ (TPM10)	0.48 LB/H; 2.1 T/YR	N/A
				13.31	Steam Boiler	Sulfur Oxides (SOx)	0.037 LB/H; 0.16 T/YR	N/A
				13.31	Steam Boiler	Visible Emissions (VE)	20 % OPACITY (AS A 6-MINUTE AV)	N/A
MI-0435	19-18	07/16/2018	BELLE RIVER COMBINED CYCLE POWER PLANT	13.31	EUAUXBOILER: Auxiliary Boiler	Carbon Monoxide	0.075 LB/MMBTU (HOURLY); 7.49 LB/H (HOURLY)	BACT-PSD
				13.31	EUAUXBOILER: Auxiliary Boiler	Nitrogen Oxides (NOx)	0.036 LB/MMBTU (HOURLY); 3.6 LB/H (HOURLY)	BACT-PSD
				13.31	EUAUXBOILER: Auxiliary Boiler	Particulate matter, filterable (FPM)	0.007 LB/MMBTU (HOURLY); 0.7 LB/H (HOURLY)	BACT-PSD
				13.31	EUAUXBOILER: Auxiliary Boiler	Particulate matter, total < 10 µ (TPM10)	0.007 LB/MMBTU (HOURLY); 0.7 LB/H (HOURLY)	BACT-PSD
				13.31	EUAUXBOILER: Auxiliary Boiler	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.007 LB/MMBTU (HOURLY); 0.7 LB/H (HOURLY)	BACT-PSD
				13.31	EUAUXBOILER: Auxiliary Boiler	Volatile Organic Compounds (VOC)	0.008 LB/MMBTU (HOURLY); 0.8 LB/H (HOURLY)	BACT-PSD
				13.31	EUAUXBOILER: Auxiliary Boiler	Sulfuric Acid (mist, vapors, etc)	0.34 GR S/100 SCF (FUEL SUPPLIER RECORDS)	BACT-PSD
				13.31	EUAUXBOILER: Auxiliary Boiler	Carbon Dioxide Equivalent (CO2e)	25623 T/YR (12-MO ROLLING TIME PERIOD)	BACT-PSD
WY-0075	MD-16173	07/16/2014	CHEYENNE PRAIRIE GENERATING STATION	13.31	Auxiliary Boiler	Nitrogen Oxides (NOx)	0.0175 LB/MMBTU (3 HOUR AVERAGE); 0.4 LB/H (3 HOUR AVERAGE)	BACT-PSD
				13.31	Auxiliary Boiler	Carbon Monoxide	0.0375 LB/MMBTU (3 HOUR AVERAGE); 0.9 LB/H (3 HOUR AVERAGE)	BACT-PSD

RBLC Search Results: Boilers

RBLC ID	PERMIT	DATE	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				13.31	Auxiliary Boiler	Particulate matter, total (TPM)	0.0175 LB/MMBTU (3 HOUR AVERAGE); 0.4 LB/H (3 HOUR AVERAGE)	BACT-PSD
				13.31	Auxiliary Boiler	Volatile Organic Compounds (VOC)	0.0017 LB/MMBTU (3 HOUR AVERAGE); 0.1 LB/H (3 HOUR AVERAGE)	BACT-PSD
				13.31	Auxiliary Boiler	Carbon Dioxide Equivalent (CO2e)	12855 TONS (12 MONTH ROLLING)	BACT-PSD
*WI-0272	13-MDW-102	07/15/2014	PACKAGING CORPORATION OF AMERICA-TOMAHAWK	11.31	B12 Boiler	Carbon Dioxide Equivalent (CO2e)	178.75 LB/1000BTU (PER MONTH); 162.5 LB/1000BTU (PER MONTH ON A 12 MONTH AVERAGE)	BACT-PSD
				11.31	B12 Boiler	Carbon Monoxide	50 PPMVD (@3% OXYGEN OVER ANY 30 DAY PERIOD); 15.7 LB/HR (AVERAGED OVER ANY 8-HOUR PERIOD)	BACT-PSD
LA-0311	PSD-LA-772	07/15/2013	DONALDSONVILLE NITROGEN COMPLEX	11.31	No. 6 Ammonia Plant Boiler (15-13) and No. 5 Urea Boiler (23-13) (EQTs 165 & 175)	Carbon Monoxide	24.5 LB/HR (HOURLY MAXIMUM); 93.29 TPY (ANNUAL MAXIMUM)	BACT-PSD
				11.31	No. 6 Ammonia Plant Boiler (15-13) and No. 5 Urea Boiler (23-13) (EQTs 165 & 175)	Carbon Dioxide Equivalent (CO2e)	191.7 LB/1000 LB STEAM (ANNUAL AVERAGE)	BACT-PSD
				11.31	No. 6 Ammonia Plant Boiler (15-13) and No. 5 Urea Boiler (23-13) (EQTs 165 & 175)	Carbon Dioxide	191.5 LB/1000 LB STEAM (ANNUAL AVERAGE)	BACT-PSD
				11.31	No. 6 Ammonia Plant Boiler (15-13) and No. 5 Urea Boiler (23-13) (EQTs 165 & 175)	Methane	0.0036 LB/1000 LB STEAM (ANNUAL AVERAGE)	BACT-PSD
				11.31	No. 6 Ammonia Plant Boiler (15-13) and No. 5 Urea Boiler (23-13) (EQTs 165 & 175)	Nitrous Oxide (N2O)	0.0004 LB/1000 LB STEAM (ANNUAL AVERAGE)	BACT-PSD
KS-0029	C-12987	07/14/2015	THE EMPIRE DISTRICT ELECTRIC COMPANY	13.31	Auxiliary boiler	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.005 LB PER MMBTU	BACT-PSD
				13.31	Auxiliary boiler	Carbon Dioxide Equivalent (CO2e)	9521.5 TONS PER YEAR (12-MONTH ROLLING AVERAGE BASIS)	BACT-PSD
				13.31	Auxiliary boiler	Particulate matter, total < 10 µ (TPM10)	0.005 LB PER MMBTU	BACT-PSD
				13.31	Auxiliary boiler	Particulate matter, total (TPM)	0.005 LB PER MMBTU	BACT-PSD
VA-0327	60277	07/12/2017	PERDUE GRAIN AND OILSEED, LLC	13.31	(4) 27 MMBtu/hr boilers, Natural gas and No. 2 fuel oi	Volatile Organic Compounds (VOC)	0.1 LB/HR	BACT-PSD
LA-0295	PSD-LA-806	07/12/2016	WESTLAKE FACILITY	13.39	Firetube Boiler Nos. 1 and 2 (4-08, EQT 324 & 5-08, EQT 325)	Nitrogen Oxides (NOx)	2.75 LB/H (HOURLY MAXIMUM); 30 PPMVD @ 3% O2 (ANNUAL AVERAGE)	BACT-PSD
				13.39	Firetube Boiler Nos. 1 and 2 (4-08, EQT 324 & 5-08, EQT 325)	Volatile Organic Compounds (VOC)	0.21 LB/H (HOURLY MAXIMUM); 2.8 PPMVD @ 3% O2 (ANNUAL AVERAGE)	BACT-PSD
TX-0803	18999, PSDTX755M1, N216	07/12/2016	PL PROPYLENE HOUSTON OLEFINS PLANT	11.39	Waste Heat Boiler	Nitrogen Oxides (NOx)	5 PPMVD @ 15% O2 (12-MONTH AVG); 9 PPMVD @ 15% O2 (3-HR AVERAGE)	LAER
				11.39	Waste Heat Boiler	Volatile Organic Compounds (VOC)	10.77 LB/H	LAER
				11.39	Waste Heat Boiler	Particulate matter, total < 10 µ (TPM10)	16.68 LB/H	BACT-PSD
				11.39	Waste Heat Boiler	Particulate matter, total < 2.5 Âµ (TPM2.5)	16.68 LB/H	BACT-PSD
IA-0106	PN 13-037	07/12/2013	CF INDUSTRIES NITROGEN, LLC - PORT NEAL NITROGEN	11.31	Boilers	Particulate matter, total (TPM)	0.0024 LB/MMBTU (AVERAGE OF THREE (3) STACK TEST RUNS); 4.79 TONS/YR (ROLLING TWELVE (12) MONTH TOTAL)	BACT-PSD
				11.31	Boilers	Particulate matter, total < 10 µ (TPM10)	0.0024 LB/MMBTU (AVERAGE OF THREE (3) STACK TEST RUNS); 4.79 TONS/YR (ROLLING TWELVE (12) MONTH TOTAL)	BACT-PSD
				11.31	Boilers	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.0024 LB/MMBTU (AVERAGE OF THREE (3) STACK TEST RUNS); 4.79 TONS/YR (ROLLING TWELVE (12) MONTH TOTAL)	BACT-PSD
				11.31	Boilers	Visible Emissions (VE)	0 %	BACT-PSD
				11.31	Boilers	Volatile Organic Compounds (VOC)	0.0014 LB/MMBTU (AVERAGE OF THREE (3) STACK TEST RUNS); 2.8 TONS/YR (ROLLING TWELVE (12) MONTH TOTAL)	BACT-PSD
				11.31	Boilers	Carbon Monoxide	0.0013 LB/MMBTU (AVERAGE OF THREE (3) STACK TESTS); 2.6 TONS/YR (ROLLING TWELVE (12) MONTH TOTAL)	BACT-PSD
				11.31	Boilers	Carbon Dioxide	117 LB/MMBTU (AVERAGE OF THREE (3) STACK TEST RUNS)	N/A
				11.31	Boilers	Methane	0.0023 LB/MMBTU (AVERAGE OF THREE (3) STACK TEST RUNS)	BACT-PSD
				11.31	Boilers	Nitrous Oxide (N2O)	0.0006 LB/MMBTU (AVERAGE OF THREE (3) STACK TEST RUNS)	BACT-PSD
				11.31	Boilers	Carbon Dioxide Equivalent (CO2e)	234168 TONS/YR (ROLLING TWELVE (12) MONTH TOTAL)	BACT-PSD
IN-0287	083-38023-00003	07/10/2018	DUKE ENERGY INDIANA, LLC - EDWARDSPORT GENERAT	12.31	Auxiliary Boiler	Carbon Monoxide	0.036 LB/MMBTU	BACT-PSD
				12.31	Auxiliary Boiler	Volatile Organic Compounds (VOC)	0.005 LB/MMBTU	BACT-PSD
				12.31	Auxiliary Boiler	Particulate matter, total (TPM)	0.0075 LB/MMBTU	BACT-PSD
				12.31	Auxiliary Boiler	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.0075 LB/MMBTU	BACT-PSD
				12.31	Auxiliary Boiler	Particulate matter, total < 10 µ (TPM10)	0.0075 LB/MMBTU	BACT-PSD
LA-0238	PSD-LA-75(M3)	07/10/2009	ALLIANCE REFINERY	11.31	CO BOILERS (2)	Carbon Monoxide	379.1 LB/H (HOURLY MAXIMUM)	BACT-PSD
				11.31	CO BOILERS (2)	Sulfur Dioxide (SO2)	1286 LB/H (HOURLY MAXIMUM)	BACT-PSD

RBLC Search Results: Boilers

RBLC ID	PERMIT	DATE	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
NE-0056	CP13-062	07/03/2014	OPPD - NEBRASKA CITY STATION	11.11	UNIT 2 BOILER	Carbon Monoxide	0.13 LB/MMBTU (30 DAY ROLLING AVERAGE)	BACT-PSD
AK-0084	AQ0934CPT01	06/30/2017	DONLIN GOLD PROJECT	13.9	Boilers and Heaters (natural gas and diesel fired)	Carbon Monoxide	0.0384 LB/MMBTU (ULSD) (3-HOUR AVERAGE); 0.0824 LB/MMBTU (NAT. GAS) (3-HOUR AVERAGE)	BACT-PSD
				13.9	Boilers and Heaters (natural gas and diesel fired)	Nitrogen Oxides (NOx)	0.154 LB/MMBTU (ULSD) (3-HOUR AVERAGE); 0.098 LB/MMBTU (NAT. GAS) (3-HOUR AVERAGE)	BACT-PSD
				13.9	Boilers and Heaters (natural gas and diesel fired)	Particulate matter, total (TPM)	0.0254 LB/MMBTU (ULSD) (3-HOUR AVERAGE); 0.0075 LB/MMBTU (NAT. GAS) (3-HOUR AVERAGE)	BACT-PSD
				13.9	Boilers and Heaters (natural gas and diesel fired)	Particulate matter, total < 10 µ (TPM10)	0.0254 LB/MMBTU (ULSD) (3-HOUR AVERAGE); 0.0075 LB/MMBTU (NAT. GAS) (3-HOUR AVERAGE)	BACT-PSD
				13.9	Boilers and Heaters (natural gas and diesel fired)	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.0254 LB/MMBTU (ULSD) (3-HOUR AVERAGE); 0.0075 LB/MMBTU (NAT. GAS) (3-HOUR AVERAGE)	BACT-PSD
				13.9	Boilers and Heaters (natural gas and diesel fired)	Volatile Organic Compounds (VOC)	0.0015 LB/MMBTU (ULSD) (3-HOUR AVERAGE); 0.0054 LB/MMBTU (NAT. GAS) (3-HOUR AVERAGE)	BACT-PSD
				13.9	Boilers and Heaters (natural gas and diesel fired)	Carbon Dioxide Equivalent (CO2e)	176347 TPY (YEARLY)	BACT-PSD
*LA-0312	PSD-LA-780(M-1)	06/30/2017	ST. JAMES METHANOL PLANT	11.31	B1-13 - Boiler 1 (EQT0003)	Particulate matter, total < 10 µ (TPM10)	1.75 LB/HR; 0.005 LB/MMBTU	BACT-PSD
				11.31	B1-13 - Boiler 1 (EQT0003)	Particulate matter, total < 2.5 Âµ (TPM2.5)	1.75 LB/HR; 0.005 LB/MMBTU	BACT-PSD
				11.31	B1-13 - Boiler 1 (EQT0003)	Nitrogen Oxides (NOx)	3.5 LB/HR; 0.01 LB/MMMTU (12 MONTH AVERAGE)	BACT-PSD
				11.31	B1-13 - Boiler 1 (EQT0003)	Carbon Monoxide	13.3 LB/HR; 0.38 LB/MMBTU	BACT-PSD
				11.31	B1-13 - Boiler 1 (EQT0003)	Volatile Organic Compounds (VOC)	1.89 LB/HR; 0.0054 LB/MMBTU	BACT-PSD
				11.31	B1-13 - Boiler 1 (EQT0003)	Ammonia (NH3)	0	BACT-PSD
				11.31	B1-13 - Boiler 1 (EQT0003)	Carbon Dioxide Equivalent (CO2e)	179511 TON/YEAR; 1.05 TON CO2E/TON MEOH	BACT-PSD
				11.31	B2-13 - Boiler 2 (EQT0004)	Ammonia (NH3)	0	BACT-PSD
				11.31	B2-13 - Boiler 2 (EQT0004)	Carbon Dioxide Equivalent (CO2e)	179511 TPY; 1.05 TON CO2E/TON MEOH	BACT-PSD
				11.31	B2-13 - Boiler 2 (EQT0004)	Particulate matter, total < 10 µ (TPM10)	1.75 LB/HR; 0.005 LB/MMBTU	BACT-PSD
				11.31	B2-13 - Boiler 2 (EQT0004)	Particulate matter, total < 2.5 Âµ (TPM2.5)	1.75 LB/HR; 0.005 LB/MMBTU	BACT-PSD
				11.31	B2-13 - Boiler 2 (EQT0004)	Nitrogen Oxides (NOx)	3.5 LB/HR; 0.01 LB/MMBTU (12-MONTH AVERAGE)	BACT-PSD
				11.31	B2-13 - Boiler 2 (EQT0004)	Carbon Monoxide	13.3 LB/HR; 0.038 LB/MMBTU	BACT-PSD
				11.31	B2-13 - Boiler 2 (EQT0004)	Volatile Organic Compounds (VOC)	1.89 LB/HR; 0.0054 LB/MMBTU	BACT-PSD
				11.31	B2-13-SUSD - Boiler 2 Startup/Shutdown (EQT0006)	Particulate matter, total < 10 µ (TPM10)	0	BACT-PSD
				11.31	B2-13-SUSD - Boiler 2 Startup/Shutdown (EQT0006)	Particulate matter, total < 2.5 Âµ (TPM2.5)	0	BACT-PSD
				11.31	B2-13-SUSD - Boiler 2 Startup/Shutdown (EQT0006)	Nitrogen Oxides (NOx)	0	BACT-PSD
				11.31	B2-13-SUSD - Boiler 2 Startup/Shutdown (EQT0006)	Carbon Monoxide	0	BACT-PSD
				11.31	B2-13-SUSD - Boiler 2 Startup/Shutdown (EQT0006)	Volatile Organic Compounds (VOC)	0	BACT-PSD
				11.31	B2-13-SUSD - Boiler 2 Startup/Shutdown (EQT0006)	Carbon Dioxide Equivalent (CO2e)	4339 TPY	BACT-PSD
				11.31	B1-13-SUSD - Boiler 1 Startup/Shutdown (EQT0005)	Particulate matter, total < 10 µ (TPM10)	0	BACT-PSD
				11.31	B1-13-SUSD - Boiler 1 Startup/Shutdown (EQT0005)	Particulate matter, total < 2.5 Âµ (TPM2.5)	0	BACT-PSD
				11.31	B1-13-SUSD - Boiler 1 Startup/Shutdown (EQT0005)	Nitrogen Oxides (NOx)	0	BACT-PSD
				11.31	B1-13-SUSD - Boiler 1 Startup/Shutdown (EQT0005)	Carbon Monoxide	0	BACT-PSD
				11.31	B1-13-SUSD - Boiler 1 Startup/Shutdown (EQT0005)	Volatile Organic Compounds (VOC)	0	BACT-PSD
				11.31	B1-13-SUSD - Boiler 1 Startup/Shutdown (EQT0005)	Carbon Dioxide Equivalent (CO2e)	4339 TPY	BACT-PSD
ME-0040	A-156-77-3-A	06/30/2017	ROBBINS LUMBER, INC.	12.12	Biomass Boiler #3	Particulate matter, total < 10 µ (TPM10)	7.9 LB/H	BACT-PSD
				12.12	Biomass Boiler #3	Particulate matter, total < 2.5 Âµ (TPM2.5)	7.9 LB/H	BACT-PSD
				12.12	Biomass Boiler #3	Nitrogen Oxides (NOx)	25.1 LB/H	BACT-PSD
				12.12	Biomass Boiler #3	Carbon Monoxide	50.2 LB/H	BACT-PSD
LA-0305	PSD-LA-803(M1)	06/30/2016	LAKE CHARLES METHANOL FACILITY	11.31	Auxiliary Boilers and Superheaters	Carbon Dioxide Equivalent (CO2e)	0	BACT-PSD
				11.31	Auxiliary Boilers and Superheaters	Carbon Monoxide	0	BACT-PSD
				11.31	Auxiliary Boilers and Superheaters	Particulate matter, total < 10 µ (TPM10)	0	BACT-PSD
				11.31	Auxiliary Boilers and Superheaters	Particulate matter, total < 2.5 µ (TPM2.5)	0	BACT-PSD
				11.31	Auxiliary Boilers and Superheaters	Sulfur Dioxide (SO2)	0	BACT-PSD
				11.31	Auxiliary Boilers and Superheaters	Nitrogen Oxides (NOx)	0.015 LBS/MM BTU (30 ROLLING AVG., EXCEPT SCR SU OR MAINT.)	BACT-PSD
MI-0433	167-17 AND 168-17	06/29/2018	MEC NORTH, LLC AND MEC SOUTH LLC	13.31	EUAUXBOILER (North Plant): Auxiliary Boilder	Carbon Monoxide	0.08 LB/MMBTU (HOURLY)	BACT-PSD

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RBLC ID	PERMIT	DATE	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				13.31	EUAUXBOILER (North Plant): Auxiliary Boilder	Nitrogen Oxides (NOx)	0.04 LB/MMBTU (30-DAY ROLLING AVG TIME PERIOD)	BACT-PSD
				13.31	EUAUXBOILER (North Plant): Auxiliary Boilder	Particulate matter, filterable (FPM)	0.005 LB/MMBTU (HOURLY)	BACT-PSD
				13.31	EUAUXBOILER (North Plant): Auxiliary Boilder	Particulate matter, total < 10 µ (TPM10)	0.46 LB/H (HOURLY)	BACT-PSD
				13.31	EUAUXBOILER (North Plant): Auxiliary Boilder	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.46 LB/H (HOURLY)	BACT-PSD
				13.31	EUAUXBOILER (North Plant): Auxiliary Boilder	Volatile Organic Compounds (VOC)	0.004 LB/MMBTU (HOURLY)	BACT-PSD
				13.31	EUAUXBOILER (North Plant): Auxiliary Boilder	Sulfur Dioxide (SO2)	1.8 LB/MMSCF (MONTHLY); 0.6 GR S/100 SCF (FUEL SUPPLIER RECORDS)	BACT-PSD
				13.31	EUAUXBOILER (North Plant): Auxiliary Boilder	Carbon Dioxide Equivalent (CO2e)	31540 T/YR (12-MO ROLLING TIME PERIOD)	BACT-PSD
				13.31	EUAUXBOILER (South Plant): Auxiliary Boiler	Carbon Monoxide	0.08 LB/MMBTU (HOURLY)	BACT-PSD
				13.31	EUAUXBOILER (South Plant): Auxiliary Boiler	Nitrogen Oxides (NOx)	0.04 LB/MMBTU (30 DAY ROLLING AVG TIME PERIOD)	BACT-PSD
				13.31	EUAUXBOILER (South Plant): Auxiliary Boiler	Particulate matter, filterable (FPM)	0.005 LB/MMBTU (HOURLY)	BACT-PSD
				13.31	EUAUXBOILER (South Plant): Auxiliary Boiler	Particulate matter, total < 10 µ (TPM10)	0.46 LB/H (HOURLY)	BACT-PSD
				13.31	EUAUXBOILER (South Plant): Auxiliary Boiler	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.46 LB/H (HOURLY)	BACT-PSD
				13.31	EUAUXBOILER (South Plant): Auxiliary Boiler	Volatile Organic Compounds (VOC)	0.004 LB/MMBTU (HOURLY)	BACT-PSD
				13.31	EUAUXBOILER (South Plant): Auxiliary Boiler	Sulfur Dioxide (SO2)	1.8 LB/MMSCF (MONTHLY); 0.6 GR S/100 SCF (FUEL SUPPLIER RECORDS)	BACT-PSD
				13.31	EUAUXBOILER (South Plant): Auxiliary Boiler	Carbon Dioxide Equivalent (CO2e)	31540 T/YR (12-MO ROLLING TIME PERIOD)	BACT-PSD
MI-0400	317-07	06/29/2011	WOLVERINE POWER	11.11	2 Circulating Fluidized Bed Boilers (CFB1 & CFB2)--Startup & Shutdown ONLY	Particulate matter, total < 2.5 Âµ (TPM2.5)	54.5 LB/H (EACH; BACT & SIP; SS ONLY)	BACT-PSD
				13.22	Auxiliary Boiler	Particulate matter, filterable (FPM)	0.11 LB/H (TEST PROTOCOL; BACT/SIP/MACT)	BACT-PSD
				13.22	Auxiliary Boiler	Particulate matter, total < 10 µ (TPM10)	2.17 LB/H (TEST PROTOCOL; BACT/SIP)	BACT-PSD
				13.22	Auxiliary Boiler	Particulate matter, total < 2.5 Âµ (TPM2.5)	2.17 LB/H (TEST PROTOCOL; BACT/SIP)	BACT-PSD
				13.22	Auxiliary Boiler	Nitrogen Oxides (NOx)	1.67 LB/H (TEST PROTOCOL; BACT/SIP)	BACT-PSD
				13.22	Auxiliary Boiler	Carbon Monoxide	6.11 LB/H (TEST PROTOCOL; BACT/SIP)	BACT-PSD
				13.22	Auxiliary Boiler	Volatile Organic Compounds (VOC)	0.3 LB/H (TEST PROTOCOL; BACT/SIP/MACT)	BACT-PSD
				13.22	Auxiliary Boiler	Hydrochloric Acid	0.05 LB/H (TEST PROTOCOL)	MACT
				11.11	2 Circulating Fluidized Bed Boilers (CFB1 & CFB2)	Particulate matter, filterable (FPM)	0.01 LB/MMBTU (EACH; TEST PROTOCOL)	BACT-PSD
				11.11	2 Circulating Fluidized Bed Boilers (CFB1 & CFB2)	Particulate matter, total < 10 µ (TPM10)	0.026 LB/MMBTU (EACH; TEST PROTOCOL); 78.8 LB/H (EACH; TEST PROTOCOL)	BACT-PSD
				11.11	2 Circulating Fluidized Bed Boilers (CFB1 & CFB2)	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.024 LB/MMBTU (EACH; TEST PROTOCOL; BACT)	BACT-PSD
				11.11	2 Circulating Fluidized Bed Boilers (CFB1 & CFB2)	Nitrogen Oxides (NOx)	1 LB/MW-H (GROSS OUTPUT; EACH; 30 D ROLL. AVG; NSPS); 281.1 LB/H (EACH; 24H ROLL.AVG.; BACT)	BACT-PSD
				11.11	2 Circulating Fluidized Bed Boilers (CFB1 & CFB2)	Carbon Monoxide	0 ; 744 LB/H (EACH; 24H ROLL. AVG.; BACT&SIP)	BACT-PSD
				11.11	2 Circulating Fluidized Bed Boilers (CFB1 & CFB2)	Sulfur Dioxide (SO2)	303 LB/H (EACH; 24-H ROLL.AVG.; BACT & SIP); 1.4 LB/MW-H (GROSS OUTPUT; EACH; 30D ROLL.AVG.)	BACT-PSD
				11.11	2 Circulating Fluidized Bed Boilers (CFB1 & CFB2)	Volatile Organic Compounds (VOC)	17.8 LB/H (EACH; TEST PROTOCOL; BACT,MACT,SIP)	BACT-PSD
				11.11	2 Circulating Fluidized Bed Boilers (CFB1 & CFB2)	Sulfuric Acid (mist, vapors, etc)	0.003 LB/MMBTU (EACH; TEST PROTOCOL; BACT & SIP)	BACT-PSD
				11.11	2 Circulating Fluidized Bed Boilers (CFB1 & CFB2)	Hydrogen Fluoride	14 E-5 LB/MMBTU (EACH; TEST PROTOCOL; MACT & SIP)	MACT
				11.11	2 Circulating Fluidized Bed Boilers (CFB1 & CFB2)	Mercury	0.0077 LB/GW-H (EACH; 12-MO ROLLING; MACT & SIP)	MACT
				11.11	2 Circulating Fluidized Bed Boilers (CFB1 & CFB2)	Carbon Dioxide Equivalent (CO2e)	2.1 LB/KW-H (EACH; 12-MO ROLL.AVG.; BACT); 6024107 T/YR (EACH; 12-MO ROLL.AVG.; BACT)	BACT-PSD
				11.11	2 Circulating Fluidized Bed Boilers (CFB1 & CFB2)	Hydrochloric Acid	0.0011 LB/MMBTU (EACH; TEST PROTOCOL)	MACT
				11.11	2 Circulating Fluidized Bed Boilers (CFB1 & CFB2) - EXCLUDING Startup & Shutdown	Carbon Monoxide	0.15 LB/MMBTU (EACH; 30 D ROLLING AVG; BACT)	BACT-PSD
				11.11	2 Circulating Fluidized Bed Boilers (CFB1 & CFB2) - EXCLUDING Startup & Shutdown	Volatile Organic Compounds (VOC)	0.003 LB/MMBTU (EACH; LIMIT PER BACT, MACT, & SIP)	BACT-PSD

RBLC Search Results: Boilers

RBLC ID	PERMIT	DATE	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				11.11	2 Circulating Fluidized Bed Boilers (CFB1 & CFB2) - EXCLUDING Startup & Shutdown	Sulfur Dioxide (SO2)	0.06 LB/MMBTU (EACH; 30D ROLL.AVG.; BACT&SIP; EXC. SS); 0.05 LB/MMBTU (EACH;12-MO ROLL.AVG.; BACT&SIP; EXC.SS)	BACT-PSD
				11.11	2 Circulating Fluidized Bed Boilers (CFB1 & CFB2) - EXCLUDING Startup & Shutdown	Particulate matter, total < 2.5 Âµ (TPM2.5)	72.7 LB/H (EACH; TEST PROTOCOL; BACT&SIP)	BACT-PSD
				11.11	2 Circulating Fluidized Bed Boilers (CFB1 & CFB2) - EXCLUDING Startup & Shutdown	Nitrogen Oxides (NOx)	0.07 LB/MMBTU (EACH, 30 D ROLLING AVG; BACT)	BACT-PSD
IN-0166	T147-30464-00060	06/27/2012	INDIANA GASIFICATION, LLC	11.31	TWO (2) AUXILIARY BOILERS	Particulate matter, filterable (FPM)	0.0075 LB/MMBTU (3 HR)	BACT-PSD
				11.31	TWO (2) AUXILIARY BOILERS	Particulate matter, total < 10 µ (TPM10)	0.0075 LB/MMBTU (3 HR)	BACT-PSD
				11.31	TWO (2) AUXILIARY BOILERS	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.0075 LB/MMBTU (3 HR)	BACT-PSD
				11.31	TWO (2) AUXILIARY BOILERS	Carbon Monoxide	0.036 LB/MMBTU (3 HR AVE)	BACT-PSD
				11.31	TWO (2) AUXILIARY BOILERS	Sulfur Dioxide (SO2)	0.0006 MMBTU/H (3 HR)	BACT-PSD
				11.31	TWO (2) AUXILIARY BOILERS	Nitrogen Oxides (NOx)	0.0125 LB/MMBTU (24 HR)	BACT-PSD
				11.31	TWO (2) AUXILIARY BOILERS	Carbon Dioxide	81 % THERMAL EFFICIENCY; 88167 T/YR (MONTHLY)	BACT-PSD
MI-0391	264-09	06/25/2010	TES FILER CITY STATION	11.11	Coal fired boiler power plant	Carbon Monoxide	0.3 LB/MMBTU (SEE NOTES); 115.2 LB/H (SEE NOTES)	BACT-PSD
VA-0332	52610-1	06/24/2019	CHICKAHOMINY POWER LLC	12.31	Two (2) Auxiliary Boilers	Nitrogen Oxides (NOx)	0.011 LB/MMBTU (CORRECTED TO 3% O2); 1 LB/H	BACT-PSD
				12.31	Two (2) Auxiliary Boilers	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.6 LB/H; 2.6 T/YR (12 MO ROLLING AVG)	BACT-PSD
				12.31	Two (2) Auxiliary Boilers	Carbon Monoxide	0.037 LB/MMBTU; 3.2 LB/H	BACT-PSD
				12.31	Two (2) Auxiliary Boilers	Particulate matter, total < 10 µ (TPM10)	0.6 LB/HR; 2.6 T/YR (12 MO ROLLING AVG)	BACT-PSD
				12.31	Two (2) Auxiliary Boilers	Sulfur Dioxide (SO2)	0.0011 LB/MMBTU; 0.5 T/YR (12 MO ROLLING TOTAL)	BACT-PSD
				12.31	Two (2) Auxiliary Boilers	Volatile Organic Compounds (VOC)	0.005 LB/MMBTU; 1.9 T/YR (12 MO ROLLING AVG)	BACT-PSD
				12.31	Two (2) Auxiliary Boilers	Carbon Dioxide Equivalent (CO2e)	43827 T/YR (12 MO ROLLING TOTAL)	BACT-PSD
TX-0801	GHGPSDTX137	06/24/2016	PL PROPYLENE HOUSTON OLEFINS PLANT	11.39	Waste Heat Boiler	Carbon Dioxide Equivalent (CO2e)	500 F; 14016000 MMBTU/YR	BACT-PSD
LA-0231	PSD-LA-742	06/22/2009	LAKE CHARLES GASIFICATION FACILITY	11.31	AUXILIARY BOILER	Particulate matter, total < 10 µ (TPM10)	6.99 LB/H (MAXIMUM)	BACT-PSD
				11.31	AUXILIARY BOILER	Carbon Monoxide	33.78 LB/H (MAXIMUM)	BACT-PSD
				11.31	AUXILIARY BOILER	Nitrogen Oxides (NOx)	32.84 MMBTU/H (MAXIMUM); 0.035 LB/MMBTU	BACT-PSD
				11.31	AUXILIARY BOILER	Sulfur Dioxide (SO2)	0.28 LB/H (MAXIMUM)	BACT-PSD
FL-0361	0530380-010-AC / PSD-FL-090G	06/21/2017	BROOKSVILLE POWER PLANT	13.12	Woody Biomass-Fueled Grate Suspension Boiler	Carbon Monoxide	575 PPMVD@3% O2 (720-OPERATING-HR, ROLLING, INCL. SSM); 446.4 LB/HR (720-OPERATING-HR, ROLLING, INCL. SSM)	BACT-PSD
				13.12	Woody Biomass-Fueled Grate Suspension Boiler	Particulate matter, filterable (FPM)	0.037 LB/MMBTU (PERIODIC METHOD 5 STACK TEST)	BACT-PSD
				13.12	Woody Biomass-Fueled Grate Suspension Boiler	Carbon Dioxide	3300 LB CO2 / MWH (GROSS) (12-MONTH ROLLING)	BACT-PSD
CA-1192	SJ 08-01	06/21/2011	AVENAL ENERGY PROJECT	13.31	AUXILIARY BOILER	Nitrogen Oxides (NOx)	9 PPMVD (3-HR AVG, @3% O2)	BACT-PSD
				13.31	AUXILIARY BOILER	Carbon Monoxide	50 PPMVD (3-HR AVG, @3% O2)	BACT-PSD
				13.31	AUXILIARY BOILER	Particulate matter, total (TPM)	0.0034 GR/DSCF	BACT-PSD
				13.31	AUXILIARY BOILER	Particulate matter, total < 10 µ (TPM10)	0.0034 GR/DSCF	BACT-PSD
ND-0032	PTC14027	06/20/2014	SPIRITWOOD NITROGEN PLANT	11.31	Package boiler	Nitrogen Oxides (NOx)	0.018 LB/MMBTU (30 DAY ROLLING AVERAGE)	BACT-PSD
				11.31	Package boiler	Carbon Monoxide	0.06 LB/MMBTU (1-HOUR AVERAGE)	BACT-PSD
				11.31	Package boiler	Particulate matter, filterable (FPM)	0.0067 LB/MMBTU (1-HOUR AVERAGE)	BACT-PSD
				11.31	Package boiler	Carbon Dioxide Equivalent (CO2e)	143501 TONS (12-MONTH ROLLING TOTAL)	BACT-PSD
TX-0756	116072 AND PSDTX1388	06/19/2015	CCI CORPUS CHRISTI CONDENSATE SPLITTER FACILITY	15.21	Boilers, BL-1 and BL-2	Volatile Organic Compounds (VOC)	0.005 LB/100 SCF (EACH BOILER)	BACT-PSD
TX-0751	117026, PSDTX1390, N194	06/18/2015	EAGLE MOUNTAIN STEAM ELECTRIC STATION	13.31	Commercial/Institutional Size Boilers (<100 MMBtu) â€“ natural gas	Nitrogen Dioxide (NO2)	0.01 MMBTU/H (ROLLING 3-HR AVERAGE)	LAER
				13.31	Commercial/Institutional Size Boilers (<100 MMBtu) â€“ natural gas	Carbon Monoxide	50 PPM (ROLLING 3-HR AVERAGE)	BACT-PSD
				13.31	Commercial/Institutional Size Boilers (<100 MMBtu) â€“ natural gas	Volatile Organic Compounds (VOC)	4 PPM (1-HR AVG)	LAER
OH-0352	P0110840	06/18/2013	OREGON CLEAN ENERGY CENTER	13.31	Auxillary Boiler	Carbon Monoxide	5.45 LB/H; 5.45 T/YR (PER ROLLING 12-MONTHS)	BACT-PSD
				13.31	Auxillary Boiler	Nitrogen Oxides (NOx)	1.98 LB/H; 1.98 T/YR (PER ROLLING 12-MONTHS)	BACT-PSD
				13.31	Auxillary Boiler	Particulate matter, total < 10 µ (TPM10)	0.79 LB/H; 0.79 T/YR (PER ROLLING 12-MONTHS)	BACT-PSD
				13.31	Auxillary Boiler	Volatile Organic Compounds (VOC)	0.59 LB/H; 0.59 T/YR (PER ROLLING 12-MONTHS)	BACT-PSD
				13.31	Auxillary Boiler	Carbon Dioxide Equivalent (CO2e)	11671 T/YR (PER ROLLING 12-MONTHS)	BACT-PSD
				13.31	Auxillary Boiler	Sulfuric Acid (mist, vapors, etc)	0.011 LB/H; 0.011 T/YR (PER ROLLING 12-MONTHS)	BACT-PSD
				13.31	Auxillary Boiler	Visible Emissions (VE)	0	BACT-PSD
VA-0325	52525	06/17/2016	GREENSVILLE POWER STATION	12.31	AUXILIARY BOILER (1) AND FUEL GAS HEATERS (6)	Particulate matter, total < 2.5 µ (TPM2.5)	0.007 LB/MMBTU	N/A
				12.31	AUXILIARY BOILER (1) AND FUEL GAS HEATERS (6)	Carbon Dioxide Equivalent (CO2e)	117.1 LB/MMBTU	N/A

RBLC Search Results: Boilers

RBLC ID	PERMIT	DATE	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				12.31	AUXILIARY BOILER (1) AND FUEL GAS HEATERS (6)	Nitrogen Oxides (NOx)	0.011 LB/MMBTU	N/A
				12.31	AUXILIARY BOILER (1) AND FUEL GAS HEATERS (6)	Volatile Organic Compounds (VOC)	0.5 T/12 MO ROLL AVG (12 MONTH ROLLING TOTAL)	N/A
				12.31	AUXILIARY BOILER (1) AND FUEL GAS HEATERS (6)	Sulfur Dioxide (SO2)	0.0011 LB/MMBTU	N/A
				12.31	AUXILIARY BOILER (1) AND FUEL GAS HEATERS (6)	Sulfuric Acid (mist, vapors, etc)	0.0001 LB/MMBTU	N/A
				12.31	AUXILIARY BOILER (1) AND FUEL GAS HEATERS (6)	Carbon Monoxide	0.035 LBS/MMBTU; 6.6 LB/H	N/A
				12.31	AUXILIARY BOILER (1) AND FUEL GAS HEATERS (6)	Particulate matter, total < 10 µ (TPM10)	0.007 LB/MMBTU	N/A
LA-0329	PSD-LA-562(M7)	06/15/2018	RED RIVER MILL	12.12	Recovery Boiler No. 3	Particulate matter, total < 10 µ (TPM10)	0.015 GR/DSCF	BACT-PSD
				12.12	Recovery Boiler No. 3	Sulfur Dioxide (SO2)	20 PPM (30 DAY ROLLING AVERAGE)	BACT-PSD
				12.12	Recovery Boiler No. 3	Nitrogen Oxides (NOx)	80 PPM	BACT-PSD
				12.12	Recovery Boiler No. 3	Volatile Organic Compounds (VOC)	10 PPM	BACT-PSD
				12.12	Recovery Boiler No. 3	Hydrogen Sulfide	3 PPM	BACT-PSD
PA-0307	67-05083D/F	06/15/2015	YORK ENERGY CENTER BLOCK 2 ELECTRICITY GENERAT	13.31	Auxilary Boiler	Nitrogen Oxides (NOx)	0.0086 LB/MMBTU; 2.3 TPY (ANY CONSECUTIVE 12-MONTH PERIOD)	LAER
				13.31	Auxilary Boiler	Carbon Monoxide	0.06 LB/MMBTU; 15.6 TPY (ANT CONSECUTIVE 12-MONTH PERIOD)	BACT-PSD
				13.31	Auxilary Boiler	Volatile Organic Compounds (VOC)	0.004 LB/MMBTU; 1.1 TPY (ANY CONSECUTIVE 12-MONTH PERIOD)	LAER
				13.31	Auxilary Boiler	Sulfuric Acid (mist, vapors, etc)	0 LB/MMBTU; 0.0122 TPY (ANY CONSECUTIVE 12-MONTH PERIOD)	BACT-PSD
				13.31	Auxilary Boiler	Particulate matter, total (TPM)	0.005 LB/MMBTU; 1.3 TPY (ANY CONSECUTIVE 12-MONTH PERIOD)	BACT-PSD
				13.31	Auxilary Boiler	Particulate matter, total < 10 µ (TPM10)	0.005 LB/MMBTU; 1.3 TPY (ANY CONSECUTIVE 12-MONTH PERIOD)	BACT-PSD
				13.31	Auxilary Boiler	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.005 LB/MMBTU; 1.3 TPY (ANY CONSECUTIVE 12-MONTH PERIOD)	BACT-PSD
AK-0066	AQ0181CPT06, REVISION 2	06/15/2009	ENDICOTT PRODUCTION FACILITY, LIBERTY DEVELOPME	13.9	EU IDS 61 - 63, DUAL-FIRED BOILERS	Nitrogen Oxides (NOx)	0.035 LB/MMBTU (FUEL GAS BACT EMISSION LIMIT); 25 PPMV AT 3% O2 (DISTILLATE BACT EMISSION LIMIT)	BACT-PSD
				13.9	EU IDS 61 - 63, DUAL-FIRED BOILERS	Carbon Monoxide	0.093 LB/MMBTU (FUEL GAS BACT EMISSION LIMIT); 90 PPMV @ 3% O2 (DISTILLATE BACT EMISSION LIMIT)	BACT-PSD
				13.9	EU IDS 61 - 63, DUAL-FIRED BOILERS	Sulfur Dioxide (SO2)	0.19 LB/MMBTU (FUEL GAS BACT LIMIT, BASED ON HEAT INPUT); 15 PPMW (DISTILLATE BACT EMISSION LIMIT)	BACT-PSD
*WV-0031	R14-0033	06/14/2018	MOCKINGBIRD HILL COMPRESSOR STATION	13.31	WH-1 - Boiler	Particulate matter, total < 2.5 Âµ (TPM2.5)	0	BACT-PSD
				13.31	WH-1 - Boiler	Particulate matter, total < 10 µ (TPM10)	0	BACT-PSD
				13.31	WH-1 - Boiler	Particulate matter, total (TPM)	0	BACT-PSD
				13.31	WH-1 - Boiler	Carbon Dioxide Equivalent (CO2e)	0	BACT-PSD
LA-0240	PSD-LA-747/1280-00141-V0	06/14/2010	FLOPAM INC.	13.31	Boilers	Particulate matter, total < 10 µ (TPM10)	0.1 LB/H (HOURLY MAXIMUM); 0.005 LB/MMBTU	BACT-PSD
				13.31	Boilers	Particulate matter, total (TPM)	0.13 LB/H (HOURLY MAXIMUM); 0.005 LB/MMBTU	BACT-PSD
				13.31	Boilers	Carbon Monoxide	0.93 LB/H (HOURLY MAXIMUM); 0.037 LB/MMBTU	BACT-PSD
				13.31	Boilers	Nitrogen Oxides (NOx)	0.38 LB/H (HOURLY MAXIMUM); 9 PPMV ((2) OR (1))	LAER
				13.31	Boilers	Volatile Organic Compounds (VOC)	0.003 LB/MMBTU (NATURAL GAS FIRED); 0.008 LB/MMBTU (ALCOHOL FIRED)	LAER
*WI-0270	09-MHR-206	06/13/2016	DAIRYLAND POWER COOP ALMA STATION	13.22	B27 - Auxilary Steam Boiler	Particulate matter, total (TPM)	0.015 LB/MMBTU	BACT-PSD
				13.22	B27 - Auxilary Steam Boiler	Visible Emissions (VE)	10 %	BACT-PSD
				13.22	B27 - Auxilary Steam Boiler	Sulfur Dioxide (SO2)	0 (SEE BELOW)	BACT-PSD
				13.22	B27 - Auxilary Steam Boiler	Nitrogen Oxides (NOx)	0.21 LB/MMBTU	BACT-PSD
				13.22	B27 - Auxilary Steam Boiler	Carbon Dioxide Equivalent (CO2e)	0 (SEE BELOW)	BACT-PSD
				13.22	B27 - Auxilary Steam Boiler	Particulate matter, total < 10 µ (TPM10)	0.011 LB/MMBTU	BACT-PSD
				13.22	B27 - Auxilary Steam Boiler	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.01 LB/MMBTU	BACT-PSD
TX-0858	146425, PSDTX1518, GHGPSDTX17	06/12/2019	GULF COAST GROWTH VENTURES PROJECT	64.999	Boilers	Carbon Monoxide	100 PPMVD (3% O2 1-HR)	BACT-PSD
				64.999	Boilers	Nitrogen Oxides (NOx)	0.015 LB/MMBTU (1-HR)	BACT-PSD
				64.999	Boilers	Volatile Organic Compounds (VOC)	0	BACT-PSD
				64.999	Boilers	Carbon Dioxide Equivalent (CO2e)	0	BACT-PSD
TX-0744	PSD-TX-1342-GHG	06/12/2014	C3 PETROCHEMICALS, PDH CHOCOLATE BAYOU PLANT	11.31	Boiler equipped with SCR and ultra-low NOx burners	Carbon Dioxide Equivalent (CO2e)	82 % THERMAL EFFICIENCY (12-MONTH ROLLING TOTAL INCLUDES MSS); 330055 TPY CO2E (12-MONTH ROLLING TOTAL INCLUDES MSS)	BACT-PSD
IN-0317	T147-39554-00065	06/11/2019	RIVERVIEW ENERGY CORPORATION	13.39	Boiler EU-6000	Carbon Dioxide Equivalent (CO2e)	35756 TONS (12 CONSECUTIVE MONTHS)	BACT-PSD
				13.39	Boiler EU-6000	Particulate matter, filterable (FPM)	0.0019 LB/MMBTU; 0.13 LB/HR	BACT-PSD
				13.39	Boiler EU-6000	Particulate matter, total < 10 µ (TPM10)	0.0075 LB/MMBTU; 0.53 LB/HR	BACT-PSD
				13.39	Boiler EU-6000	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.0075 LB/MMBTU; 0.53 LB/HR	BACT-PSD

RBLC Search Results: Boilers

RBLC ID	PERMIT	DATE	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				13.39	Boiler EU-6000	Sulfur Dioxide (SO2)	0.005 GR/SCF (12 CONSECUTIVE MONTH FUEL SULFUR CONTENT); 0.42 TONS (12 CONSECUTIVE MONTHS)	BACT-PSD
				13.39	Boiler EU-6000	Nitrogen Oxides (NOx)	0.03 LB/MMBTU; 2.06 LB/HR	BACT-PSD
				13.39	Boiler EU-6000	Volatile Organic Compounds (VOC)	0.0054 LB/MMBTU; 0.37 LB/HR	BACT-PSD
				13.39	Boiler EU-6000	Carbon Monoxide	0.0365 LB/MMBTU; 2.5 LB/HR	BACT-PSD
AL-0271	502-0001-X049	06/11/2014	GEORGIA PACIFIC BRETON LLC	11.31	No.4 Power Boiler	Particulate matter, fugitive	0.0019 LB/MMBTU; 0.8 LB/H	BACT-PSD
				11.31	No.4 Power Boiler	Nitrogen Oxides (NOx)	0.02 LB/MMBTU; 8.5 LB/H	BACT-PSD
				11.31	No.4 Power Boiler	Volatile Organic Compounds (VOC)	0.0053 LB/MMBTU; 2.3 LB/H	BACT-PSD
				11.31	No.4 Power Boiler	Carbon Dioxide Equivalent (CO2e)	117.1 LB/MMBTU; 219214 T/YR	BACT-PSD
				11.31	Cooling Tower - No. 4 Power Boiler	Particulate matter, fugitive	0.23 LB/H; 1 TPY	BACT-PSD
WI-0258	13-JJW-040	06/10/2013	GREEN BAY PACKAGING, INC. - MILL DIVISION	11.31	B08 - Up to 253 MMBtu/hour Natural Gas Fired Boiler	Carbon Dioxide Equivalent (CO2e)	0	BACT-PSD
MD-0044	PSC CASE NO. 9318	06/09/2014	COVE POINT LNG TERMINAL	11.39	2 AUXILLARY BOILERS	Particulate matter, filterable (FPM)	0.005 LB/MMBTU (3 HOUR BLOCK AVERAGE)	BACT-PSD
				11.39	2 AUXILLARY BOILERS	Particulate matter, total < 10 µ (TPM10)	0.014 LB/MMBTU (3 STACK TEST RUN AVERAGE, EXCEPT SU/SD); 296.8 LB/EVENT (FOR ALL STARTUPS)	BACT-PSD
				11.39	2 AUXILLARY BOILERS	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.014 LB/MMBTU (3 STACK TEST RUN AVERAGE, EXCEPT SU/S); 296.8 LB/EVENT (FOR ALL STARTUPS)	BACT-PSD
				11.39	2 AUXILLARY BOILERS	Nitrogen Oxides (NOx)	0.0099 LB/MMBTU (3-HOUR BLOCK AVERAGE, EXCLUDING SU/SD); 2946.2 LB/EVENT (FOR ALL STARTUPS)	LAER
				11.39	2 AUXILLARY BOILERS	Carbon Monoxide	0.0088 LB/MMBTU (3-HOUR BLOCK AVERAGE, EXCLUDING SU/SD); 2618.5 LB/EVENT (FOR ALL STARTUP EVENTS)	BACT-PSD
				11.39	2 AUXILLARY BOILERS	Volatile Organic Compounds (VOC)	0.001 LB/MMBTU (3-HOUR BLOCK AVERAGE, EXCLUDING SU/SD); 130.6 LB/EVENT (FOR ALL STARTUPS)	LAER
				11.39	2 AUXILLARY BOILERS	Carbon Dioxide Equivalent (CO2e)	117 LB/MMBTU (AS CO2E) (3-HOUR BLOCK AVERAGE)	BACT-PSD
CA-1185	ATC 13623	06/07/2011	SANTA BARBARA AIRPORT	13.31	Boiler, Forced Dratf	Nitrogen Oxides (NOx)	12 PPMVD@3% O2 (40 MINUTES)	OTHER CASE-BY-CASE
				13.31	Boiler, Forced Dratf	Carbon Monoxide	100 PPMVD@3% O2 (40 MINUTES)	OTHER CASE-BY-CASE
TX-0732	56287 & PSDTX1404	06/05/2015	WASTE HEAT BOILER NO. 36	13.39	Boiler	Nitrogen Oxides (NOx)	0.11 LB/MMBTU (1-HR AVG)	BACT-PSD
IN-0173	129-33576-00059	06/04/2014	MIDWEST FERTILIZER CORPORATION	16.21	THREE (3) AUXILARY BOILERS	Particulate matter, filterable (FPM)	1.9 LB/MMCF (3-HR AVERAGE)	BACT-PSD
				16.21	THREE (3) AUXILARY BOILERS	Particulate matter, total < 10 µ (TPM10)	7.6 LB/MMCF (3-HR AVERAGE)	BACT-PSD
				16.21	THREE (3) AUXILARY BOILERS	Nitrogen Oxides (NOx)	20.4 LB/MMCF (3-HR AVERAGE)	BACT-PSD
				16.21	THREE (3) AUXILARY BOILERS	Carbon Monoxide	37.22 LB/MMCF (3-HR AVERAGE)	BACT-PSD
				16.21	THREE (3) AUXILARY BOILERS	Volatile Organic Compounds (VOC)	5.5 LB/MMCF (3-HR AVERAGE)	BACT-PSD
				16.21	THREE (3) AUXILARY BOILERS	Carbon Dioxide	59.61 T/MMCF (3-HR AVERAGE); 80 % (THERMAL EFFICIENCY (HHV))	BACT-PSD
IN-0180	129-33576-00059	06/04/2014	MIDWEST FERTILIZER CORPORATION	16.21	THREE (3) AUXILARY BOILERS	Particulate matter, filterable (FPM)	1.9 LB/MMCF (3-HR AVERAGE)	BACT-PSD
				16.21	THREE (3) AUXILARY BOILERS	Particulate matter, total < 10 µ (TPM10)	7.6 LB/MMCF (3-HR AVERAGE)	BACT-PSD
				16.21	THREE (3) AUXILARY BOILERS	Nitrogen Oxides (NOx)	20.4 LB/MMCF (3-HR AVERAGE)	BACT-PSD
				16.21	THREE (3) AUXILARY BOILERS	Carbon Monoxide	37.22 LB/MMCF (3-HR AVERAGE)	BACT-PSD
				16.21	THREE (3) AUXILARY BOILERS	Volatile Organic Compounds (VOC)	5.5 LB/MMCF (3-HR AVERAGE)	BACT-PSD
				16.21	THREE (3) AUXILARY BOILERS	Carbon Dioxide	59.61 TON/MMCF (3-HR AVERAGE); 80 % (THERMAL EFFICIENCY (HHV))	BACT-PSD
MI-0420	185-15	06/03/2016	DTE GAS COMPANY--MILFORD COMPRESSOR STATION	13.31	FGAUXBOILERS	Nitrogen Oxides (NOx)	14 PPMVOL (AT 15%O2; TEST PROTOCOL)	BACT-PSD
				13.31	FGAUXBOILERS	Carbon Monoxide	0.08 LB/MMBTU (TEST PROTOCOL)	BACT-PSD
				13.31	FGAUXBOILERS	Particulate matter, total < 10 µ (TPM10)	0.0075 LB/MMBTU (TEST PROTOCOL)	BACT-PSD
				13.31	FGAUXBOILERS	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.0075 LB/MMBTU (TEST PROTOCOL)	BACT-PSD
				13.31	FGAUXBOILERS	Carbon Dioxide Equivalent (CO2e)	6155 T/YR (12-MO ROLLING TIME PERIOD)	BACT-PSD
OK-0162	2011-441-C(M-2)PSD	05/29/2014	ENID NITROGEN PLANT	11.31	Boiler	Carbon Dioxide Equivalent (CO2e)	117 LB/MMBTU	BACT-PSD
				11.31	Boiler	Carbon Monoxide	0.037 LB/MMBTU	BACT-PSD
				11.31	Boiler	Particulate matter, total < 10 µ (TPM10)	0.0076 LB/MMBTU	BACT-PSD
				11.31	Boiler	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.0076 LB/MMBTU	BACT-PSD
AL-0312	X006, X008, X009	05/26/2016	BELK CHIP-N-SAW FACILITY	13.31	60 MMBTU/HR NATURAL GAS-FIRED BOILER (ES-008)	Volatile Organic Compounds (VOC)	0.0054 LB/MMBTU INPUT	BACT-PSD
LA-0250	PSD-LA-753	05/25/2011	POLLOCK PLYWOOD MILL	13.12	BOILER NO. 3 (24-10, EQT 023)	Carbon Monoxide	155.81 LB/H (HOURLY MAXIMUM); 464.06 T/YR (ANNUAL MAXIMUM)	BACT-PSD
*LA-0273	PSD-LA-779	05/23/2014	LAKE CHARLES CHEMICAL COMPLEX	11.31	Utility Steam Boiler No. 1, 2, and 3 (EQT0967, EQT0968, and EQT0969)	Particulate matter, total < 10 µ (TPM10)	0.0075 LB/MM BTU (3-ONE HOUR AVERAGE); 5.02 LB/HR (HOURLY MAXIMUM)	BACT-PSD
LA-0288	PSD-LA-778	05/23/2014	LAKE CHARLES CHEMICAL COMPLEX	11.39	HP SH Steam Boilers (EQT 631, 632, & 633)	Particulate matter, total < 10 µ (TPM10)	3.07 LB/HR (HOURLY MAXIMUM); 8.44 TPY (ANNUAL MAXIMUM)	BACT-PSD
				11.39	HP SH Steam Boilers (EQT 631, 632, & 633)	Particulate matter, total < 2.5 Âµ (TPM2.5)	3.07 LB/HR (HOURLY MAXIMUM); 8.44 TPY (ANNUAL MAXIMUM)	BACT-PSD
				11.39	HP SH Steam Boilers (EQT 631, 632, & 633)	Sulfur Dioxide (SO2)	24.22 LB/HR (HOURLY MAXIMUM); 1.67 TPY (ANNUAL MAXIMUM)	BACT-PSD
				11.39	HP SH Steam Boilers (EQT 631, 632, & 633)	Nitrogen Oxides (NOx)	20.59 LB/HR (HOURLY MAXIMUM); 11.33 TPY (ANNUAL MAXIMUM)	BACT-PSD
				11.39	HP SH Steam Boilers (EQT 631, 632, & 633)	Carbon Monoxide	14.41 LB/HR (HOURLY MAXIMUM); 39.67 TPY (ANNUAL MAXIMUM)	BACT-PSD

RBLC Search Results: Boilers

RBLC ID	PERMIT	DATE	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				11.39	HP SH Steam Boilers (EQT 631, 632, & 633)	Volatile Organic Compounds (VOC)	2.22 LB/HR (HOURLY MAXIMUM); 6.11 TPY (ANNUAL MAXIMUM)	BACT-PSD
				11.39	HP SH Steam Boilers (EQT 631, 632, & 633)	Carbon Dioxide Equivalent (CO2e)	266639 TPY (ANNUAL MAXIMUM)	BACT-PSD
LA-0301	PSD-LA-779	05/23/2014	LAKE CHARLES CHEMICAL COMPLEX ETHYLENE 2 UNIT	11.39	Utility Steam Boiler Nos. 1-3 (EQTs 967, 968, & 969)	Particulate matter, total < 10 µ (TPM10)	5.02 LB/HR (HOURLY MAXIMUM); 52.87 TPY* (ANNUAL MAXIMUM)	BACT-PSD
				11.39	Utility Steam Boiler Nos. 1-3 (EQTs 967, 968, & 969)	Particulate matter, total < 2.5 Âµ (TPM2.5)	5.02 LB/HR (HOURLY MAXIMUM); 52.87 TPY* (ANNUAL MAXIMUM)	BACT-PSD
				11.39	Utility Steam Boiler Nos. 1-3 (EQTs 967, 968, & 969)	Carbon Monoxide	23.59 LB/HR (HOURLY MAXIMUM); 248.35 TPY* (ANNUAL MAXIMUM)	BACT-PSD
				11.39	Utility Steam Boiler Nos. 1-3 (EQTs 967, 968, & 969)	Sulfur Dioxide (SO2)	1.98 LB/HR (HOURLY MAXIMUM); 10.43 TPY* (ANNUAL MAXIMUM)	BACT-PSD
				11.39	Utility Steam Boiler Nos. 1-3 (EQTs 967, 968, & 969)	Nitrogen Oxides (NOx)	33.7 LB/HR (HOURLY MAXIMUM); 70.96 TPY* (ANNUAL MAXIMUM)	BACT-PSD
				11.39	Utility Steam Boiler Nos. 1-3 (EQTs 967, 968, & 969)	Volatile Organic Compounds (VOC)	3.63 LB/HR (HOURLY MAXIMUM); 38.26 TPY* (ANNUAL MAXIMUM)	BACT-PSD
				11.39	Utility Steam Boiler Nos. 1-3 (EQTs 967, 968, & 969)	Carbon Dioxide Equivalent (CO2e)	836405 TPY* (ANNUAL MAXIMUM)	BACT-PSD
LA-0302	PSD-LA-779	05/23/2014	LAKE CHARLES CHEMICAL COMPLEX EO/MEG UNIT	13.39	Process Heat Boilers B-910A & B-910B (EQTs 1008 & 1009)	Particulate matter, total < 10 µ (TPM10)	0.58 LB/HR (HOURLY MAXIMUM); 1.87 TPY* (ANNUAL MAXIMUM)	BACT-PSD
				13.39	Process Heat Boilers B-910A & B-910B (EQTs 1008 & 1009)	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.58 LB/HR (HOURLY MAXIMUM); 1.87 TPY* (ANNUAL MAXIMUM)	BACT-PSD
				13.39	Process Heat Boilers B-910A & B-910B (EQTs 1008 & 1009)	Sulfur Dioxide (SO2)	4.6 LB/HR (HOURLY MAXIMUM); 0.37 TPY* (ANNUAL MAXIMUM)	BACT-PSD
				13.39	Process Heat Boilers B-910A & B-910B (EQTs 1008 & 1009)	Nitrogen Oxides (NOx)	2.97 LB/HR (HOURLY MAXIMUM); 9.55 TPY* (ANNUAL MAXIMUM)	BACT-PSD
				13.39	Process Heat Boilers B-910A & B-910B (EQTs 1008 & 1009)	Carbon Dioxide Equivalent (CO2e)	69173 TPY* (ANNUAL MAXIMUM)	BACT-PSD
				13.39	Process Heat Boilers B-910A & B-910B (EQTs 1008 & 1009)	Carbon Monoxide	2.74 LB/HR (HOURLY MAXIMUM); 8.8 TPY* (ANNUAL MAXIMUM)	BACT-PSD
				13.39	Process Heat Boilers B-910A & B-910B (EQTs 1008 & 1009)	Volatile Organic Compounds (VOC)	0.42 LB/HR (HOURLY MAXIMUM); 1.36 TPY* (ANNUAL MAXIMUM)	BACT-PSD
*LA-0315	PSD-LA-781	05/23/2014	G2G PLANT	11.31	Utility Boiler 1	Carbon Monoxide	22.97 LB/H (HOURLY MAXIMUM); 100.61 T/YR (ANNUAL MAXIMUM)	BACT-PSD
				11.31	Utility Boiler 1	Carbon Dioxide Equivalent (CO2e)	0	BACT-PSD
				11.31	Utility Boiler 1	Volatile Organic Compounds (VOC)	3.54 LB/H (HOURLY MAXIMUM); 15.5 T/YR (ANNUAL MAXIMUM)	BACT-PSD
				11.31	Utility Boiler 1	Nitrogen Oxides (NOx)	3.94 LB/H (HOURLY MAXIMUM); 17.25 T/YR (ANNUAL MAXIMUM)	BACT-PSD
				11.31	Utility Boiler 1	Particulate matter, total < 10 µ (TPM10)	4.89 LB/H (HOURLY MAXIMUM); 21.42 T/YR (ANNUAL MAXIMUM)	BACT-PSD
				11.31	Utility Boiler 1	Particulate matter, total < 2.5 Âµ (TPM2.5)	4.89 LB/H (HOURLY MAXIMUM); 21.42 T/YR (ANNUAL MAXIMUM)	BACT-PSD
				11.31	Utility Boiler 2	Nitrogen Oxides (NOx)	3.94 LB/H (HOURLY MAXIMUM); 17.25 T/YR (ANNUAL MAXIMUM)	BACT-PSD
				11.31	Utility Boiler 2	Particulate matter, total < 10 µ (TPM10)	4.89 LB/H (HOURLY MAXIMUM); 21.42 T/YR (ANNUAL MAXIMUM)	BACT-PSD
				11.31	Utility Boiler 2	Particulate matter, total < 2.5 Âµ (TPM2.5)	4.89 LB/H (HOURLY MAXIMUM); 21.42 T/YR (ANNUAL MAXIMUM)	BACT-PSD
				11.31	Utility Boiler 2	Volatile Organic Compounds (VOC)	3.54 LB/H (HOURLY MAXIMUM); 15.5 T/YR (ANNUAL MAXIMUM)	BACT-PSD
				11.31	Utility Boiler 2	Carbon Monoxide	22.97 LB/H (HOURLY MAXIMUM); 100.62 T/YR (ANNUAL MAXIMUM)	BACT-PSD
				11.31	Utility Boiler 2	Carbon Dioxide Equivalent (CO2e)	0	BACT-PSD
				11.31	Utility Boiler 3	Nitrogen Oxides (NOx)	3.94 LB/H (HOURLY MAXIMUM); 17.25 T/YR (ANNUAL MAXIMUM)	BACT-PSD
				11.31	Utility Boiler 3	Particulate matter, total < 10 µ (TPM10)	4.89 LB/H (HOURLY MAXIMUM); 21.42 T/YR (ANNUAL MAXIMUM)	BACT-PSD
				11.31	Utility Boiler 3	Particulate matter, total < 2.5 Âµ (TPM2.5)	4.89 LB/H (HOURLY MAXIMUM); 21.42 T/YR (ANNUAL MAXIMUM)	BACT-PSD
				11.31	Utility Boiler 3	Volatile Organic Compounds (VOC)	3.54 LB/H (HOURLY MAXIMUM); 15.5 T/YR (ANNUAL MAXIMUM)	BACT-PSD
				11.31	Utility Boiler 3	Carbon Monoxide	22.97 LB/H (HOURLY MAXIMUM); 100.62 T/YR (ANNUAL MAXIMUM)	BACT-PSD
				11.31	Utility Boiler 3	Carbon Dioxide Equivalent (CO2e)	0	BACT-PSD
VA-0316	30859-021	05/23/2012	ALTAVISTA POWER STATION	11.12	BIOMASS-FIRED, SPREADER STOKER BOILERS, (2)	Carbon Monoxide	0.3 LB/MMBTU (30 DAY ROLLING AVERAGE)	BACT-PSD
VA-0317	51019-017	05/23/2012	HOPEWELL POWER STATION	11.12	BIOMASS-FIRED, SPREADER STOKER BOILERS, (2)	Carbon Monoxide	0.3 LB/MMBTU (30 DAY ROLLING AVERAGE)	BACT-PSD
VA-0318	61093-014	05/23/2012	SOUTHAMPTON POWER STATION	11.12	BIOMASS-FIRED, SPREADER STOKER BOILERS, (2)	Carbon Monoxide	0.3 LB/MMBTU (30 DAY ROLLING AVERAGE)	BACT-PSD

RBLC Search Results: Boilers

RBLC ID	PERMIT	DATE	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
MI-0440	139-18	05/22/2019	MICHIGAN STATE UNIVERSITY	11.31	EUSTMBOILER	Nitrogen Oxides (NOx)	0.04 LB/MMBTU (30 DAY ROLL AVG WHEN FIRING NAT. GAS); 0.07 LB/MMBTU (30 DAY ROLL AVG WHEN FIRING NO2 FUEL OIL)	BACT-PSD
				11.31	EUSTMBOILER	Carbon Monoxide	0.05 LB/MMBTU (HOURLY, WHEN FIRING NATURAL GAS); 0.08 LB/MMBTU (HOURLY, WHEN FIRING NO.2 FUEL OIL)	BACT-PSD
				11.31	EUSTMBOILER	Volatile Organic Compounds (VOC)	1.6 LB/H (HOURLY)	BACT-PSD
				11.31	EUSTMBOILER	Particulate matter, filterable (FPM)	0.8 LB/H (HOURLY WHEN FIRING NATURAL GAS); 4.4 LB/H (HOURLY WHEN FIRING NO. 2 FUEL OIL)	BACT-PSD
				11.31	EUSTMBOILER	Particulate matter, total < 10 µ (TPM10)	2.3 LB/H (HOURLY WHEN FIRING NATURAL GAS); 7.2 LB/H (HOURLY WHEN FIRING NO. 2 FUEL OIL)	BACT-PSD
				11.31	EUSTMBOILER	Particulate matter, total < 2.5 Âµ (TPM2.5)	2.3 LB/H (HOURLY WHEN FIRING NATURAL GAS); 7.2 LB/H (HOURLY WHEN FIRING NO. 2 FUEL OIL)	BACT-PSD
				11.31	EUSTMBOILER	Carbon Dioxide Equivalent (CO2e)	214988 T/YR (12 MO.ROLLING TIME PERIOD)	BACT-PSD
MN-0088	12900014-008	05/22/2013	SOUTHERN MINNESOTA BEET SUGAR COOPERATIVE	11.31	NATURAL GAS-FIRED BOILER	Carbon Dioxide Equivalent (CO2e)	117800 T/YR (12-MONTH ROLLING)	BACT-PSD
SC-0192	1340-0029-CI	05/21/2019	CANFOR SOUTHERN PINE - CONWAY MILL	13.31	Boiler No. 2	Carbon Monoxide	0.0375 LB/MMBTU	BACT-PSD
				13.31	Boiler No. 2	Volatile Organic Compounds (VOC)	0.0054 LB/MMBTU	BACT-PSD
AL-0255	X043	05/18/2009	CARGILL, INC	70.3	BOILER, HURST, WOOD-FIRED	Nitrogen Oxides (NOx)	0.22 LB/MMBTU	BACT-PSD
AR-0145	0449-AOP-R11	05/16/2017	INDEPENDENCE PLANT	11.11	UNIT 1 COAL FIRED BOILER	Carbon Monoxide	0.15 LB/MMBTU (3-HR); 1305 LB/HR (3-HR)	BACT-PSD
				11.11	UNIT 2 COAL FIRED BOILER	Carbon Monoxide	0.15 LB/MMBTU (3-HR); 1305 LB/HR (3-HR)	BACT-PSD
TX-0656	PSDTX1340 AND 107764	05/16/2014	GAS TO GASOLINE PLANT	11.31	Boiler	Nitrogen Oxides (NOx)	0.01 LB/MMBTU	BACT-PSD
				11.31	Boiler	Carbon Monoxide	96.4 T/YR	BACT-PSD
				11.31	Boiler	Particulate matter, total < 10 µ (TPM10)	22.77 T/YR	BACT-PSD
				11.31	Boiler	Particulate matter, total < 2.5 Âµ (TPM2.5)	17.08 T/YR	BACT-PSD
				11.31	Boiler	Volatile Organic Compounds (VOC)	14 T/YR	BACT-PSD
TX-0657	PSDTX1340 AND 107764	05/16/2014	BEAUMONT GAS TO GASOLINE PLANT	50.002	Boiler	Nitrogen Oxides (NOx)	0.01 LB/MMBTU; 31.01 TONS (ANNUAL)	BACT-PSD
				50.002	Boiler	Carbon Monoxide	50 PPM (ANNUAL); 96.44 TONS (ANNUAL)	BACT-PSD
				50.002	Boiler	Particulate matter, fugitive	22.77 TONS (ANNUAL)	BACT-PSD
				50.002	Boiler	Particulate matter, total < 10 µ (TPM10)	22.77 TONS (ANNUAL)	BACT-PSD
				50.002	Boiler	Particulate matter, total < 2.5 µ (TPM2.5)	17.08 TONS (ANNUAL)	BACT-PSD
				50.002	Boiler	Volatile Organic Compounds (VOC)	14 TONS (ANNUAL)	BACT-PSD
CA-1193	SJ 85-07	05/15/2012	RIO BRAVO JASMIN COGENERATION	11.19	CIRCULATING FLUIDIZED BED COMBUSTION BOILER (NORMAL OPERATION)	Sulfur Dioxide (SO2)	20 PPM (@3% O2, 3-HR AVG); 14 LB/H (3-HR AVG)	BACT-PSD
				11.19	CIRCULATING FLUIDIZED BED COMBUSTION BOILER (NORMAL OPERATION)	Nitrogen Oxides (NOx)	78 PPM (@3% O2, 3-HR AVG); 38.9 LB/H (3-HR AVG)	BACT-PSD
				11.19	CIRCULATING FLUIDIZED BED COMBUSTION BOILER (NORMAL OPERATION)	Particulate matter, total (TPM)	0.14 LB/MW-H (DAILY AVG); 0.015 LB/MMBTU (DAILY AVG)	BACT-PSD
				11.19	CIRCULATING FLUIDIZED BED COMBUSTION BOILER (NORMAL OPERATION)	Particulate matter, total < 10 µ (TPM10)	4.31 LB/H (DAILY AVG); 0.0111 LB/MMBTU (DAILY AVG)	BACT-PSD
				11.19	CIRCULATING FLUIDIZED BED COMBUSTION BOILER (NORMAL OPERATION)	Carbon Monoxide	105.1 LB/H (3-HR AVG)	BACT-PSD
				11.19	CIRCULATING FLUIDIZED BED COMBUSTION BOILER (STARTUP & SHUTDOWN PERIODS)	Nitrogen Oxides (NOx)	0.2 LB/MMBTU (24-HR AVG, STARTUP & SHUTDOWN PERIODS)	BACT-PSD
				11.19	CIRCULATING FLUIDIZED BED COMBUSTION BOILER (STARTUP & SHUTDOWN PERIODS)	Sulfur Dioxide (SO2)	0.11 LB/MMBTU (24-HR AVG, STARTUP & SHUTDOWN PERIODS)	BACT-PSD
CA-1194	SJ 85-06	05/15/2012	RIO BRAVO POSO COGENERATION	11.19	CIRCULATING FLUIDIZED BED COMBUSTION BOILER (STARTUP & SHUTDOWN PERIODS)	Nitrogen Oxides (NOx)	0.2 LB/MMBTU (24-HR AVG, STARTUP & SHUTDOWN PERIODS)	BACT-PSD
				11.19	CIRCULATING FLUIDIZED BED COMBUSTION BOILER (STARTUP & SHUTDOWN PERIODS)	Sulfur Dioxide (SO2)	0.11 LB/MMBTU (24-HR AVG, STARTUP & SHUTDOWN PERIODS)	BACT-PSD
				11.19	CIRCULATING FLUIDIZED BED BOILER (NORMAL OPERATION)	Carbon Monoxide	105.1 LB/H (3-HR AVG)	BACT-PSD
				11.19	CIRCULATING FLUIDIZED BED BOILER (NORMAL OPERATION)	Nitrogen Oxides (NOx)	78 PPM (@3% O2, 3-HR AVG); 38.9 LB/H (3-HR AVG)	BACT-PSD
				11.19	CIRCULATING FLUIDIZED BED BOILER (NORMAL OPERATION)	Particulate matter, filterable (FPM)	0.14 LB/MW-H (DAILY AVG); 0.015 LB/MMBTU (DAILY AVG)	BACT-PSD
				11.19	CIRCULATING FLUIDIZED BED BOILER (NORMAL OPERATION)	Particulate matter, total < 10 µ (TPM10)	4.31 LB/H (DAILY AVG); 0.0111 LB/MMBTU (DAILY AVG)	BACT-PSD
				11.19	CIRCULATING FLUIDIZED BED BOILER (NORMAL OPERATION)	Sulfur Dioxide (SO2)	20 PPM (@3% O2, 3-HR AVG); 14 LB/H (3-HR AVG)	BACT-PSD
TX-0648	PSD-TX-812-GHG	05/14/2013	INVISTA S.Ã€.R.L. - VICTORIA SITE	11.9	Boilers 1 & 2	Carbon Dioxide Equivalent (CO2e)	1371711 T/Y (12-MONTH ROLLING AVERAGE)	BACT-PSD
				11.9	Boilers 3 & 4	Carbon Dioxide Equivalent (CO2e)	1371711 T/Y (12-MONTH ROLLING AVERAGE)	BACT-PSD
TX-0798	135086, N224	05/13/2016	CEDAR BAYOU PLANT	11.31	Boiler MSS	Volatile Organic Compounds (VOC)	0	LAER
LA-0249	PSD-LA-562(M-4)	05/09/2011	RED RIVER MILL	11.12	NO. 2 HOGGED FUEL BOILER	Sulfur Dioxide (SO2)	60 LB/H (HOURLY MAXIMUM); 262.8 T/YR (ANNUAL MAXIMUM)	BACT-PSD

RBLC Search Results: Boilers

RBLC ID	PERMIT	DATE	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
MS-0092	0040-00055	05/08/2014	EMBERCLEAR GTL MS	12.31	Boiler, Nat Gas Fired	Carbon Monoxide	5 PPMV @ 3% O2 (3-HR ROLLING AVG)	BACT-PSD
				12.31	Boiler, Nat Gas Fired	Particulate matter, total (TPM)	1.31 LB/H (3-HR AVERAGE)	BACT-PSD
				12.31	Boiler, Nat Gas Fired	Particulate matter, total < 10 µ (TPM10)	1.31 LB/H (3-HR AVERAGE)	BACT-PSD
				12.31	Boiler, Nat Gas Fired	Particulate matter, total < 2.5 Âµ (TPM2.5)	1.31 LB/H (3-HR AVERAGE)	BACT-PSD
				12.31	Boiler, Nat Gas Fired	Volatile Organic Compounds (VOC)	0	BACT-PSD
				12.31	Boiler, Nat Gas Fired	Carbon Dioxide Equivalent (CO2e)	127981 T/YR (12-MONTH ROLLING TOTAL)	BACT-PSD
OK-0168	2010-594-C(M-2)PSD	05/05/2015	SEMINOLE GNRTNG STA	11.31	NATURAL GAS-FIRED BOILER (>250MMBTUH)	Carbon Monoxide	0.465 LB/MMBTU (30-DAY ROLLING AVERAGE)	BACT-PSD
				13.31	NATURAL GAS-FIRED BOILER (<100MMBTUH)	Carbon Monoxide	0.0075 LB/MMBTU (3-HOUR AVERAGE (TEST))	BACT-PSD
SC-0183	0420-0060-DX	05/04/2018	NUCOR STEEL - BERKELEY	19.6	Pickle Line Equipment (pickle line no. 3 boilers)	Particulate matter, filterable (FPM)	1.9 LB/MMSCF	BACT-PSD
				19.6	Pickle Line Equipment (pickle line no. 3 boilers)	Particulate matter, total < 10 µ (TPM10)	7.6 LB/MMSCF	BACT-PSD
				19.6	Pickle Line Equipment (pickle line no. 3 boilers)	Particulate matter, total < 2.5 Âµ (TPM2.5)	7.6 LB/MMSCF	BACT-PSD
				19.6	Pickle Line Equipment (pickle line no. 3 boilers)	Volatile Organic Compounds (VOC)	5.5 LB/MMSCF	BACT-PSD
				19.6	Pickle Line Equipment (pickle line no. 3 boilers)	Sulfur Dioxide (SO2)	0.6 LB/MMSCF	BACT-PSD
				19.6	Pickle Line Equipment (pickle line no. 3 boilers)	Nitrogen Oxides (NOx)	50 LB/MMSCF	BACT-PSD
				19.6	Pickle Line Equipment (pickle line no. 3 boilers)	Carbon Monoxide	84 LB/MMSCF	BACT-PSD
				19.6	Pickle Line Equipment (pickle line no. 3 boilers)	Carbon Dioxide Equivalent (CO2e)	15965 TPY (COMBINED LIMIT)	BACT-PSD
				19.6	Vacuum Tank Degasser Equipment (vacuum degasser boiler 2)	Particulate matter, filterable (FPM)	1.9 LB/MMSCF	BACT-PSD
				19.6	Vacuum Tank Degasser Equipment (vacuum degasser boiler 2)	Particulate matter, total < 10 µ (TPM10)	7.6 LB/MMSCF	BACT-PSD
				19.6	Vacuum Tank Degasser Equipment (vacuum degasser boiler 2)	Particulate matter, total < 2.5 Âµ (TPM2.5)	7.6 LB/MMSCF	BACT-PSD
				19.6	Vacuum Tank Degasser Equipment (vacuum degasser boiler 2)	Volatile Organic Compounds (VOC)	2.6 LB/MMSCF	BACT-PSD
				19.6	Vacuum Tank Degasser Equipment (vacuum degasser boiler 2)	Sulfur Dioxide (SO2)	0.6 LB/MMSCF	BACT-PSD
				19.6	Vacuum Tank Degasser Equipment (vacuum degasser boiler 2)	Nitrogen Oxides (NOx)	0.6 LB/MMSCF	BACT-PSD
				19.6	Vacuum Tank Degasser Equipment (vacuum degasser boiler 2)	Carbon Monoxide	61 LB/MMSCF	BACT-PSD
				19.6	Vacuum Tank Degasser Equipment (vacuum degasser boiler 2)	Carbon Dioxide Equivalent (CO2e)	26028 TPY	BACT-PSD
TX-0554	PSDTX1118 AND 83778	05/03/2010	COLETO CREEK UNIT 2	11.11	Coal-fired Boiler Unit 2	Nitrogen Oxides (NOx)	0.06 LB/MMBTU (ROLLING 30 DAY AVG); 0.05 LB/MMBTU (ROLLING 12 MONTH AVG)	BACT-PSD
				11.11	Coal-fired Boiler Unit 2	Sulfur Dioxide (SO2)	0.06 LB/MMBTU (30-DAY ROLLING); 0.06 LB/MMBTU (12-MONTH ROLLING)	BACT-PSD
				11.11	Coal-fired Boiler Unit 2	Carbon Monoxide	0.12 LB/MMBTU (30-DAY ROLLING); 0.12 LB/MMBTU (12-MONTH ROLLING)	BACT-PSD
				11.11	Coal-fired Boiler Unit 2	Mercury	0.012 LB/GW-H (12-MONTH ROLLING / MIXED FUEL); 0.015 LB/GW-H (12-MONTH ROLLING/ PRB ONLY)	MACT
				11.11	Coal-fired Boiler Unit 2	Ammonia (NH3)	10 PPMVD (3-HOUR ROLLING)	BACT-PSD
				11.11	Coal-fired Boiler Unit 2	Particulate matter, total < 10 µ (TPM10)	0.012 LB/MMBTU (ANNUAL / BASED ON STACK TEST)	BACT-PSD
				11.11	Coal-fired Boiler Unit 2	Particulate matter, total (TPM)	0.025 LB/MMBTU (ANNUAL / STACK TEST)	BACT-PSD
				11.11	Coal-fired Boiler Unit 2	Volatile Organic Compounds (VOC)	0.0034 LB/MMBTU (ANNUAL / STACK TEST)	BACT-PSD
				11.11	Coal-fired Boiler Unit 2	Sulfuric Acid (mist, vapors, etc)	0.004 LB/MMBTU (ANNUAL / STACK TEST)	BACT-PSD
				11.11	Coal-fired Boiler Unit 2	Hydrochloric Acid	0.0008 LB/MMBTU (ANNUAL / STACK TEST)	MACT
				11.11	Coal-fired Boiler Unit 2	Hydrogen Fluoride	0.0005 LB/MMBTU (ANNUAL / STACK TEST)	MACT
NY-0119	9-2911-00113/00039	05/02/2014	COVANTA NIAGARA I, LLC	11.31	Boilers - NG	Carbon Dioxide Equivalent (CO2e)	0	BACT-PSD
LA-0266	PSD-LA-569(M-1)	05/01/2013	EUNICE GAS EXTRACTION PLANT	11.31	Boiler B-101-G (12-1) (EQT 0061)	Carbon Dioxide Equivalent (CO2e)	0	BACT-PSD
AL-0302	705-0014-X014	04/29/2015	ROCKTENN STEVENSON	30.211	Recovery Boiler	Nitrogen Oxides (NOx)	120 PPM@8%O2 (30 DAYS AVG); 72.92 LB/H (3 HRS AVG)	BACT-PSD
				30.211	Recovery Boiler	Carbon Monoxide	213 PPM@8%O2 (3 HRS AVG); 87.5 LB/H (3 HRS AVG)	BACT-PSD
				30.211	Recovery Boiler	Volatile Organic Compounds (VOC)	50 PPM@8%O2 (3 HRS AVG); 8.87 LB/H (3 HRS AVG)	BACT-PSD
TX-0713	108411 PSDTX1350	04/29/2014	TENASKA BROWNSVILLE GENERATING STATION	13.31	boiler	Nitrogen Oxides (NOx)	9 PPMVD (@15% O2)	BACT-PSD
MN-0081	06100004-005	04/28/2010	BOSWELL ENERGY CENTER	11.11	Boiler 4	Carbon Monoxide	0.15 LB/MMBTU (30 D ROLL EXCEPT STARTUP/SHUTDOWN); 28826 LB/H (1-H FOR STARTUP/SHUTDOWN)	BACT-PSD
VA-0328	52588	04/26/2018	C4GT, LLC	12.31	Auxiliary Boiler	Nitrogen Oxides (NOx)	0.011 LB/MMBTU (CORRECTED TO 3% O2); 1.2 LB/H	BACT-PSD

RBLC Search Results: Boilers

RBLC ID	PERMIT	DATE	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				12.31	Auxiliary Boiler	Carbon Monoxide	0.037 LB/MMBTU; 3.9 LB/H	BACT-PSD
				12.31	Auxiliary Boiler	Particulate matter, total < 10 µ (TPM10)	0.8 LB/H; 3.3 T/YR (12 MO ROLLING TOTAL)	BACT-PSD
				12.31	Auxiliary Boiler	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.8 LB/H; 3.3 T/YR (12 MO ROLLING TOTAL)	BACT-PSD
				12.31	Auxiliary Boiler	Sulfur Dioxide (SO2)	0.0012 LB/MMBTU; 0.6 T/YR (12 MO ROLLING AV)	BACT-PSD
				12.31	Auxiliary Boiler	Sulfuric Acid (mist, vapors, etc)	0	BACT-PSD
				12.31	Auxiliary Boiler	Volatile Organic Compounds (VOC)	0.005 LB/MMBTU; 2.3 T/YR (12 MO ROLLING AV)	BACT-PSD
				12.31	Auxiliary Boiler	Carbon Dioxide Equivalent (CO2e)	53863 T/YR (12 MO ROLLING TOTAL)	BACT-PSD
CA-1225	SAC 12-01	04/25/2014	SIERRA PACIFIC INDUSTRIES-ANDERSON DIVISION	11.12	STOKER BOILER (NORMAL OPERATION)	Nitrogen Oxides (NOx)	0.13 LB/MMBTU (12-MONTH ROLLING BASIS); 0.15 LB/MMBTU (3-HOUR BLOCK AVERAGE)	BACT-PSD
				11.12	STOKER BOILER (NORMAL OPERATION)	Carbon Monoxide	0.23 LB/MMBTU (3-HOUR BLOCK AVERAGE); 107.7 LB/H (3-HOUR BLOCK AVERAGE)	BACT-PSD
				11.12	STOKER BOILER (NORMAL OPERATION)	Particulate matter, filterable (FPM)	0.02 LB/MMBTU (3-HOUR BLOCK AVERAGE); 9.4 LB/H (HOURLY, CORRECTED TO 12% CO2)	BACT-PSD
				11.12	STOKER BOILER (NORMAL OPERATION)	Particulate matter, total < 10 µ (TPM10)	0.02 LB/MMBTU (3-HOUR BLOCK AVERAGE); 9.4 LB/H (HOURLY, CORRECTED TO 12% CO2)	BACT-PSD
				11.12	STOKER BOILER (NORMAL OPERATION)	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.02 LB/MMBTU (3-HOUR BLOCK AVERAGE); 9.4 LB/H (HOURLY, CORRECTED TO 12% CO2)	BACT-PSD
				11.12	STOKER BOILER (NORMAL OPERATION)	Carbon Dioxide Equivalent (CO2e)	0.36 LB/LB STEAM PRODUCED (12-MONTH ANNUAL ROLLING AVERGAE BASIS)	RACT
				11.12	STOKER BOILER (STARTUP & SHUTDOWN PERIODS)	Nitrogen Oxides (NOx)	70.2 LB/H (8-HR AVG (STARTUP PERIODS)); 70.2 LB/H (8-HR AVG (SHUTDOWN PERIODS))	BACT-PSD
				11.12	STOKER BOILER (STARTUP & SHUTDOWN PERIODS)	Carbon Monoxide	108 LB/H (8-HR AVG (STARTUP PERIODS)); 108 LB/H (8-HR AVG (SHUTDOWN PERIODS))	BACT-PSD
				11.12	STOKER BOILER (STARTUP & SHUTDOWN PERIODS)	Particulate matter, filterable (FPM)	8.93 LB/H (24-HR AVG (STARTUP PERIODS)); 8.93 LB/H (24-HR AVG (SHUTDOWN PERIODS))	BACT-PSD
				11.12	STOKER BOILER (STARTUP & SHUTDOWN PERIODS)	Particulate matter, total < 10 µ (TPM10)	8.93 LB/H (24-HR AVG (STARTUP PERIODS)); 8.93 LB/H (24-HR AVG (SHUTDOWN PERIODS))	OTHER CASE-BY-CASE
				11.12	STOKER BOILER (STARTUP & SHUTDOWN PERIODS)	Particulate matter, total < 2.5 Âµ (TPM2.5)	8.93 LB/H (24-HR AVG (STARTUP PERIODS)); 8.93 LB/H (24-HR AVG (SHUTDOWN PERIODS))	OTHER CASE-BY-CASE
NM-0052	PSD-5217	04/25/2014	ZIA II GAS PLANT	12.31	Industrial Sized Boilers/Furnaces >100 mmBtu/hr	Carbon Monoxide	0	BACT-PSD
				12.31	Industrial Sized Boilers/Furnaces >100 mmBtu/hr	Carbon Dioxide Equivalent (CO2e)	0	BACT-PSD
				12.31	Industrial Sized Boilers/Furnaces >100 mmBtu/hr	Particulate matter, total < 10 µ (TPM10)	0	BACT-PSD
				12.31	Industrial Sized Boilers/Furnaces >100 mmBtu/hr	Particulate matter, total < 2.5 Âµ (TPM2.5)	0	BACT-PSD
				12.31	Industrial Sized Boilers/Furnaces >100 mmBtu/hr	Nitrogen Oxides (NOx)	0	BACT-PSD
				12.31	Industrial Sized Boilers/Furnaces >100 mmBtu/hr	Sulfur Oxides (SOx)	0	BACT-PSD
				12.31	Industrial Sized Boilers/Furnaces >100 mmBtu/hr	Volatile Organic Compounds (VOC)	0	BACT-PSD
*WI-0283	17-JJW-207	04/24/2018	AFE, INC. â€"LCM PLANT	13.31	B01-B12, Boilers	Volatile Organic Compounds (VOC)	0.0036 LB/MMBTU	BACT-PSD
				13.31	B01-B12, Boilers	Particulate matter, total (TPM)	0.0075 LB/MMBTU	BACT-PSD
				13.31	B01-B12, Boilers	Particulate matter, total < 10 µ (TPM10)	0.0075 LB/MMBTU	BACT-PSD
				13.31	B01-B12, Boilers	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.0075 LB/MMBTU	BACT-PSD
				13.31	B01-B12, Boilers	Visible Emissions (VE)	7.5 % OPACITY	BACT-PSD
				13.31	B01-B12, Boilers	Sulfur Dioxide (SO2)	0.0006 LB/MMBTU	BACT-PSD
				13.31	B01-B12, Boilers	Nitrogen Oxides (NOx)	0.0105 LB/MMBTU	BACT-PSD
				13.31	B01-B12, Boilers	Carbon Dioxide Equivalent (CO2e)	160 LB/1000 LB CO2E (12-MONTH AVERAGE)	BACT-PSD
				13.31	B01-B12, Boilers	Carbon Monoxide	25 PPMVD; 0.52 LB/HR	BACT-PSD
*WI-0284	18-JJW-017	04/24/2018	SIO INTERNATIONAL WISCONSIN, INC. -ENERGY PLANT	13.31	B13-B24 & B25-B36 Natural Gas-Fired Boilers	Particulate matter, total (TPM)	0.0075 LB/MMBTU	BACT-PSD
				13.31	B13-B24 & B25-B36 Natural Gas-Fired Boilers	Particulate matter, total < 10 µ (TPM10)	0.0075 LB/MMBTU	BACT-PSD
				13.31	B13-B24 & B25-B36 Natural Gas-Fired Boilers	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.0075 LB/MMBTU	BACT-PSD
				13.31	B13-B24 & B25-B36 Natural Gas-Fired Boilers	Visible Emissions (VE)	7.5 % (6-MINUTES AVERAGE)	BACT-PSD
				13.31	B13-B24 & B25-B36 Natural Gas-Fired Boilers	Sulfur Dioxide (SO2)	0.0006 LB/MMBTU	BACT-PSD
				13.31	B13-B24 & B25-B36 Natural Gas-Fired Boilers	Nitrogen Oxides (NOx)	0.0105 LB/MMBTU (1-HOUR AVERAGE)	BACT-PSD
				13.31	B13-B24 & B25-B36 Natural Gas-Fired Boilers	Carbon Dioxide Equivalent (CO2e)	160 LB CO2E/1000LB STEAM (12 MONTH AVERAGE)	BACT-PSD
				13.31	B13-B24 & B25-B36 Natural Gas-Fired Boilers	Carbon Monoxide	25 PPMVD; 0.52 LB/HR	BACT-PSD
				13.31	B13-B24 & B25-B36 Natural Gas-Fired Boilers	Volatile Organic Compounds (VOC)	0.0036 LB/MMBTU	BACT-PSD
TX-0888	155952 PSDTX1556 GHGPSDTX19	04/23/2020	ORANGE POLYETHYLENE PLANT	11.31	BOILERS	Particulate matter, total < 2.5 µ (TPM2.5)	0.0075 LB/MMBTU	BACT-PSD

RBLC Search Results: Boilers

RBLC ID	PERMIT	DATE	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				11.31	BOILERS	Nitrogen Oxides (NOx)	0.015 LB/MMBTU (HOURLY); 0.01 LB/MMBTU (ANNUAL)	BACT-PSD
				11.31	BOILERS	Volatile Organic Compounds (VOC)	0.0054 LB/MMBTU	BACT-PSD
				11.31	BOILERS	Carbon Monoxide	50 PPMVD (3% O2 NORMAL OPERATIONS); 400 PPMVD (3% O2 MSS)	BACT-PSD
				11.31	BOILERS	Sulfur Dioxide (SO2)	2 GR/100 SCF	BACT-PSD
				11.31	BOILERS	Particulate matter, filterable (FPM)	0.0075 LB/MMBTU	BACT-PSD
				11.31	BOILERS	Particulate matter, total < 10 µ (TPM10)	0.0075 LB/MMBTU	BACT-PSD
				11.31	BOILERS	Particulate matter, total < 2.5 µ (TPM2.5)	0.0075 LB/MMBTU	BACT-PSD
				11.31	BOILERS	Carbon Dioxide Equivalent (CO2e)	0	BACT-PSD
				11.31	BOILERS	Ammonia (NH3)	10 PPMVD (3% O2)	BACT-PSD
MD-0041	PSC CASE NO. 9280	04/23/2014	CPV ST. CHARLES	13.31	AUXILLARY BOILER	Particulate matter, filterable (FPM)	0.005 LB/MMBTU (3-HOUR AVERAGE)	BACT-PSD
				13.31	AUXILLARY BOILER	Particulate matter, total < 10 µ (TPM10)	0.005 LB/MMBTU (3-HOUR AVERAGE)	BACT-PSD
				13.31	AUXILLARY BOILER	Nitrogen Oxides (NOx)	0.011 LB/MMBTU (3-HOUR AVERAGE)	LAER
				13.31	AUXILLARY BOILER	Carbon Monoxide	0.02 LB/MMBTU (3-HOUR AVERAGE BLOCK)	BACT-PSD
				13.31	AUXILLARY BOILER	Volatile Organic Compounds (VOC)	0.002 LB/MMBTU (3-HOUR AVERAGE BLOCK)	LAER
PA-0291	37-337A	04/23/2013	HICKORY RUN ENERGY STATION	13.31	AUXILIARY BOILER	Particulate matter, total (TPM)	0.005 LB/MMBTU; 0.46 TPY (12-MONTH ROLLING TOTAL)	OTHER CASE-BY-CASE
				13.31	AUXILIARY BOILER	Nitrogen Oxides (NOx)	0.011 LB/MMBTU; 1.01 TPY (12-MONTH ROLLING TOTAL)	OTHER CASE-BY-CASE
				13.31	AUXILIARY BOILER	Carbon Monoxide	0.036 LB/MMBTU; 3.31 TPY (12-MONTH ROLLING TOTAL)	OTHER CASE-BY-CASE
				13.31	AUXILIARY BOILER	Volatile Organic Compounds (VOC)	0.0015 LB/MMBTU; 0.14 TPY (12-MONTH ROLLING TOTAL)	OTHER CASE-BY-CASE
				13.31	AUXILIARY BOILER	Sulfur Oxides (SOx)	0.0021 LB/MMBTU; 0.19 (12-MONTH ROLLING TOTAL)	OTHER CASE-BY-CASE
				13.31	AUXILIARY BOILER	Sulfuric Acid (mist, vapors, etc)	0.0005 LB/MMBTU; 0.04 TPY (12-MONTH ROLLING TOTAL)	OTHER CASE-BY-CASE
				13.31	AUXILIARY BOILER	Carbon Dioxide Equivalent (CO2e)	13696 TPY (12-MONTH ROLLING BASIS)	OTHER CASE-BY-CASE
ID-0021	P-2013.0030	04/21/2014	MAGNIDA	11.31	PACKAGE BOILER	Particulate matter, total < 10 µ (TPM10)	0.0075 LB. (PER MMBTU OF HEAT INPUT, 3 TEST RUN AVG.)	BACT-PSD
				11.31	PACKAGE BOILER	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.0075 LB. (PER MMBTU OF HEAT INPUT, 3 TEST RUN AVG.)	BACT-PSD
				11.31	PACKAGE BOILER	Nitrogen Oxides (NOx)	0.0125 LB. (PER MMBTU, 365-DAY AVERAGE)	BACT-PSD
				11.31	PACKAGE BOILER	Carbon Monoxide	0.015 LB/MMBTU (3 TEST RUN AVERAGE)	BACT-PSD
				11.31	PACKAGE BOILER	Volatile Organic Compounds (VOC)	0.0054 LB/MMBTU (3 TEST RUN AVERAGE)	BACT-PSD
KY-0115	V-20-015	04/19/2021	NUCOR STEEL GALLATIN, LLC	13.31	Vacuum Degasser Boiler (EP 20-13)	Lead (Pb) / Lead Compounds	0.0005 LB/MMSCF; 0.0001 TON/YR (12-MONTH ROLLING)	BACT-PSD
				13.31	Vacuum Degasser Boiler (EP 20-13)	Carbon Monoxide	61 LB/MMSCF; 13.2 TON/YR (12-MONTH ROLLING)	BACT-PSD
				13.31	Vacuum Degasser Boiler (EP 20-13)	Nitrogen Oxides (NOx)	35 LB/MMSCF; 7.57 TON/YR (12-MONTH ROLLING)	BACT-PSD
				13.31	Vacuum Degasser Boiler (EP 20-13)	Sulfur Dioxide (SO2)	0.6 LB/MMSCF; 0.13 TON/YR (12-MONTH ROLLING)	BACT-PSD
				13.31	Vacuum Degasser Boiler (EP 20-13)	Volatile Organic Compounds (VOC)	5.5 LB/MMSCF; 1.19 TON/YR (12-MONTH ROLLING)	BACT-PSD
				13.31	Vacuum Degasser Boiler (EP 20-13)	Carbon Dioxide Equivalent (CO2e)	26125 TONS/YR (12-MONTH ROLLING)	BACT-PSD
				13.31	Vacuum Degasser Boiler (EP 20-13)	Particulate matter, filterable (FPM)	1.9 LB/MMSCF; 0.41 TON/YR (12-MONTH ROLLING)	BACT-PSD
				13.31	Vacuum Degasser Boiler (EP 20-13)	Particulate matter, total < 10 µ (TPM10)	7.6 LB/MMSCF; 1.64 TON/YR (12-MONTH ROLLING)	BACT-PSD
				13.31	Vacuum Degasser Boiler (EP 20-13)	Particulate matter, total < 2.5 Âµ (TPM2.5)	7.6 LB/MMSCF; 1.64 TON/YR (12-MONTH ROLLING)	BACT-PSD
				13.31	Pickle Line #2 â€“ Boiler #1 & #2 (EP 21-04 & EP 21-05)	Particulate matter, total < 10 µ (TPM10)	7.6 LB/MMSCF (EACH); 0.8 TON/YR (12-MONTH ROLLING, EACH)	BACT-PSD
				13.31	Pickle Line #2 â€“ Boiler #1 & #2 (EP 21-04 & EP 21-05)	Particulate matter, total < 2.5 Âµ (TPM2.5)	7.6 LB/MMSCF (EACH); 0.8 TON/YR (12-MONTH ROLLING, EACH)	BACT-PSD
				13.31	Pickle Line #2 â€“ Boiler #1 & #2 (EP 21-04 & EP 21-05)	Lead (Pb) / Lead Compounds	0.0005 LB/MMSCF (EACH); 0.0001 TON/YR (12-MONTH ROLLING, EACH)	BACT-PSD
				13.31	Pickle Line #2 â€“ Boiler #1 & #2 (EP 21-04 & EP 21-05)	Carbon Monoxide	84 LB/MMSCF (EACH); 8.82 TON/YR (12-MONTH ROLLING, EACH)	BACT-PSD
				13.31	Pickle Line #2 â€“ Boiler #1 & #2 (EP 21-04 & EP 21-05)	Nitrogen Oxides (NOx)	50 LB/MMSCF (EACH); 5.25 TON/YR (12-MONTH ROLLING, EACH)	BACT-PSD
				13.31	Pickle Line #2 â€“ Boiler #1 & #2 (EP 21-04 & EP 21-05)	Sulfur Dioxide (SO2)	0.6 LB/MMSCF (EACH); 0.063 TON/YR (12-MONTH ROLLING, EACH)	BACT-PSD
				13.31	Pickle Line #2 â€“ Boiler #1 & #2 (EP 21-04 & EP 21-05)	Volatile Organic Compounds (VOC)	5.5 LB/MMSCF (EACH); 0.58 TON/YR (12-MONTH ROLLING, EACH)	BACT-PSD
				13.31	Pickle Line #2 â€“ Boiler #1 & #2 (EP 21-04 & EP 21-05)	Carbon Dioxide Equivalent (CO2e)	12675 TONS/YR (EACH)	BACT-PSD
				13.31	Pickle Line #2 â€“ Boiler #1 & #2 (EP 21-04 & EP 21-05)	Particulate matter, filterable (FPM)	1.9 LB/MMSCF (EACH); 0.12 TON/YR (12-MONTH ROLLING, EACH)	BACT-PSD
OH-0377	P0122266	04/19/2018	HARRISON POWER	13.31	Auxiliary Boiler (B001)	Carbon Monoxide	1.67 LB/H; 0.9 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD

RBLC Search Results: Boilers

RBLC ID	PERMIT	DATE	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				13.31	Auxiliary Boiler (B001)	Nitrogen Oxides (NOx)	1.56 LB/H; 0.84 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				13.31	Auxiliary Boiler (B001)	Volatile Organic Compounds (VOC)	0.16 LB/H; 0.086 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				13.31	Auxiliary Boiler (B001)	Particulate matter, total (TPM)	0.33 LB/H; 0.18 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				13.31	Auxiliary Boiler (B001)	Particulate matter, total < 10 µ (TPM10)	0.33 LB/H; 0.18 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				13.31	Auxiliary Boiler (B001)	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.33 LB/H; 0.18 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				13.31	Auxiliary Boiler (B001)	Sulfur Dioxide (SO2)	0.022 LB/H; 0.012 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				13.31	Auxiliary Boiler (B001)	Sulfuric Acid (mist, vapors, etc)	0.004 LB/H; 0.002 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				13.31	Auxiliary Boiler (B001)	Carbon Dioxide Equivalent (CO2e)	2817.6 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				13.31	Auxiliary Boiler (B001)	Visible Emissions (VE)	0	BACT-PSD
				13.31	Auxiliary Boiler (B002)	Nitrogen Oxides (NOx)	2.19 LB/H; 1.18 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				13.31	Auxiliary Boiler (B002)	Carbon Monoxide	2.48 LB/H; 1.34 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				13.31	Auxiliary Boiler (B002)	Volatile Organic Compounds (VOC)	0.248 LB/H; 0.134 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				13.31	Auxiliary Boiler (B002)	Particulate matter, total (TPM)	0.48 LB/H; 0.26 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				13.31	Auxiliary Boiler (B002)	Particulate matter, total < 10 µ (TPM10)	0.48 LB/H; 0.26 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				13.31	Auxiliary Boiler (B002)	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.48 LB/H; 0.26 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				13.31	Auxiliary Boiler (B002)	Sulfur Dioxide (SO2)	0.12 LB/H; 0.065 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				13.31	Auxiliary Boiler (B002)	Sulfuric Acid (mist, vapors, etc)	0.018 LB/H; 0.01 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				13.31	Auxiliary Boiler (B002)	Carbon Dioxide Equivalent (CO2e)	5009.1 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				13.31	Auxiliary Boiler (B002)	Visible Emissions (VE)	0	BACT-PSD
OH-0368	P0118959	04/19/2017	PALLAS NITROGEN LLC	11.31	Package Boilers (2 identical, B003 and B004)	Carbon Monoxide	4 LB/H; 17.4 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				11.31	Package Boilers (2 identical, B003 and B004)	Nitrogen Oxides (NOx)	3.3 LB/H; 14.5 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				11.31	Package Boilers (2 identical, B003 and B004)	Particulate matter, total < 10 µ (TPM10)	2 LB/H; 8.6 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				11.31	Package Boilers (2 identical, B003 and B004)	Particulate matter, total < 2.5 Âµ (TPM2.5)	2 LB/H; 8.6 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				11.31	Package Boilers (2 identical, B003 and B004)	Volatile Organic Compounds (VOC)	1.43 LB/H; 6.3 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				11.31	Package Boilers (2 identical, B003 and B004)	Carbon Dioxide Equivalent (CO2e)	137364 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				11.31	Package Boilers (2 identical, B003 and B004)	Visible Emissions (VE)	0	BACT-PSD
TN-0162	970816F	04/19/2016	JOHNSONVILLE COGENERATION	12.31	Two Natural Gas-Fired Auxiliary Boilers	Particulate matter, total (TPM)	0.008 LB/MMBTU	BACT-PSD
				12.31	Two Natural Gas-Fired Auxiliary Boilers	Carbon Monoxide	0.084 LB/MMBTU	BACT-PSD
				12.31	Two Natural Gas-Fired Auxiliary Boilers	Nitrogen Oxides (NOx)	0.013 LB/MMBTU	BACT-PSD
				12.31	Two Natural Gas-Fired Auxiliary Boilers	Carbon Dioxide Equivalent (CO2e)	117 LB/MMBTU	BACT-PSD
VT-0039	AP-11-038	04/19/2013	NORTH SPRINGFIELD SUSTAINABLE ENERGY PROJECT	11.12	Wood Fired Boiler	Ammonia (NH3)	10 PPM @ 7% O2 (24 HOUR ROLLING AVERAGE)	OTHER CASE-BY-CASE
				11.12	Wood Fired Boiler	Hydrochloric Acid	0.0008 LB/MMBTU HEAT INPUT (HOURLY AVERAGE)	OTHER CASE-BY-CASE
				11.12	Wood Fired Boiler	Nitrogen Oxides (NOx)	0.03 LB/MMBTU (12 MONTH ROLLING AVERAGE); 0.06 LB/MMBTU (1-HOUR DOES NOT APPLY DURING STARTUP)	BACT-PSD
				11.12	Wood Fired Boiler	Carbon Monoxide	0.075 LB/MMBTU (24 HOUR - DOES NOT APPLY DURING STARTUP); 0.075 LB/MMBTU (12 MONTH ROLLING AVERAGE)	BACT-PSD
				11.12	Wood Fired Boiler	Particulate matter, total (TPM)	0.019 LB/MMBTU (HOURLY AVERAGE); 9.5 LB/H (HOURLY AVERAGE)	BACT-PSD
				11.12	Wood Fired Boiler	Sulfur Dioxide (SO2)	0.02 LB/MMBTU (HOURLY AVERAGE); 10 LB/H (HOURLY AVERAGE)	BACT-PSD
				11.12	Wood Fired Boiler	Particulate matter, total < 10 µ (TPM10)	0.01 LB/MMBTU (HOURLY AVERAGE); 5 LB/H (HOURLY AVERAGE)	BACT-PSD
				11.12	Wood Fired Boiler	Carbon Dioxide Equivalent (CO2e)	2668 LB/MW-H (12 MONTH ROLLING AVERAGE - YEAR 1&2); 2675 LB/MW-H (12 MONTH ROLLING AVERAGE - YEAR 3+)	BACT-PSD
TX-0599	PSDTX1138 & 85013	04/19/2011	LAS BRISAS ENERGY CENTER	11.19	CFB BOILER	Nitrogen Oxides (NOx)	0.07 LB/MMBTU (30-DAY ROLLING); 0.1 LB/MMBTU (1-H)	BACT-PSD

RBLC Search Results: Boilers

RBLC ID	PERMIT	DATE	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				11.19	CFB BOILER	Sulfur Dioxide (SO2)	0.114 LB/MMBTU (30-DAY ROLLING); 0.086 LB/MMBTU (12-MONTH ROLLING)	BACT-PSD
				11.19	CFB BOILER	Carbon Monoxide	0.1 LB/MMBTU (12-MO ROLLING)	BACT-PSD
				11.19	CFB BOILER	Mercury	0 LB/MMBTU (12-MO ROLLING)	BACT-PSD
				11.19	CFB BOILER	Particulate matter, filterable (FPM)	0.011 LB/MMBTU (3-H)	BACT-PSD
				11.19	CFB BOILER	Particulate matter, total (TPM)	0.025 LB/MMBTU (3-H)	BACT-PSD
				11.19	CFB BOILER	Volatile Organic Compounds (VOC)	0.005 LB/MMBTU (3-HR)	OTHER CASE-BY-CASE
				11.19	CFB BOILER	Sulfuric Acid (mist, vapors, etc)	0.0045 LB/MMBTU (3-H)	BACT-PSD
				11.19	CFB BOILER	Hydrogen Fluoride	0.0004 LB/MMBTU (3-H)	BACT-PSD
TX-0576	PSDTX1188 AND 86860	04/19/2010	PIPE MANUFACTURING STEEL MINI MILL	12.31	vacuum degasser boiler	Nitrogen Oxides (NOx)	0.1 LB/MMBTU	BACT-PSD
				12.31	vacuum degasser boiler	Carbon Monoxide	0.0842 LB/MMBTU	BACT-PSD
				12.31	vacuum degasser boiler	Sulfur Dioxide (SO2)	0.0006 LB/MMBTU	BACT-PSD
				12.31	vacuum degasser boiler	Particulate matter, total < 10 µ (TPM10)	0.0075 LB/MMBTU	BACT-PSD
				12.31	vacuum degasser boiler	Volatile Organic Compounds (VOC)	0.0054 LB/MMBTU	BACT-PSD
WI-0259	11-DMM-326	04/16/2012	MANITOWOC PUBLIC UTILITIES	11.19	B09 - Circulating Fluidized Bed Boiler	Carbon Monoxide	1000 POUNDS (IN ANY HOUR); 0.15 POUNDS PER MMBTU (30 DAY AVERAGE, EXCLUDING S&S)	BACT-PSD
				11.19	B08 - Circulating Fluidized Bed Boiler	Carbon Monoxide	1500 POUNDS (IN ANY HOUR); 0.36 POUNDS PER MMBTU (30-DAY AVERAGE, EXCLUDING S&S)	BACT-PSD
				13.31	B10 - Natural Gas-Fired Package Boiler	Carbon Monoxide	0.109 POUNDS PER MMBTU (AT LOADS OF LESS THAN 50%); 0.036 POUNDS PER MMBTU (AT LOADS OF 50% OR GREATER)	BACT-PSD
*SC-0193	0560-0385-CA	04/15/2016	MERCEDES BENZ VANS, LLC	13.31	Energy Center Boilers	Particulate matter, total (TPM)	7.6 LB/MMSCF (3 HR BLOCK AVERAGE)	BACT-PSD
				13.31	Energy Center Boilers	Particulate matter, total < 10 µ (TPM10)	7.6 LB/MMSCF (3 HOUR BLOCK AVERAGE)	BACT-PSD
				13.31	Energy Center Boilers	Particulate matter, total < 2.5 Âµ (TPM2.5)	7.6 LB/MMSCF (3 HOUR BLOCK AVERAGE)	BACT-PSD
				13.31	Energy Center Boilers	Volatile Organic Compounds (VOC)	5.5 LB/MMSCF (3 HOUR BLOCK AVERAGE)	BACT-PSD
IA-0107	13-A-499-P	04/14/2014	MARSHALLTOWN GENERATING STATION	13.31	auxiliary boiler	Nitrogen Oxides (NOx)	0.013 LB/MMBTU (AVERAGE OF 3 ONE-HOUR TEST RUNS)	BACT-PSD
				13.31	auxiliary boiler	Carbon Monoxide	0.0164 LB/MMBTU (AVERAGE OF 3 ON-HOUR TEST RUNS)	BACT-PSD
				13.31	auxiliary boiler	Volatile Organic Compounds (VOC)	0.005 LB/MMBTU (AVERAGE OF 3 ONE-HOUR TEST RUNS)	BACT-PSD
				13.31	auxiliary boiler	Particulate matter, total (TPM)	0.008 LB/MMBTU (AVERAGE OF 3 ONE-HOUR TEST RUNS)	BACT-PSD
				13.31	auxiliary boiler	Sulfuric Acid (mist, vapors, etc)	0.0055 LB/H (AVERAGE OF 3 ONE-HOUR TEST RUNS)	BACT-PSD
				13.31	auxiliary boiler	Carbon Dioxide Equivalent (CO2e)	17313 TON/YR (12-MONTH ROLLING TOTAL)	BACT-PSD
				13.31	auxiliary boiler	Carbon Dioxide Equivalent (CO2e)	17313 TON/YR (12-MONTH ROLLING TOTAL)	BACT-PSD
*TX-0920	107523 AND N174M2	04/12/2021	ENTERPRISE MONT BELVIEU COMPLEX	11.39	Waste Heat Boiler	Volatile Organic Compounds (VOC)	2.4 PPMVD (15% O2)	LAER
				11.39	Waste Heat Boiler	Carbon Monoxide	50 PPMVD (3% O2)	BACT-PSD
*PA-0315	30-00233B	04/12/2017	HILLTOP ENERGY CENTER, LLC	15.19	Auxiliary Boiler	Nitrogen Oxides (NOx)	0.011 LB (MMBTU)	
				15.19	Auxiliary Boiler	Carbon Monoxide	0.037 LB (MMBTU)	
IL-0128	17060030	04/11/2018	CITGO PETROLEUM CORPORATION	11.39	Two RFG-fired Boilers	Particulate matter, total < 10 µ (TPM10)	0.0075 LB/MMBTU (3-HOUR AVERAGE)	BACT-PSD
				11.39	Two RFG-fired Boilers	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.0075 LB/MMBTU (3-HOUR AVERAGE)	BACT-PSD
				11.39	Two RFG-fired Boilers	Carbon Dioxide Equivalent (CO2e)	230 LB/LB STEAM (12-MONTH ROLLING AVERAGE)	BACT-PSD
TX-0731	118270 AND PSDTX1398	04/10/2015	CORPUS CHRISTI TERMINAL CONDENSATE SPLITTER	12.31	Industrial-Size Boilers/Furnaces	Nitrogen Oxides (NOx)	0.006 LB/MMBTU (12-MONTH AVG); 0.01 LB/MMBTU (BLOCK 1-HR AVG)	BACT-PSD
				12.31	Industrial-Size Boilers/Furnaces	Carbon Monoxide	50 PPMVD @ 3% O2 (1-HR AVG)	BACT-PSD
KY-0100	V-05-070 R3	04/09/2010	J.K. SMITH GENERATING STATION	11.11	CIRCULATING FLUIDIZED BED BOILER CFB1 AND CFB2	Particulate matter, filterable (FPM)	0.09 LB/MMBTU (30 DAY AVERAGE); 210 LB/H (24 HOUR BLOCK)	BACT-PSD
				11.11	CIRCULATING FLUIDIZED BED BOILER CFB1 AND CFB2	Particulate matter, total < 10 µ (TPM10)	0.09 LB/MMBTU	BACT-PSD
				11.11	CIRCULATING FLUIDIZED BED BOILER CFB1 AND CFB2	Carbon Monoxide	0.1 LB/MMBTU (30 DAY); 300 LB/H (8 HOUR BLOCK)	BACT-PSD
				11.11	CIRCULATING FLUIDIZED BED BOILER CFB1 AND CFB2	Sulfur Dioxide (SO2)	0.075 LB/MMBTU (30 DAY AVERAGE); 225 LB/H (24 HOUR BLOCK)	BACT-PSD
				11.11	CIRCULATING FLUIDIZED BED BOILER CFB1 AND CFB2	Nitrogen Dioxide (NO2)	0.07 LB/MMBTU (30 DAY AVERAGE); 210 LB/H (24 HOUR BLOCK)	BACT-PSD
				11.11	CIRCULATING FLUIDIZED BED BOILER CFB1 AND CFB2	Volatile Organic Compounds (VOC)	0.02 LB/MMBTU (3-HOUR)	BACT-PSD
				11.11	CIRCULATING FLUIDIZED BED BOILER CFB1 AND CFB2	Mercury	6 E-6 LB/MWH (BIT COAL ON ANNUAL AVERAG); 6 E-6 LB/MWH (WASTE COAL ON ANNUAL AVE)	OTHER CASE-BY-CASE
				11.11	CIRCULATING FLUIDIZED BED BOILER CFB1 AND CFB2	Sulfuric Acid (mist, vapors, etc)	0.005 LB/MMBTU (3-HR); 15 LB/H (3 HR)	BACT-PSD
MD-0042	CPCN CASE NO. 9327	04/08/2014	WILDCAT POINT GENERATION FACILITY	13.31	AUXILLARY BOILER	Particulate matter, filterable (FPM)	0.0075 LB/MMBTU (3-HOUR BLOCK AVERAGE)	BACT-PSD
				13.31	AUXILLARY BOILER	Particulate matter, total < 10 µ (TPM10)	0.0075 LB/MMBTU (3-HOUR BLOCK AVERAGE)	BACT-PSD
				13.31	AUXILLARY BOILER	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.0075 LB/MMBTU (3-HOUR BLOCK AVERAGE)	BACT-PSD
				13.31	AUXILLARY BOILER	Sulfur Dioxide (SO2)	0.0006 LB/MMBTU (3-HOUR BLOCK AVERAGE)	BACT-PSD
				13.31	AUXILLARY BOILER	Nitrogen Oxides (NOx)	0.01 LB/MMBTU (3-HOUR BLOCK AVERAGE)	LAER
				13.31	AUXILLARY BOILER	Carbon Monoxide	0.036 LB/MMBTU (3-HOUR BLOCK AVERAGE)	BACT-PSD
				13.31	AUXILLARY BOILER	Volatile Organic Compounds (VOC)	0.0033 LB/MMBTU (3-HOUR BLOCK AVERAGE)	LAER
				13.31	AUXILLARY BOILER	Sulfuric Acid (mist, vapors, etc)	0.004 LB/MMBTU (3-HOUR BLOCK AVERAGE)	BACT-PSD
GA-0145	3295-165-0012-P-01-0	04/06/2012	CARBO CERAMICS INC. - MILLEN FACILITY	19.6	BOILER	Nitrogen Oxides (NOx)	12 PPMV (SEE BELOW)	BACT-PSD

RBLC Search Results: Boilers

RBLC ID	PERMIT	DATE	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
CT-0156	107-0056	04/06/2010	MONTVILLE POWER LLC	11.12	42 MW Biomass utility boiler	Particulate matter, total (TPM)	0.026 LB/MMBTU	BACT-PSD
				11.12	42 MW Biomass utility boiler	Carbon Monoxide	0.1 LB/MMBTU (8 HOUR BLOCK)	BACT-PSD
				11.12	42 MW Biomass utility boiler	Volatile Organic Compounds (VOC)	0.01 LB/MMBTU	BACT-PSD
				11.12	42 MW Biomass utility boiler	Nitrogen Oxides (NOx)	0.06 LB/MMBTU (24 HR BLOCK)	LAER
				11.12	42 MW Biomass utility boiler	Sulfur Oxides (SOx)	0.025 LB/MMBTU (3 HR BLOCK)	BACT-PSD
				11.12	42 MW Biomass utility boiler	Ammonia (NH3)	18 PPM (24 HR BLOCK)	OTHER CASE-BY-CASE
				11.12	42 MW Biomass utility boiler	Carbon Dioxide Equivalent (CO2e)	590103 T/YR; 15564 BTU/KW-H ((GROSS) 12-MONTH ROLLING AVERAGE)	BACT-PSD
				11.22	82 Utility boiler	Particulate matter, total (TPM)	0.014 LB/MMBTU	BACT-PSD
				11.22	82 Utility boiler	Sulfur Oxides (SOx)	1.7 LB/H	BACT-PSD
				11.22	82 Utility boiler	Nitrogen Oxides (NOx)	0.06 LB/MMBTU	BACT-PSD
				11.22	82 Utility boiler	Carbon Monoxide	0.036 LB/MMBTU	BACT-PSD
				11.31	82 MW Utility Boiler	Particulate matter, total (TPM)	7.6 LB/H	BACT-PSD
				11.31	82 MW Utility Boiler	Nitrogen Oxides (NOx)	0.06 LB/MMBTU	BACT-PSD
				11.31	82 MW Utility Boiler	Volatile Organic Compounds (VOC)	5.5 LB/H	BACT-PSD
				11.31	82 MW Utility Boiler	Carbon Monoxide	0.084 LB/MMBTU	BACT-PSD
AR-0159	2305-AOP-R4	04/05/2019	BIG RIVER STEEL LLC	13.31	BOILER, PICKLE LINE	Particulate matter, filterable (FPM)	0.0019 LB/MMBTU	BACT-PSD
				13.31	BOILER, PICKLE LINE	Particulate matter, total < 10 µ (TPM10)	0.0019 LB/MMBTU	BACT-PSD
				13.31	BOILER, PICKLE LINE	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.0019 LB/MMBTU	BACT-PSD
				13.31	BOILER, PICKLE LINE	Visible Emissions (VE)	5 %	BACT-PSD
				13.31	BOILER, PICKLE LINE	Sulfur Dioxide (SO2)	0.0006 LB/MMBTU	BACT-PSD
				13.31	BOILER, PICKLE LINE	Volatile Organic Compounds (VOC)	0.0054 LB/MMBTU	BACT-PSD
				13.31	BOILER, PICKLE LINE	Carbon Monoxide	0.0824 LB/MMBTU	BACT-PSD
				13.31	BOILER, PICKLE LINE	Nitrogen Oxides (NOx)	0.035 LB/MMBTU	BACT-PSD
				13.31	BOILER, PICKLE LINE	Carbon Dioxide	117 LB/MMBTU	BACT-PSD
				13.31	BOILER, PICKLE LINE	Methane	0.0022 LB/MMBTU	BACT-PSD
				13.31	BOILER, PICKLE LINE	Nitrous Oxide (N2O)	0.0002 LB/MMBTU	BACT-PSD
				13.31	BOILER, ANNEALING PICKLE LINE	Particulate matter, filterable (FPM)	0.0019 LB/MMBTU	BACT-PSD
				13.31	BOILER, ANNEALING PICKLE LINE	Particulate matter, total < 10 µ (TPM10)	0.0019 LB/MMBTU	BACT-PSD
				13.31	BOILER, ANNEALING PICKLE LINE	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.0019 LB/MMBTU	BACT-PSD
				13.31	BOILER, ANNEALING PICKLE LINE	Visible Emissions (VE)	5 %	BACT-PSD
				13.31	BOILER, ANNEALING PICKLE LINE	Sulfur Dioxide (SO2)	0.0006 LB/MMBTU	BACT-PSD
				13.31	BOILER, ANNEALING PICKLE LINE	Volatile Organic Compounds (VOC)	0.0054 LB/MMBTU	BACT-PSD
				13.31	BOILER, ANNEALING PICKLE LINE	Carbon Monoxide	0.0824 LB/MMBTU	BACT-PSD
				13.31	BOILER, ANNEALING PICKLE LINE	Nitrogen Oxides (NOx)	0.035 LB/MMBTU	BACT-PSD
				13.31	BOILER, ANNEALING PICKLE LINE	Carbon Dioxide	117 LB/MMBTU	BACT-PSD
				13.31	BOILER, ANNEALING PICKLE LINE	Methane	0.0022 LB/MMBTU	BACT-PSD
				13.31	BOILER, ANNEALING PICKLE LINE	Nitrous Oxide (N2O)	0.0002 LB/MMBTU	BACT-PSD
				13.31	BOILERS SN-26 AND SN-27, GALVANIZING LINE	Particulate matter, filterable (FPM)	0.0007 LB/MMBTU	BACT-PSD
				13.31	BOILERS SN-26 AND SN-27, GALVANIZING LINE	Particulate matter, total < 10 µ (TPM10)	0.0007 LB/MMBTU	BACT-PSD
				13.31	BOILERS SN-26 AND SN-27, GALVANIZING LINE	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.0007 LB/MMBTU	BACT-PSD
				13.31	BOILERS SN-26 AND SN-27, GALVANIZING LINE	Visible Emissions (VE)	5 %	BACT-PSD
				13.31	BOILERS SN-26 AND SN-27, GALVANIZING LINE	Sulfur Dioxide (SO2)	0.0006 LB/MMBTU	BACT-PSD
				13.31	BOILERS SN-26 AND SN-27, GALVANIZING LINE	Volatile Organic Compounds (VOC)	0.0054 LB/MMBTU	BACT-PSD
				13.31	BOILERS SN-26 AND SN-27, GALVANIZING LINE	Carbon Monoxide	0.0824 LB/MMBTU	BACT-PSD
				13.31	BOILERS SN-26 AND SN-27, GALVANIZING LINE	Nitrogen Oxides (NOx)	0.035 LB/MMBTU	BACT-PSD
				13.31	BOILERS SN-26 AND SN-27, GALVANIZING LINE	Carbon Dioxide	117 LB/MMBTU	BACT-PSD
				13.31	BOILERS SN-26 AND SN-27, GALVANIZING LINE	Methane	0.0022 LB/MMBTU	BACT-PSD
				13.31	BOILERS SN-26 AND SN-27, GALVANIZING LINE	Nitrous Oxide (N2O)	0.0002 LB/MMBTU	BACT-PSD
*WA-0349	PSD-02-01, AMENDMENT 3	04/04/2013	HANFORD	13.22	steam generating boiler	Particulate matter, total < 10 µ (TPM10)	13400000 GAL/YR (365 DAYS); 0.02 LB/MMBTU (24-HR)	BACT-PSD
				13.22	steam generating boiler	Nitrogen Oxides (NOx)	0.09 LB/MMBTU (24-HR); 4.53 LB/H (24-HR)	BACT-PSD
OH-0325	02-23003	04/03/2009	MAHONING RENEWABLE ENERGY	11.19	REFUSE-DERIVED FUEL BOILERS (2)	Volatile Organic Compounds (VOC)	122.6 T/YR; 14 LB/H	BACT-PSD
				11.19	REFUSE-DERIVED FUEL BOILERS (2)	Lead (Pb) / Lead Compounds	0.6 T/YR (FROM BOTH BOILERS TOGETHER); 140 UG/DSCM	BACT-PSD
				11.19	REFUSE-DERIVED FUEL BOILERS (2)	Sulfuric Acid (mist, vapors, etc)	24.4 T/YR (FROM BOTH BOILERS TOGETHER); 2 PPMVD	BACT-PSD
				11.19	REFUSE-DERIVED FUEL BOILERS (2)	Hydrochloric Acid	62.6 T/YR (FROM BOTH BOILERS TOGETHER); 25 PPMVD	BACT-PSD
				11.19	REFUSE-DERIVED FUEL BOILERS (2)	Hydrogen Fluoride	1.2 T/YR (FROM BOTH BOILERS TOGETHER); 0.5 PPM	Other Case-by-Case

RBLC Search Results: Boilers

RBLC ID	PERMIT	DATE	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				11.19	REFUSE-DERIVED FUEL BOILERS (2)	Carbon Monoxide	523 T/YR (FROM BOTH BOILERS TOGETHER); 150 PPMVD	BACT-PSD
				11.19	REFUSE-DERIVED FUEL BOILERS (2)	Particulate matter, filterable (FPM)	70 T/YR (FROM BOTH BOILERS TOGETHER); 20 MG/DSCM (CORRECTED TO 7% O2)	BACT-PSD
				11.19	REFUSE-DERIVED FUEL BOILERS (2)	Sulfur Dioxide (SO2)	163 T/YR (FROM BOTH BOILERS TOGETHER)	BACT-PSD
				11.19	REFUSE-DERIVED FUEL BOILERS (2)	Ammonium (NH4) Compounds	32.2 T/YR (FROM BOTH BOILERS TOGETHER); 15 PPM	Other Case-by-Case
				11.19	REFUSE-DERIVED FUEL BOILERS (2)	Cadmium / Cadmium Compounds	0.08 T/YR (FROM BOTH BOILERS TOGETHER); 10 UG/DSCM	Other Case-by-Case
				11.19	REFUSE-DERIVED FUEL BOILERS (2)	Mercury	0.14 T/YR (FROM BOTH BOILERS TOGETHER); 50 UG/DSCM	Other Case-by-Case
				11.19	REFUSE-DERIVED FUEL BOILERS (2)	Dioxins & Furans	0.0003 T/YR (FROM BOTH BOILERS TOGETHER); 13 NG/DSCM	BACT-PSD
				11.19	REFUSE-DERIVED FUEL BOILERS (2)	Visible Emissions (VE)	10 % OPACITY (AS A 6-MINUTE AVERAGE)	Other Case-by-Case
				11.19	REFUSE-DERIVED FUEL BOILERS (2)	Nitrogen Oxides (NOx)	584 T/YR (FROM BOTH BOILERS TOGETHER); 75 PPMVD	BACT-PSD
*WI-0276	14-DCF-189	04/02/2015	LOUISIANA-PACIFIC CORPORATION	13.12	B11 & B12 Boilers	Particulate matter, total (TPM)	6.1 LB/HR	BACT-PSD
				13.12	B11 & B12 Boilers	Particulate matter, total < 10 µ (TPM10)	6.1 LB/HR	BACT-PSD
				13.12	B11 & B12 Boilers	Visible Emissions (VE)	10 %	BACT-PSD
				13.12	B11 & B12 Boilers	Nitrogen Oxides (NOx)	8.9 LB/HR	BACT-PSD
				13.12	B11 & B12 Boilers	Volatile Organic Compounds (VOC)	0.5 LB/HR	BACT-PSD
				13.12	B11 & B12 Boilers	Carbon Monoxide	52.5 LB/HR	BACT-PSD
				13.12	B21 & B22 Boilers	Particulate matter, total (TPM)	6.1 LB/HR	BACT-PSD
				13.12	B21 & B22 Boilers	Particulate matter, total < 10 µ (TPM10)	6.1 LB/HR	BACT-PSD
				13.12	B21 & B22 Boilers	Visible Emissions (VE)	10 %	BACT-PSD
				13.12	B21 & B22 Boilers	Nitrogen Oxides (NOx)	16.2 LB/HR	BACT-PSD
				13.12	B21 & B22 Boilers	Volatile Organic Compounds (VOC)	0.62 LB/HR	BACT-PSD
				13.12	B21 & B22 Boilers	Carbon Monoxide	52.5 LB/HR	BACT-PSD
*WI-0289	18-MBH-162	04/01/2019	GEORGIA-PACIFIC CONSUMER PRODUCTS LLC	13.31	B98 & B99 Natural Gas Fired Temporary Boilers	Volatile Organic Compounds (VOC)	0.0055 LB/MMBTU	BACT-PSD
*WI-0292	19-DMM-001	04/01/2019	GREEN BAY PACKAGING INC. â€“MILL DIVISION	11.32	B34 & B35 Natural Gas/Biogasâ€"Fired Boilers	Carbon Dioxide Equivalent (CO2e)	160 LB/1000 LB STEAM (12 MONTH PERIOD)	BACT-PSD
				11.32	B34 & B35 Natural Gas/Biogasâ€"Fired Boilers	Volatile Organic Compounds (VOC)	0.0055 LB/MMBTU	BACT-PSD
PA-0288	55-00001E	04/01/2013	SUNBURY GENERATION LP/SUNBURY SES	11.31	AUXILIARY BOILER (REPOWER)	Nitrogen Oxides (NOx)	0.036 LB/MMBTU; 7.6 T/YR (ANY 12 CONSECUTIVE MONTH PERIOD)	OTHER CASE-BY-CASE
				11.31	AUXILIARY BOILER (REPOWER)	Carbon Monoxide	0.074 LB/MMBTU; 15.7 T/YR (ANY 12 CONSECUTIVE MONTH PERIOD)	OTHER CASE-BY-CASE
				11.31	AUXILIARY BOILER (REPOWER)	Volatile Organic Compounds (VOC)	0.005 LB/MMBTU; 1.1 T/YR (IN ANY 12 CONSECUTIVE MONTH PERIOD)	OTHER CASE-BY-CASE
				11.31	AUXILIARY BOILER (REPOWER)	Sulfur Oxides (SOx)	0.003 LB/MMBTU; 0.6 T/YR (IN ANY 12 CONSECUTIVE MONTH PERIOD)	OTHER CASE-BY-CASE
				11.31	AUXILIARY BOILER (REPOWER)	Particulate matter, total (TPM)	0.008 LB/MMBTU; 1.58 T/YR (IN ANY 12 CONSECUTIVE MONTH PERIOD)	OTHER CASE-BY-CASE
OH-0359	P0115137	03/31/2014	DTE MARIETTA	13.31	Backup Boilers (B001, B002)	Carbon Dioxide Equivalent (CO2e)	49494 T/YR	BACT-PSD
OK-0161	2011-228-C(M-2)PSD	03/31/2014	PSO SOUTHWESTERN POWER STA	11.31	Boiler #3	Carbon Monoxide	0.465 LB/MMBTU (30-DAY AVG)	BACT-PSD
NY-0116	5-4140-00189/00003	03/29/2013	FAB 8, LUTHER FOREST TECHNOLOGY CAMPUS	13.31	Boilers - NG	Carbon Dioxide	118 LB/MMBTU (12 MO)	BACT-PSD
				13.9	Boilers - NG and ULSD	Carbon Dioxide	160 LB/MMBTU (12 MO)	BACT-PSD
*WV-0029	R14-0036	03/27/2018	HARRISON COUNTY POWER PLANT	13.31	Auxiliary Boiler	Carbon Monoxide	2.88 LB/HR; 6.58 TONS/YEAR	BACT-PSD
				13.31	Auxiliary Boiler	Nitrogen Oxides (NOx)	0.86 LB/HR; 1.96 TONS/YEAR	BACT-PSD
				13.31	Auxiliary Boiler	Particulate matter, total (TPM)	0.6 LB/HR; 1.38 TONS/YEAR	BACT-PSD
				13.31	Auxiliary Boiler	Volatile Organic Compounds (VOC)	0.62 LB/HR; 1.42 TONS/YEAR	BACT-PSD
				13.31	Auxiliary Boiler	Sulfuric Acid (mist, vapors, etc)	0.0132 LB/HR; 0.03 TONS/YEAR	BACT-PSD
				13.31	Auxiliary Boiler	Carbon Dioxide Equivalent (CO2e)	9107 LB/HR; 20837 TONS/YEAR	BACT-PSD
*IN-0228	127-33924-00094	03/27/2014	JET CORR, INC	11.31	NATURAL GAS FIRED BOILER E028	Carbon Dioxide Equivalent (CO2e)	0	
LA-0272	PSD-LA-768	03/27/2013	AMMONIA PRODUCTION FACILITY	12.31	COMMISSIONING BOILERS 1 & 2 (CB-1 & CB-2)	Nitrogen Oxides (NOx)	11.92 LB/H (HOURLY MAXIMUM); 21.86 T/YR (ANNUAL MAXIMUM)	BACT-PSD
				12.31	COMMISSIONING BOILERS 1 & 2 (CB-1 & CB-2)	Particulate matter, total < 10 µ (TPM10)	1.94 LB/H (HOURLY MAXIMUM); 3.57 T/YR (ANNUAL MAXIMUM)	BACT-PSD
				12.31	COMMISSIONING BOILERS 1 & 2 (CB-1 & CB-2)	Particulate matter, total < 2.5 Âµ (TPM2.5)	1.94 LB/H (HOURLY MAXIMUM); 3.57 T/YR (ANNUAL MAXIMUM)	BACT-PSD
				12.31	COMMISSIONING BOILERS 1 & 2 (CB-1 & CB-2)	Carbon Monoxide	10.87 LB/H (HOURLY MAXIMUM); 19.93 T/YR (ANNUAL MAXIMUM)	BACT-PSD
				12.31	COMMISSIONING BOILERS 1 & 2 (CB-1 & CB-2)	Volatile Organic Compounds (VOC)	1.41 LB/H (HOURLY MAXIMUM); 2.58 T/YR (ANNUAL MAXIMUM)	BACT-PSD
				12.31	COMMISSIONING BOILERS 1 & 2 (CB-1 & CB-2)	Carbon Dioxide Equivalent (CO2e)	55986 TPY (ANNUAL MAXIMUM)	BACT-PSD
*AK-0086	AQ0083CPT07	03/26/2021	KENAI NITROGEN OPERATIONS	12.31	Three (3) Package Boilers	Carbon Dioxide Equivalent (CO2e)	60.2 TON/MMSCF (THREE-HOUR AVERAGE); 376000 TPY (COMBINED FOR ALL THREE BOILERS (YEARLY))	BACT-PSD
				12.31	Three (3) Package Boilers	Carbon Monoxide	50 PPMV AT 15% O2 (THREE-HOUR AVERAGE)	BACT-PSD
				12.31	Three (3) Package Boilers	Volatile Organic Compounds (VOC)	0.0054 LB/MMBTU (THREE-HOUR AVERAGE)	BACT-PSD
				12.31	Three (3) Package Boilers	Nitrogen Oxides (NOx)	0.01 LB/MMBTU (THIRTY-DAY AVERAGE)	BACT-PSD

RBLC Search Results: Boilers

RBLC ID	PERMIT	DATE	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				12.31	Three (3) Package Boilers	Particulate matter, total (TPM)	0.0075 LB/MMBTU (THREE-HOUR AVERAGE)	BACT-PSD
				12.31	Three (3) Package Boilers	Particulate matter, total < 10 µ (TPM10)	0.0075 LB/MMBTU (THREE-HOUR AVERAGE)	BACT-PSD
				12.31	Three (3) Package Boilers	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.0075 LB/MMBTU (THREE-HOUR AVERAGE)	BACT-PSD
*NE-0059	CP14-007	03/25/2015	AGP SOY	12.31	Boiler #1	Particulate matter, total < 10 µ (TPM10)	0.0074 LB/MMBTU (3-HOUR OR TEST METHOD AVERAGE); 0.024 LB/MMBTU (3-HOUR OR TEST METHOD AVERAGE)	BACT-PSD
				12.31	Boiler #1	Volatile Organic Compounds (VOC)	0.0054 LB/MMBTU (3-HOUR OR TEST METHOD AVERAGE)	BACT-PSD
				12.31	Boiler #2	Particulate matter, total < 10 µ (TPM10)	0.0074 LB/MMBTU (3-HOUR OR TEST METHOD AVERAGE); 0.024 LB/MMBTU (3-HOUR OR TEST METHOD AVERAGE)	BACT-PSD
				12.31	Boiler #2	Volatile Organic Compounds (VOC)	0.0054 LB/MMBTU (3-HOUR OR TEST METHOD AVERAGE)	BACT-PSD
AL-0286	503-0095-X026	03/25/2010	MOUNT VERNON MILL	81.29	Boilers (S37-39)	Particulate matter, filterable (FPM)	0.0076 LB/MMBTU; 0.53 LB/H	OTHER CASE-BY-CASE
				81.29	Boilers (S37-39)	Nitrogen Oxides (NOx)	0.035 LB/MMBTU; 2.45 LB/H	BACT-PSD
				81.29	Boilers (S37-39)	Carbon Monoxide	0.04 LB/MMBTU; 2.8 LB/H	BACT-PSD
				81.29	Boilers (S37-39)	Volatile Organic Compounds (VOC)	0.0055 LB/MMBTU; 0.39 LB/H	BACT-PSD
				81.29	Boilers (S37-39)	Sulfur Dioxide (SO2)	0.0006 LB/MMBTU; 0.04 LB/H	BACT-PSD
AL-0300	503-0106-X019	03/25/2010	THYSSENKRUPP STAINLESS USA, LLC	81.29	3 NAtural Gas-Fired Boilers w/LNB (026-L028)	Nitrogen Oxides (NOx)	0.035 LB/MMBTU; 1 LB/H	BACT-PSD
				81.29	3 NAtural Gas-Fired Boilers w/LNB (026-L028)	Carbon Monoxide	0.04 LB/MMBTU; 1.14 LB/H	BACT-PSD
				81.29	3 NAtural Gas-Fired Boilers w/LNB (026-L028)	Volatile Organic Compounds (VOC)	0.0055 LB/MMBTU; 0.157 LB/H	BACT-PSD
				81.29	3 NAtural Gas-Fired Boilers w/LNB (026-L028)	Particulate matter, filterable (FPM)	0.0076 LB/MMBTU; 0.217 LB/H	BACT-PSD
				81.29	3 NAtural Gas-Fired Boilers w/LNB (026-L028)	Sulfur Dioxide (SO2)	0.0006 LB/MMBTU; 0.0172 LB/H	BACT-PSD
MI-0426	185-15A	03/24/2017	DTE GAS COMPANY - MILFORD COMPRESSOR STATION	13.31	FGAUXBOILERS (6 auxiliary boilers EUAUXBOIL2A, EUAUXBOIL3A, EUAUXBOIL2B, EUAUXBOIL3B, EUAUXBOIL2C, EUAUXBOIL3C)	Nitrogen Oxides (NOx)	20 PPM AT 3% O2 (EACH 3 MMBTU/H BOILER); 9 PPM AT 3% O2 (EACH 1 MMBTU/H BOILER)	BACT-PSD
				13.31	FGAUXBOILERS (6 auxiliary boilers EUAUXBOIL2A, EUAUXBOIL3A, EUAUXBOIL2B, EUAUXBOIL3B, EUAUXBOIL2C, EUAUXBOIL3C)	Carbon Monoxide	84 LB/MMSCF (EACH BOILER)	BACT-PSD
				13.31	FGAUXBOILERS (6 auxiliary boilers EUAUXBOIL2A, EUAUXBOIL3A, EUAUXBOIL2B, EUAUXBOIL3B, EUAUXBOIL2C, EUAUXBOIL3C)	Particulate matter, total < 10 µ (TPM10)	0.52 LB/MMSCF (EACH BOILER)	BACT-PSD
				13.31	FGAUXBOILERS (6 auxiliary boilers EUAUXBOIL2A, EUAUXBOIL3A, EUAUXBOIL2B, EUAUXBOIL3B, EUAUXBOIL2C, EUAUXBOIL3C)	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.52 LB/MMSCF (EACH BOILER)	BACT-PSD
				13.31	FGAUXBOILERS (6 auxiliary boilers EUAUXBOIL2A, EUAUXBOIL3A, EUAUXBOIL2B, EUAUXBOIL3B, EUAUXBOIL2C, EUAUXBOIL3C)	Carbon Dioxide Equivalent (CO2e)	7324 T/YR (COMBINED FOR ALL BOILERS)	BACT-PSD
IN-0263	129-36943-00059	03/23/2017	MIDWEST FERTILIZER COMPANY LLC	12.31	NATURAL GAS AUXILIARY BOILERS (EU-012A, EU-012B, EU-012C)	Particulate matter, total (TPM)	1.9 LB/MMCF EACH (3 HOUR AVERAGE)	BACT-PSD
				12.31	NATURAL GAS AUXILIARY BOILERS (EU-012A, EU-012B, EU-012C)	Particulate matter, total < 10 µ (TPM10)	7.6 LB/MMCF EACH (3 HOUR AVERAGE)	BACT-PSD
				12.31	NATURAL GAS AUXILIARY BOILERS (EU-012A, EU-012B, EU-012C)	Particulate matter, total < 2.5 Âµ (TPM2.5)	7.6 LB/MMCF EACH (3 HOUR AVERAGE)	BACT-PSD
				12.31	NATURAL GAS AUXILIARY BOILERS (EU-012A, EU-012B, EU-012C)	Nitrogen Oxides (NOx)	20.4 LB/MMCF EACH (3 HOUR AVERAGE); 1877.39 MMCF/12 MONTH EACH (ROLLING AVERAGE)	BACT-PSD
				12.31	NATURAL GAS AUXILIARY BOILERS (EU-012A, EU-012B, EU-012C)	Carbon Monoxide	37.22 LB/MMCF EACH (3 HOUR AVERAGE); 1877.39 MMCF/12 MONTH EACH (ROLLING AVERAGE)	BACT-PSD
				12.31	NATURAL GAS AUXILIARY BOILERS (EU-012A, EU-012B, EU-012C)	Volatile Organic Compounds (VOC)	5.5 LB/MMCF EACH (3 HOUR AVERAGE); 1877.39 MMCF/12 MONTH EACH (ROLLING AVERAGE)	BACT-PSD
				12.31	NATURAL GAS AUXILIARY BOILERS (EU-012A, EU-012B, EU-012C)	Carbon Dioxide	59.61 TON/MMCF EACH (3 HOUR AVERAGE); 1877.39 MMCF/12 MONTH EACH (ROLLING AVERAGE)	BACT-PSD
TX-0594	PSDTX50M2 & 6029	03/23/2011	TOLK STATION POWER PLANT	11.11	Boiler	Carbon Monoxide	0.34 LB/MMBTU	OTHER CASE-BY-CASE
AL-0250	102-0001	03/23/2010	BOISE WHITE PAPER	11.12	COMBINATION BOILER	Nitrogen Oxides (NOx)	0.3 LB/MMBTU (3 H); 130.5 LB/H (3 H)	BACT-PSD
				11.12	COMBINATION BOILER	Volatile Organic Compounds (VOC)	0.03 LB/MMBTU AS C (3 H); 13.05 LB/H AS C (3 H)	BACT-PSD
LA-0307	PSD-LA-792	03/21/2016	MAGNOLIA LNG FACILITY	12.31	Auxiliary boilers	Carbon Dioxide Equivalent (CO2e)	0	BACT-PSD
				12.31	Auxiliary boilers	Particulate matter, total < 10 µ (TPM10)	0	BACT-PSD
				12.31	Auxiliary boilers	Particulate matter, total < 2.5 Âµ (TPM2.5)	0	BACT-PSD

RBLC Search Results: Boilers

RBLC ID	PERMIT	DATE	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				12.31	Auxiliary boilers	Nitrogen Oxides (NOx)	0	BACT-PSD
				12.31	Auxiliary boilers	Carbon Monoxide	0	BACT-PSD
				12.31	Auxiliary boilers	Volatile Organic Compounds (VOC)	0	BACT-PSD
*IA-0117	20-A-288-P	03/17/2021	SHELL ROCK SOY PROCESSING	13.31	Natural Gas Boiler A	Particulate matter, total (TPM)	0.026 LB/HR (PM, PM10 AND PM2.5) (OPACITY)	BACT-PSD
				13.31	Natural Gas Boiler B	Particulate matter, total (TPM)	0.26 LB/HR (PM, PM10 AND PM2.5) (OPACITY)	BACT-PSD
*TX-0915	160538, PSDTX1528, GHGPSDTX20	03/17/2021	UNIT 5	16.11	TURBINE-AUXILLARY BOILER	Volatile Organic Compounds (VOC)	0.0054 LB/MMBTU	BACT-PSD
				16.11	TURBINE-AUXILLARY BOILER	Carbon Monoxide	0.037 LB/MMBTU	BACT-PSD
				16.11	TURBINE-AUXILLARY BOILER	Particulate matter, filterable (FPM)	7.6 LB/MMBTU	BACT-PSD
				16.11	TURBINE-AUXILLARY BOILER	Particulate matter, total < 10 µ (TPM10)	7.6 LB/MMBTU	BACT-PSD
				16.11	TURBINE-AUXILLARY BOILER	Particulate matter, total < 2.5 µ (TPM2.5)	7.6 LB/MMBTU	BACT-PSD
				16.11	TURBINE-AUXILLARY BOILER	Carbon Dioxide Equivalent (CO2e)	0	BACT-PSD
DC-0009	6372-A1	03/15/2012	BLUE PLAINS ADVANCED WASTEWATER TREATEMENT PL	13.32	Auxiliary Boiler	Nitrogen Oxides (NOx)	0.036 LB/MMBTU (HHV BASIS ON DIGESTER GAS); 0.038 LB/MMBTU (HHV BASIS ON NATURAL GAS)	LAER
VA-0321	52404	03/12/2013	BRUNSWICK COUNTY POWER STATION	13.31	AUXILIARY BOILER	Nitrogen Oxides (NOx)	9 PPMVD	BACT-PSD
				13.31	AUXILIARY BOILER	Sulfur Dioxide (SO2)	0.0011 LB/MMBTU	BACT-PSD
				13.31	AUXILIARY BOILER	Sulfuric Acid (mist, vapors, etc)	0.0086 LB/MMBTU	BACT-PSD
				13.31	AUXILIARY BOILER	Carbon Monoxide	50 PPMVD	BACT-PSD
				13.31	AUXILIARY BOILER	Particulate matter, total < 10 µ (TPM10)	0.007 LB/MMBTU	BACT-PSD
				13.31	AUXILIARY BOILER	Particulate matter, total < 2.5 µ (TPM2.5)	0.007 LB/MMBTU	BACT-PSD
				13.31	AUXILIARY BOILER	Volatile Organic Compounds (VOC)	0.005 LB/MMBTU	BACT-PSD
				13.31	AUXILIARY BOILER	Carbon Dioxide Equivalent (CO2e)	117 LB/MMBTU	BACT-PSD
				13.31	Auxiliary Boiler (30.6 mmBtu/hr)	Carbon Monoxide	50 PPMVD; 0.037 LB/MMBTU	BACT-PSD
CA-1191	SE 07-02	03/11/2010	VICTORVILLE 2 HYBRID POWER PROJECT	13.31	AUXILIARY BOILER	Carbon Monoxide	50 PPMVD (1-HR AVG, @3% O2)	BACT-PSD
				13.31	AUXILIARY BOILER	Nitrogen Oxides (NOx)	9 PPMVD (1-HR AVG, @3% O2)	BACT-PSD
				13.31	AUXILIARY BOILER	Particulate matter, total (TPM)	0.2 GRAINS PER 100 DSCF	BACT-PSD
				13.31	AUXILIARY BOILER	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.2 GRAINS PER 100 DSCF	BACT-PSD
NJ-0084	18068/BOP150001	03/10/2016	PSEG FOSSIL LLC SEWAREN GENERATING STATION	13.31	Auxiliary Boiler firing natural gas	Nitrogen Oxides (NOx)	0.8 LB/H (AV OF THREE ONE H STACK TESTS); 0.01 LB/MMBTU (AV OF THREE ONE H STACK TESTS)	LAER
				13.31	Auxiliary Boiler firing natural gas	Carbon Monoxide	2.88 LB/H (AV OF THREE ONE H STACK TESTS)	BACT-PSD
				13.31	Auxiliary Boiler firing natural gas	Volatile Organic Compounds (VOC)	0.32 LB/H (AV OF THREE ONE H STACK TESTS)	LAER
				13.31	Auxiliary Boiler firing natural gas	Particulate matter, filterable (FPM)	0.26 LB/H (AV OF THREE ONE HOUR STACK TESTS)	BACT-PSD
				13.31	Auxiliary Boiler firing natural gas	Particulate matter, total < 10 µ (TPM10)	0.4 LB/H (AV OF THREE ONE HOUR STACK TESTS)	BACT-PSD
				13.31	Auxiliary Boiler firing natural gas	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.4 LB/H (AV OF THREE ONE HOUR STACK TESTS)	BACT-PSD
				13.31	Auxiliary Boiler firing natural gas	Sulfur Dioxide (SO2)	0.12 LB/H	OTHER CASE-BY-CASE
				13.31	Auxiliary Boiler firing natural gas	Sulfuric Acid (mist, vapors, etc)	0.02 LB/H	BACT-PSD
FL-0356	0930117-001-AC	03/09/2016	OKEECHOBEE CLEAN ENERGY CENTER	13.31	Auxiliary Boiler, 99.8 MMBtu/hr	Carbon Monoxide	0.08 LB/MMBTU	BACT-PSD
				13.31	Auxiliary Boiler, 99.8 MMBtu/hr	Nitrogen Oxides (NOx)	0.05 LB/MMBTU	BACT-PSD
				13.31	Auxiliary Boiler, 99.8 MMBtu/hr	Particulate matter, total (TPM)	10 % OPACITY	BACT-PSD
				13.31	Auxiliary Boiler, 99.8 MMBtu/hr	Sulfur Dioxide (SO2)	2 GR. S/100 SCF GAS	BACT-PSD
				13.31	Auxiliary Boiler, 99.8 MMBtu/hr	Carbon Dioxide Equivalent (CO2e)	0	BACT-PSD
ND-0026	PTC12003	03/08/2012	M.R. YOUNG STATION	11.11	Cyclone Boilers, Unit 1	Nitrogen Oxides (NOx)	0.36 LB/MMBTU (30 DAY ROLLING AVERAGE); 2070.2 LB/H (24 HOUR AV DURING STARTUP)	BACT-PSD
				11.11	Cyclone Boilers, Unit 2	Nitrogen Oxides (NOx)	0.35 LB/MMBTU (30 DAY ROLLING AVERAGE); 3995.6 LB/H (24 HOUR AV DURING STARTUP)	BACT-PSD
OR-0050	26-0235	03/05/2014	TROUTDALE ENERGY CENTER, LLC	13.31	Auxiliary boiler	Nitrogen Oxides (NOx)	0.035 LB/MMBTU (3-HR BLOCK AVERAGE)	BACT-PSD
				13.31	Auxiliary boiler	Carbon Monoxide	0.04 LB/MMBTU (3-HR BLOCK AVERAGE)	BACT-PSD
				13.31	Auxiliary boiler	Volatile Organic Compounds (VOC)	0.005 LB/MMBTU (3-HR BLOCK AVERAGE)	BACT-PSD
				13.31	Auxiliary boiler	Sulfuric Acid (mist, vapors, etc)	0	BACT-PSD
				13.31	Auxiliary boiler	Particulate matter, total < 10 µ (TPM10)	0	BACT-PSD
				13.31	Auxiliary boiler	Carbon Dioxide Equivalent (CO2e)	117 LB CO2/MMBTU (3-HR BLOCK AVERAGE)	BACT-PSD
				13.31	Auxiliary boiler	Carbon Dioxide Equivalent (CO2e)	117 LB CO2/MMBTU (3-HR BLOCK AVERAGE)	BACT-PSD
WY-0066	CT-5873	03/04/2009	MEDICINE BOW IGL PLANT	13.39	AUXILIARY BOILER	Nitrogen Oxides (NOx)	0.05 LB/MMBTU (HOURLY); 3.2 LB/H (HOURLY)	BACT-PSD
				13.39	AUXILIARY BOILER	Carbon Monoxide	0.08 LB/MMBTU (HOURLY); 5.4 LB/H (HOURLY)	BACT-PSD
OK-0143	98-014-C(M-19)PSD	03/01/2012	TULSA REFINERY WEST	12.39	Natural Gas and Refinery Gas-Fired Boiler	Carbon Dioxide Equivalent (CO2e)	206 LB CO2E/1000 LB STEA (30-DAY ROLLING AVG)	BACT-PSD
LA-0204	PSD-LA-709(M-1)	02/27/2009	PLAQUEMINE PVC PLANT	12.39	BOILERS A & B (U-1 & U-2)	Particulate matter, total < 10 µ (TPM10)	0.005 LB/MMBTU (THREE ONE-HOUR TEST AVERAGE); 0.005 LB/MMBTU	BACT-PSD
				12.39	BOILERS A & B (U-1 & U-2)	Nitrogen Oxides (NOx)	0.04 LB/MMBTU (24-H ROLLING AVG BASED ON A 1-H AVG)	BACT-PSD
				12.39	BOILERS A & B (U-1 & U-2)	Carbon Monoxide	0.036 LB/MMBTU (THREE ONE-HOUR TEST AVERAGE)	BACT-PSD
				12.39	BOILERS C & D (U-3 & U-4)	Nitrogen Oxides (NOx)	0.012 LB/MMBTU (24-H ROLLING AV BASED ON A 1-H AV)	BACT-PSD
				12.39	BOILERS C & D (U-3 & U-4)	Carbon Monoxide	0.036 LB/MMBTU (THREE ONE-HOUR TEST AVERAGE)	BACT-PSD
				12.39	BOILERS C & D (U-3 & U-4)	Particulate matter, total < 10 µ (TPM10)	0.005 LB/MMBTU (THREE ONE-HOUR TEST AVERAGE)	BACT-PSD
NH-0015	TP-0014	02/27/2009	CONCORD STEAM CORPORATION	13.31	BOILER 3 (AUXILIARY)	Nitrogen Oxides (NOx)	0.032 LB/MMBTU (AVERAGE OF 3 1-HOUR TEST RUNS)	LAER

RBLC Search Results: Boilers

RBLC ID	PERMIT	DATE	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				11.12	BOILER #1	Nitrogen Oxides (NOx)	0.06 LB/MMBTU (30-DAY ROLLING AV); 18.3 LB/H (30-DAY ROLLING AV)	LAER
				13.31	BOILER 2 (AUXILIARY)	Nitrogen Oxides (NOx)	0.032 LB/MMBTU (AVERAGE OF 3 1-HOUR TEST RUNS)	LAER
DE-0020	AQM-003/00016	02/26/2010	VALERO DELAWARE CITY REFINERY	12.39	PACKAGE BOILERS (2004)	Nitrogen Oxides (NOx)	0.02 LB/MMBTU (3-HR AVERAGE); 24.9 T (12 MONTHS)	RACT
				13.31	PACKAGE BOILERS (2009)	Nitrogen Oxides (NOx)	0.015 LB/MMBTU	RACT
				13.31	PACKAGE BOILERS (2009)	Ammonia (NH3)	10 PPMVD @ 3% O2; 11.9 T (12 MONTHS)	RACT
				11.39	DCPP BOILER 1	Nitrogen Oxides (NOx)	0.015 LB/MMBTU (24-HOUR ROLLING AVERAGE); 40.6 (12-MONTHS)	BACT-PSD
				11.39	DCPP BOILER 3	Nitrogen Oxides (NOx)	0.015 LB/MMBTU (24-HOUR ROLLING AVERAGE); 40.6 T (12-MONTHS)	BACT-PSD
OH-0308	04-01447	02/23/2009	SUN COMPANY, INC., TOLEDO REFINERY	11.39	BOILER (2)	Particulate matter, total < 10 µ (TPM10)	2.53 LB/H; 11.1 T/YR (PER ROLLING 12 MONTHS)	BACT-PSD
				11.39	BOILER (2)	Sulfur Dioxide (SO2)	9.15 LB/H (FROM EACH OF 2 BOILERS); 40.06 T/YR (PER ROLLING 12-MO.FROM EACH OF 2 BOILERS)	N/A
				11.39	BOILER (2)	Volatile Organic Compounds (VOC)	1.83 LB/H; 8.03 T/YR (PER ROLLING 12 MONTHS)	N/A
				11.39	BOILER (2)	Visible Emissions (VE)	20 % OPACITY (AS A 6-MINUTE AVERAGE, EXCEPT PER RULE)	N/A
				11.39	BOILER (2)	Carbon Monoxide	28 LB/H; 122.64 T/YR (PER ROLLING 12 MONTHS)	BACT-PSD
				11.39	BOILER (2)	Nitrogen Oxides (NOx)	13.6 LB/H; 59.57 T/YR (PER ROLLING 12 MONTHS)	N/A
OK-0135	2008-100-C PSD	02/23/2009	PRYOR PLANT CHEMICAL	13.31	BOILERS #1 AND #2	Particulate matter, total (TPM)	0.6 LB/H	BACT-PSD
				13.31	BOILERS #1 AND #2	Sulfur Dioxide (SO2)	0.2 LB/H; 0.2 LB/MMBTU (STATE LIMIT)	BACT-PSD
				13.31	BOILERS #1 AND #2	Volatile Organic Compounds (VOC)	0.5 LB/H	BACT-PSD
				13.31	BOILERS #1 AND #2	Formaldehyde	0.1 LB/H	BACT-PSD
				13.31	BOILERS #1 AND #2	Nitrogen Oxides (NOx)	4 LB/H (3-H/168-H ROLLING CUMMULATIVE); 0.2 LB/MMBTU (STATE LIMIT)	BACT-PSD
				13.31	BOILERS #1 AND #2	Carbon Monoxide	6.6 LB/H (1-HOUR/8-HOUR)	BACT-PSD
				13.31	BOILERS #1 AND #2	Particulate matter, total < 10 µ (TPM10)	0.5 LB/H (24-HOUR)	BACT-PSD
AR-0149	0276-AOP-R8	02/22/2018	FLINT CREEK POWER PLANT	11.11	Boiler	Carbon Monoxide	0.6 LB/MMBTU (3-HOUR AVERAGE)	BACT-PSD
ND-0031	PTC12090	02/21/2013	DAKOTA PRAIRIE REFINERY	11.39	Distillate hydrotreater reboiler	Carbon Dioxide Equivalent (CO2e)	15733 TONS/YEAR (12-MONTH ROLLING SUM BASIS)	BACT-PSD
				11.39	Steam boiler #1	Carbon Dioxide Equivalent (CO2e)	12587 TONS/YEAR (12-MONTH ROLLING SUM BASIS)	BACT-PSD
				11.39	Steam boiler #2	Carbon Dioxide Equivalent (CO2e)	12587 TONS/YEAR (12-MONTH ROLLING SUM BASIS)	BACT-PSD
				11.39	Steam boiler #3	Carbon Dioxide Equivalent (CO2e)	12587 TONS/YEAR (12-MONTH ROLLING SUM BASIS)	BACT-PSD
WI-0268	18-DMM-145	02/19/2019	ND PAPER, INC. - BIRON DIVISION	12.31	Boiler B26 - Natural gas/biogas-fired boiler	Carbon Monoxide	0.044 LB/MMBTU	BACT-PSD
				12.31	Boiler B26 - Natural gas/biogas-fired boiler	Volatile Organic Compounds (VOC)	0.0054 LB/MMBTU	BACT-PSD
				12.31	Boiler B26 - Natural gas/biogas-fired boiler	Carbon Dioxide Equivalent (CO2e)	160 LB CO2E/1000LB STEAM (12-MONTH AVG)	BACT-PSD
IN-0239	157-36379-00050	02/18/2016	SUBARU OF INDIANA AUTOMOTIVE, INC.	19.6	BOILER	Volatile Organic Compounds (VOC)	0.005 LB/MMBTU	BACT-PSD
TX-0817	123117, PSDTX1460, GHGPSDTX13	02/17/2017	CHOCOLATE BAYOU STEAM GENERATING (CBSG) STATIO	12.39	INDUSTRIAL BOILERS	Volatile Organic Compounds (VOC)	0.54 LB/H	BACT-PSD
				12.39	INDUSTRIAL BOILERS	Carbon Dioxide Equivalent (CO2e)	0	BACT-PSD
AR-0138	1139-AOP-R14	02/17/2012	NUCOR CORPORATION - NUCOR STEEL, ARKANSAS	13.31	VTD BOILER	Sulfur Dioxide (SO2)	0.1 LB/H; 0.2 T/YR	BACT-PSD
				13.31	VTD BOILER	Carbon Monoxide	3.1 LB/H; 13.5 T/YR	BACT-PSD
*AR-0171	1139-AOP-R24	02/14/2019	NUCOR STEEL ARKANSAS	13.31	SN-142 Vacuum Degasser Boiler	Particulate matter, filterable (FPM)	0.0019 LB/MMBTU (3-HR)	BACT-PSD
				13.31	SN-142 Vacuum Degasser Boiler	Particulate matter, total < 10 µ (TPM10)	0.0076 LB/MMBTU (3-HR)	BACT-PSD
				13.31	SN-142 Vacuum Degasser Boiler	Carbon Dioxide Equivalent (CO2e)	121 LB/MMBTU	BACT-PSD
				13.31	SN-142 Vacuum Degasser Boiler	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.0076 LB/MMBTU (3-HR)	BACT-PSD
				13.31	SN-142 Vacuum Degasser Boiler	Visible Emissions (VE)	5 %	BACT-PSD
				13.31	SN-142 Vacuum Degasser Boiler	Nitrogen Oxides (NOx)	0.035 LB/MMBTU	BACT-PSD
				13.31	SN-142 Vacuum Degasser Boiler	Carbon Monoxide	0.075 LB/MMBTU	BACT-PSD
				13.31	SN-142 Vacuum Degasser Boiler	Volatile Organic Compounds (VOC)	0.0026 LB/HR	BACT-PSD
				13.31	SN-142 Vacuum Degasser Boiler	Sulfur Dioxide (SO2)	0.0006 LB/MMBTU	BACT-PSD
				13.31	SN-233 Galvanizing Line Boilers	Particulate matter, filterable (FPM)	0.0019 LB/MMBTU	BACT-PSD
				13.31	SN-233 Galvanizing Line Boilers	Particulate matter, total < 10 µ (TPM10)	0.0076 LB/MMBTU	BACT-PSD
				13.31	SN-233 Galvanizing Line Boilers	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.0076 LB/MMBTU	BACT-PSD
				13.31	SN-233 Galvanizing Line Boilers	Visible Emissions (VE)	5 %	BACT-PSD
				13.31	SN-233 Galvanizing Line Boilers	Nitrogen Oxides (NOx)	0.1 LB/MMBTU (3-HR)	BACT-PSD
				13.31	SN-233 Galvanizing Line Boilers	Carbon Monoxide	0.084 LB/MMBTU	BACT-PSD
				13.31	SN-233 Galvanizing Line Boilers	Volatile Organic Compounds (VOC)	0.0055 LB/MMBTU	BACT-PSD
				13.31	SN-233 Galvanizing Line Boilers	Sulfur Dioxide (SO2)	0.0006 LB/MMBTU	BACT-PSD
				13.31	SN-233 Galvanizing Line Boilers	Carbon Dioxide Equivalent (CO2e)	121 LB/MMBTU	BACT-PSD
PA-0306	65-00990 C/E	02/12/2016	TENASKA PA PARTNERS/WESTMORELAND GEN FAC	12.31	245 MMBtu natural gas fired Auxiliary boiler	Nitrogen Oxides (NOx)	0.011 LB/MMBTU; 9 PPMDV @ 15% O2	LAER

RBLC Search Results: Boilers

RBLC ID	PERMIT	DATE	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				12.31	245 MMBtu natural gas fired Auxiliary boiler	Carbon Monoxide	0.037 LB/MMBTU; 19.85 LB/HR	BACT-PSD
				12.31	245 MMBtu natural gas fired Auxiliary boiler	Particulate matter, total (TPM)	4 TPY	BACT-PSD
				12.31	245 MMBtu natural gas fired Auxiliary boiler	Particulate matter, total < 10 µ (TPM10)	0.0075 LB/MMBTU (3 HR AVG); 4 TPY	LAER
				12.31	245 MMBtu natural gas fired Auxiliary boiler	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.0075 LB/MMBTU (3 HR AVG); 4 TPY	LAER
				12.31	245 MMBtu natural gas fired Auxiliary boiler	Sulfuric Acid (mist, vapors, etc)	0.0049 TPY	BACT-PSD
				12.31	245 MMBtu natural gas fired Auxiliary boiler	Volatile Organic Compounds (VOC)	0.0054 LB/MMBTU; 2.89 TPY	LAER
OR-0051	206470	02/11/2014	SENECA SUSTAINABLE ENERGY, LLC	11.12	Wood-fired Boiler (B-1)	Particulate matter, total < 10 µ (TPM10)	0.01 LB/MMBTU (EVERY 5-YEAR EPA CTM-039)	LAER
MI-0403	25-07	02/11/2011	HOLLAND BOARD OF PUBLIC WORKS-JAMES DEYOUNG F	11.11	CFB boiler	Particulate matter, filterable (FPM)	0.01 LB/MMBTU (TEST PROTOCOL)	BACT-PSD
				11.11	CFB boiler	Particulate matter, total < 10 µ (TPM10)	0.025 LB/MMBTU (TEST PROTOCOL WILL SPECIFY AVG TIME.); 21.6 LB/H (TEST PROTOCOL WILL SPECIFY AVG TIME.)	BACT-PSD
				11.11	CFB boiler	Carbon Monoxide	0.15 LB/MMBTU (30D ROLLING AVG); 129.8 LB/H (24-H ROLLING AVG)	BACT-PSD
VT-0037	AP-11-015	02/10/2012	BEAVER WOOD ENERGY FAIR HAVEN	11.12	Main Boiler	Sulfur Dioxide (SO2)	0.02 LB/MMBTU (HOURLY AVERAGE)	BACT-PSD
				11.12	Main Boiler	Particulate matter, total (TPM)	0.019 LB/MMBTU (HOURLY AVERAGE)	BACT-PSD
				11.12	Main Boiler	Particulate matter, total < 10 µ (TPM10)	0.012 LB/MMBTU (HOURLY AVERAGE)	BACT-PSD
				11.12	Main Boiler	Volatile Organic Compounds (VOC)	0.005 LB/MMBTU (HOURLY AVERAGE)	BACT-PSD
				11.12	Main Boiler	Carbon Dioxide Equivalent (CO2e)	2993 LB/MW GROSS ELEC OUT (30-DAY ROLLING AVERAGE)	BACT-PSD
				11.12	Main Boiler	Nitrogen Oxides (NOx)	0.03 LB/MMBTU (12-MONTH ROLLING AVERAGE); 0.06 LB/MMBTU (HOURLY AVERAGE)	BACT-PSD
				11.12	Main Boiler	Carbon Monoxide	0.075 LB/MMBTU (24-HR ROLLING AVERAGE)	BACT-PSD
ID-0017	P-2008.0066	02/10/2009	POWER COUNTY ADVANCED ENERGY CENTER	12.31	250 MMBTU/H PACKAGE BOILER, SRC24	Particulate Matter (PM)	0.0052 LB/MMBTU; 1.3 LB/H	BACT-PSD
				12.31	250 MMBTU/H PACKAGE BOILER, SRC24	Particulate matter, total < 10 µ (TPM10)	0.0052 LB/MMBTU; 1.3 LB/H	BACT-PSD
				12.31	250 MMBTU/H PACKAGE BOILER, SRC24	Carbon Monoxide	0.074 LB/MMBTU; 18.5 LB/H	BACT-PSD
				12.31	250 MMBTU/H PACKAGE BOILER, SRC24	Nitrogen Oxides (NOx)	0.02 LB/MMBTU; 5 LB/H	BACT-PSD
				12.3	250 MMBTU/H STEAM SUPERHEATER BOILER, SRC31	Particulate Matter (PM)	0.0052 LB/MMBTU; 1.3 LB/H	BACT-PSD
				12.3	250 MMBTU/H STEAM SUPERHEATER BOILER, SRC31	Particulate matter, total < 10 µ (TPM10)	0.0052 LB/MMBTU; 1.3 LB/H	BACT-PSD
				12.3	250 MMBTU/H STEAM SUPERHEATER BOILER, SRC31	Carbon Monoxide	0.074 LB/MMBTU; 18.5 LB/H	BACT-PSD
				12.3	250 MMBTU/H STEAM SUPERHEATER BOILER, SRC31	Nitrogen Oxides (NOx)	0.02 LB/MMBTU; 5 LB/H	BACT-PSD
OK-0136	2007-042-C PSD	02/09/2009	PONCA CITY REFINERY	12.29	NH-1 NEW NAPTHA SPLITTER REBOILER	Nitrogen Oxides (NOx)	3.94 LB/H (365-DAY ROLLING AVERAGE); 17.3 T/YR (365-DAY ROLLING AVERAGE)	BACT-PSD
				12.29	NH-1 NEW NAPTHA SPLITTER REBOILER	Carbon Monoxide	5.25 LB/H (365-DAY ROLLING AVERAGE); 23 T/YR (365-DAY ROLLING AVERAGE)	BACT-PSD
OK-0137	2007-042-C PSD	02/09/2009	PONCA CITY REFINERY	13.31	TB-1 Leased Boiler No. 1	Nitrogen Oxides (NOx)	3.42 LB/H (365 DAY ROLLING AVERAGE); 15 T/YR (365 DAY ROLLING AVERAGE)	BACT-PSD
				13.31	TB-1 Leased Boiler No. 1	Carbon Monoxide	3.8 LB/H (365 DAY ROLLING AVERAGE); 16.6 T/YR (365 DAY ROLLING AVERAGE)	BACT-PSD
				13.31	TB-2 Leased Boiler No.2	Nitrogen Oxides (NOx)	3.42 LB/H (365 DAY ROLLING AVERAGE); 15 T/YR (365 DAY ROLLING AVERAGE)	BACT-PSD
AR-0156	0224-AOP-R21	02/08/2019	GREEN BAY PACKAGING - ARKANSAS KRAFT DIVISION	30.211	Recovery Boiler	Nitrogen Oxides (NOx)	80 LB/H; 313.1 T/YR	OTHER CASE-BY-CASE
TX-0853	148643, PSDTX1528, AND GHGPSD	02/08/2019	TEXAS CITY CHEMICAL PLANT	12.31	BOILERS	Particulate matter, total < 2.5 µ (TPM2.5)	1.51 LB/H	BACT-PSD
				12.31	BOILERS	Carbon Dioxide Equivalent (CO2e)	0	BACT-PSD
TX-0854	1867A AND PSDTX1032M1	02/08/2019	SID RICHARDSON CARBON BORGER PLANT	12.19	BOILERS	Particulate matter, total < 10 µ (TPM10)	0	BACT-PSD
				12.19	BOILERS	Particulate matter, total < 2.5 Âµ (TPM2.5)	0	BACT-PSD
*TX-0919	148643, PSDTX1528, GHGPSDTX17	02/08/2019	TEXAS CITY CHEMICAL PLANT	12.31	Boilers	Particulate matter, total < 2.5 µ (TPM2.5)	1.51 LB/HR	BACT-PSD
				12.31	Boilers	Carbon Dioxide Equivalent (CO2e)	273225 T/YR	BACT-PSD
SC-0113	0160-0023	02/08/2012	PYRAMAX CERAMICS, LLC	13.31	BOILERS	Nitrogen Oxides (NOx)	0	BACT-PSD
				13.31	BOILERS	Sulfur Dioxide (SO2)	0	BACT-PSD
				13.31	BOILERS	Carbon Monoxide	0	BACT-PSD
				13.31	BOILERS	Volatile Organic Compounds (VOC)	0	BACT-PSD
				13.31	BOILERS	Carbon Dioxide	0	BACT-PSD
TX-0708	101542 PSDTX1288	02/07/2013	LA PALOMA ENERGY CENTER	12.31	boiler	Carbon Monoxide	75 PPMVD (@3% O2, 3-HR ROLLING AVERAGE)	BACT-PSD
				12.31	boiler	Nitrogen Oxides (NOx)	0.02 LB/MMBTU (3-HR ROLLING AVERAGE)	BACT-PSD
				12.31	boiler	Volatile Organic Compounds (VOC)	0	BACT-PSD
				12.31	boiler	Particulate matter, total < 2.5 Âµ (TPM2.5)	0	BACT-PSD
TX-0876	PSDTX1546 AND GHGPSDTX186	02/06/2020	PORT ARTHUR ETHANE CRACKER UNIT	64.999	BOILERS	Nitrogen Oxides (NOx)	0.015 LB/MMBTU (HOURLY); 0.01 LB/MMBTU (ANNUAL)	BACT-PSD
				64.999	BOILERS	Volatile Organic Compounds (VOC)	0.0054 LB/MMBTU	BACT-PSD

RBLC Search Results: Boilers

RBLC ID	PERMIT	DATE	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				64.999	BOILERS	Carbon Monoxide	100 PPMVD (HOURLY); 50 PPMVD (ANNUAL)	BACT-PSD
				64.999	BOILERS	Carbon Dioxide Equivalent (CO2e)	0	BACT-PSD
				64.999	BOILERS	Particulate matter, total (TPM)	0.0075 LB/MMBTU	BACT-PSD
				64.999	BOILERS	Particulate matter, total < 10 µ (TPM10)	0.0075 LB/MMBTU	BACT-PSD
				64.999	BOILERS	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.0075 LB/MMBTU	BACT-PSD
OH-0379	P0125024	02/06/2019	PETMIN USA INCORPORATED	13.31	Startup boiler (B001)	Particulate matter, total < 10 µ (TPM10)	0.113 LB/H (SEE NOTES.); 0.49 T/YR (PER ROLLING 12 MONTH PERIOD. SEE NOTES.)	BACT-PSD
				13.31	Startup boiler (B001)	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.113 LB/H (SEE NOTES.); 0.49 T/YR (PER ROLLING 12 MONTH PERIOD. SEE NOTES.)	BACT-PSD
				13.31	Startup boiler (B001)	Carbon Dioxide Equivalent (CO2e)	1784 LB/H; 7814 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				13.31	Startup boiler (B001)	Nitrogen Oxides (NOx)	0.634 LB/H; 2.78 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
				13.31	Startup boiler (B001)	Visible Emissions (VE)	0	N/A
AZ-0055	AZ 08-01	02/06/2012	NAVAJO GENERATING STATION	11.11	PULVERIZED COAL FIRED BOILER	Nitrogen Oxides (NOx)	0.24 LB/MMBTU (30-DAY ROLLING AVG)	BACT-PSD
				11.11	PULVERIZED COAL FIRED BOILER	Carbon Monoxide	0.23 LB/MMBTU (30-DAY ROLLING AVG); 0.15 LB/MMBTU (12-MONTH ROLLING AVG)	BACT-PSD
				11.11	PULVERIZED COAL FIRED BOILER	Sulfur Dioxide (SO2)	0	BART
				11.11	PULVERIZED COAL FIRED BOILER	Nitrogen Oxides (NOx)	0.24 LB/MMBTU (30-DAY ROLLING AVG)	BACT-PSD
				11.11	PULVERIZED COAL FIRED BOILER	Carbon Monoxide	0.23 LB/MMBTU (30-DAY ROLLING AVG); 0.15 LB/MMBTU (12-MONTH ROLLING AVG)	BACT-PSD
				11.11	PULVERIZED COAL FIRED BOILER	Sulfur Dioxide (SO2)	0	BART
				11.11	PULVERIZED COAL FIRED BOILER	Nitrogen Oxides (NOx)	0.24 LB/MMBTU (30-DAY ROLLING AVG)	BACT-PSD
				11.11	PULVERIZED COAL FIRED BOILER	Sulfur Dioxide (SO2)	0	BART
				11.11	PULVERIZED COAL FIRED BOILER	Carbon Monoxide	0.23 LB/MMBTU (30-DAY ROLLING AVG); 0.15 LB/MMBTU (12-MONTH ROLLING AVG)	BACT-PSD
NY-0103	3-1326-00275/00009	02/03/2016	CRICKET VALLEY ENERGY CENTER	13.31	Auxiliary boiler	Volatile Organic Compounds (VOC)	0.0015 LB/MMBTU (1 H)	LAER
				13.31	Auxiliary boiler	Nitrogen Oxides (NOx)	0.0085 LB/MMBTU (1 H)	LAER
				13.31	Auxiliary boiler	Sulfur, Total Reduced (TRS)	0	BACT-PSD
				13.31	Auxiliary boiler	Sulfuric Acid (mist, vapors, etc)	1.1 10-4 LB/MMBTU (1 H)	BACT-PSD
				13.31	Auxiliary boiler	Particulate matter, filterable (FPM)	0.005 LB/MMBTU (1 H)	BACT-PSD
				13.31	Auxiliary boiler	Carbon Monoxide	0.0375 LB/MMBTU (1 H)	BACT-PSD
				13.31	Auxiliary boiler	Carbon Dioxide Equivalent (CO2e)	119 LB/MMBTU (12 MO)	BACT-PSD
LA-0247	PSD-LA-748	02/02/2011	BOGALUSA MILL	11.9	NO. 10C HOGGED FUEL BOILER (06)	Carbon Monoxide	948.41 LB/H (HOURLY MAXIMUM); 4154.04 T/YR (ANNUAL MAXIMUM)	BACT-PSD
*TN-0164	972969	02/01/2018	TVA - JOHNSONVILLE COGENERATION	12.31	Two Auxiliary Boilers	Particulate matter, total (TPM)	0.008 LB/MMBTU	BACT-PSD
				12.31	Two Auxiliary Boilers	Carbon Monoxide	0.084 LB/MMBTU	BACT-PSD
				12.31	Two Auxiliary Boilers	Nitrogen Oxides (NOx)	0.013 LB/MMBTU (30-DAY AVG EXCLUDING STARTUP & SHUTDOWN); 0.2 LB/MMBTU (30-DAY AVG, APPLIES AT ALL TIMES)	BACT-PSD
				12.31	Two Auxiliary Boilers	Carbon Dioxide Equivalent (CO2e)	117 LB/MMBTU (12-MONTH MOVING AVERAGE)	BACT-PSD
TX-0885	146824 AND N130M1	01/31/2020	METAL BEVERAGE CONTAINER OPERATIONS	19.6	Boiler <40 MMBtu/hr	Volatile Organic Compounds (VOC)	0	LAER
VA-0331	70225	01/31/2019	POSSUM POINT POWER STATION	11.21	one (1) combustion engineering oil-fired utility boiler	Nitrogen Oxides (NOx)	0.17 LBS/MMBTU (24 H ROLLING AV); 0.25 LBS/MMBTU (30 DAY ROLLING AV)	RACT
MA-0039	NE-12-022	01/30/2014	SALEM HARBOR STATION REDEVELOPMENT	13.31	Auxiliary Boiler	Carbon Monoxide	4.7 PPMVD@3% O2 (1 HR BLOCK AVG, DOES NOT APPLY DURING SS); 0.0035 LB/MMBTU (1 HR BLOCK AVG, DOES NOT APPLY DURING SS)	OTHER CASE-BY-CASE
				13.31	Auxiliary Boiler	Sulfur Dioxide (SO2)	0.9 PPMVD@3% O2 (1 HR BLOCK AVG, DOES NOT APPLY DURING SS); 0.0015 LB/MMBTU (1 HR BLOCK AVG, DOES NOT APPLY DURING SS)	OTHER CASE-BY-CASE
				13.31	Auxiliary Boiler	Volatile Organic Compounds (VOC)	11.8 PPMVD@3% O2 (1 HR BLOCK AVG, DOES NOT APPLY DURING SS); 0.005 LB/MMBTU (1 HR BLOCK AVG, DOES NOT APPLY DURING SS)	OTHER CASE-BY-CASE
				13.31	Auxiliary Boiler	Nitrogen Oxides (NOx)	0.011 LB/MMBTU (1 HR BLOCK AVG, DOES NOT APPLY DURING SS); 9 PPMVD@3% O2 (1 HR BLOCK AVG, DOES NOT APPLY DURING SS)	LAER
				13.31	Auxiliary Boiler	Particulate matter, total < 10 µ (TPM10)	0.005 LB/MMBTU (1 HR AVG, DOES NOT APPLY DURING SS); 0.4 LB/H (1 HR AVG, DOES NOT APPLY DURING SS)	BACT-PSD
				13.31	Auxiliary Boiler	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.005 LB/MMBTU (1 HR BLOCK AVG, DOES NOT APPLY DURING SS); 0.4 LB/H (1 HR BLOCK AVG, DOES NOT APPLY DURING SS)	BACT-PSD
				13.31	Auxiliary Boiler	Carbon Dioxide Equivalent (CO2e)	119 LB/MMBTU	BACT-PSD
				13.31	Auxiliary Boiler	Sulfuric Acid (mist, vapors, etc)	0.0009 LB/MMBTU (1 HR BLOCK AVG, DOES NOT APPLY DURING SS); 0.35 PPMVD @ 3% O2 (1 HR BLOCK AVG, DOES NOT APPLY DURING SS)	BACT-PSD
OK-0152	2005-271-C(M-5)PSD	01/30/2013	MUSKOGEE GENERATING STATION	11.11	COAL-FIRED BOILER	Nitrogen Oxides (NOx)	0.15 LB/MMBTU (30-DAY AVG)	BART
				11.11	COAL-FIRED BOILER	Carbon Monoxide	0.37 LB/MMBTU (30-DAY AVG)	N/A
LA-0233	PSD-LA-577(M-1)	01/30/2009	LAKE CHARLES COMPLEX	11.31	3(K-6)8 POWERHOUSE BOILER B-5A	Carbon Monoxide	41.04 LB/H	BACT-PSD
				11.31	3(K-6)9 POWERHOUSE BOILER B-5	Carbon Monoxide	41.04 LB/H	BACT-PSD
TN-0159	962212F	01/28/2009	ERACHEM COMILOG	13.12	WOOD-FIRED BOILER	Nitrogen Oxides (NOx)	0.25 LB/MMBTU (DAILY)	BACT-PSD
GA-0147	3295-163-0035-P-01-0	01/27/2012	PYRAMAX CERAMICS, LLC - KING'S M:U FACILITY	19.6	BOILERS	Carbon Dioxide Equivalent (CO2e)	5809 T/12-MO ROLLING AVG	BACT-PSD
				19.6	BOILERS	Nitrogen Oxides (NOx)	12 PPM @ 3% O2 (DRY STANDARD CONDITIONS)	BACT-PSD

RBLC Search Results: Boilers

RBLC ID	PERMIT	DATE	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
LA-0248	PSD-LA-751	01/27/2011	DIRECT REDUCTION IRON PLANT	11.31	DRI-109 - DRI Unit #1 Package Boiler Flue Stack	Particulate matter, total < 10 µ (TPM10)	2.38 LB/H; 8.64 T/YR	BACT-PSD
				11.31	DRI-109 - DRI Unit #1 Package Boiler Flue Stack	Carbon Monoxide	11.42 LB/H; 41.54 T/YR	BACT-PSD
				11.31	DRI-109 - DRI Unit #1 Package Boiler Flue Stack	Sulfur Dioxide (SO2)	0.09 LB/H; 0.33 T/YR	BACT-PSD
				11.31	DRI-109 - DRI Unit #1 Package Boiler Flue Stack	Nitrogen Oxides (NOx)	0.94 LB/H; 3.41 T/YR	BACT-PSD
				11.31	DRI-109 - DRI Unit #1 Package Boiler Flue Stack	Volatile Organic Compounds (VOC)	1.56 LB/H; 4.75 T/YR	BACT-PSD
				11.31	DRI-209 - DRI Unit #2 Package Boiler Flue Stack	Particulate matter, total < 10 µ (TPM10)	2.38 LB/H; 8.64 T/YR	BACT-PSD
				11.31	DRI-209 - DRI Unit #2 Package Boiler Flue Stack	Carbon Monoxide	11.42 LB/H; 41.54 T/YR	BACT-PSD
				11.31	DRI-209 - DRI Unit #2 Package Boiler Flue Stack	Sulfur Dioxide (SO2)	0.09 LB/H; 0.33 T/YR	BACT-PSD
				11.31	DRI-209 - DRI Unit #2 Package Boiler Flue Stack	Nitrogen Oxides (NOx)	0.94 LB/H; 3.41 T/YR	BACT-PSD
				11.31	DRI-209 - DRI Unit #2 Package Boiler Flue Stack	Volatile Organic Compounds (VOC)	1.19 LB/H; 4.75 T/YR	BACT-PSD
*PA-0316	18-00033A	01/26/2018	RENOVO ENERGY CENTER, LLC	13.31	Auxiliary Boiler	Nitrogen Oxides (NOx)	0.011 LB (MMBTU); 0.65 TPY	LAER
				13.31	Auxiliary Boiler	Carbon Monoxide	0.036 LB (MMBTU); 2.14 TPY	BACT-PSD
				13.31	Auxiliary Boiler	Volatile Organic Compounds (VOC)	0.005 LB (MMBTU); 0.3 TPY	N/A
				13.31	Auxiliary Boiler	Particulate matter, total < 10 µ (TPM10)	0.0019 LB (MMBTU); 0.11 TPY	BACT-PSD
LA-0234	PSD-LA-691(M-1)	01/26/2009	LAKE CHARLES COMPLEX - CAT GAS HYDRO	13.39	3(XXXIV)7-103 REBOILER B-103	Sulfur Dioxide (SO2)	3.1 LB/H	BACT-PSD
				13.39	3(XXXIV)7-203 REBOILER B-203	Sulfur Dioxide (SO2)	3.1 LB/H	BACT-PSD
CA-1189	ATC- 12949-01 (2)	01/24/2012	PETROROCK- TUNNELL LEASE	13.31	Boiler	Nitrogen Oxides (NOx)	20 PPMVD@3% O2 (40 MINUTES)	OTHER CASE-BY-CASE
AK-0082	AQ1201CPT03	01/23/2015	POINT THOMSON PRODUCTION FACILITY	13.22	Boilers and Heaters	Nitrogen Oxides (NOx)	20 LB/1,000 GAL	BACT-PSD
				13.22	Boilers and Heaters	Carbon Monoxide	5 LB/1,000 GAL	BACT-PSD
				13.22	Boilers and Heaters	Particulate matter, total < 10 µ (TPM10)	2.3 LB/1,000 GAL	BACT-PSD
				13.22	Boilers and Heaters	Particulate matter, total < 2.5 µ (TPM2.5)	1.55 LB/1,000 GAL	BACT-PSD
				13.22	Boilers and Heaters	Volatile Organic Compounds (VOC)	0.252 LB/1,000 GAL	BACT-PSD
				13.22	Boilers and Heaters	Carbon Dioxide Equivalent (CO2e)	45537 TONS/YEAR (COMBINED)	BACT-PSD
IL-0115	6050052	01/23/2015	WOOD RIVER REFINERY	11.39	BOILER 19	Carbon Monoxide	0.02 LB/MMBTU, HHV (30-DAY AVERAGE); 35.5 TONS/YEAR (12-MONTH RUNNING TOTAL)	BACT-PSD
				11.39	BOILER 19	Volatile Organic Compounds (VOC)	0.003 LB/MMBTU, HHV (30-DAY AVERAGE); 5.3 TONS/YEAR (12-MONTH RUNNING TOTAL)	LAER
				11.39	BOILER 19	Carbon Dioxide Equivalent (CO2e)	0.168 LB/LB STEAM PRODUCED (12-MONTH RUNNING TOTAL); 206000 TONS/YEAR (12-MONTH RUNNING TOTAL)	BACT-PSD
OK-0129	2007-115-C(M-1)PSD	01/23/2009	CHOUTEAU POWER PLANT	13.31	AUXILIARY BOILER	Nitrogen Oxides (NOx)	0.07 LB/MMBTU; 2.36 LB/H	BACT-PSD
				13.31	AUXILIARY BOILER	Carbon Monoxide	5.02 LB/H	N/A
				13.31	AUXILIARY BOILER	Volatile Organic Compounds (VOC)	0.54 LB/H	BACT-PSD
				13.31	AUXILIARY BOILER	Sulfur Dioxide (SO2)	0.03 LB/H	N/A
*OR-0054	34-2681-ST-01	01/22/2016	ALOHA CAMPUS	11.31	boilers		( ); ( )	
AL-0282	503-0047-X014	01/22/2014	LENZING FIBERS, INC.	13.31	Natural Gas Fired Boilers (3)	Volatile Organic Compounds (VOC)	0.0054 LB/MMBTU	BACT-PSD
				13.31	Natural Gas Fired Boilers (3)	Particulate matter, filterable (FPM)	0.0075	BACT-PSD
				13.31	Natural Gas Fired Boilers (3)	Carbon Dioxide Equivalent (CO2e)	112508 TPY (12 - MONTH ROLLING)	BACT-PSD
MO-0081	012009-008	01/22/2009	AMERICAN ENERGY PRODUCERS, INC.	70.35	Two 95 MMBtu/hr boilers	Nitrogen Oxides (NOx)	0	N/A
				70.35	Two 95 MMBtu/hr boilers	Particulate matter, total (TPM)	0.0236 LB/MMBTU (TEST METHOD AVERAGE); 0.0072 LB/MMBTU (TEST METHOD AVERAGE)	BACT-PSD
				70.35	Two 95 MMBtu/hr boilers	Particulate matter, total < 10 µ (TPM10)	0.0164 LB/MMBTU (TEST METHOD AVERAGE); 0.0072 LB/MMBTU (TEST METHOD AVERAGE)	BACT-PSD
				70.35	Two 95 MMBtu/hr boilers	Volatile Organic Compounds (VOC)	0.0164 LB/MMBTU (TEST METHOD AVERAGE); 0.0055 LB/MMBTU (TEST METHOD AVERAGE)	BACT-PSD
TX-0882	156458, PSDTX1562, AND GHGPSD	01/17/2020	SDSW STEEL MILL	81.29	Pickling Line Boilers	Nitrogen Oxides (NOx)	0.049 LB/MMBTU	BACT-PSD
				81.29	Pickling Line Boilers	Volatile Organic Compounds (VOC)	0.0054 LB/MMBTU	BACT-PSD
				81.29	Pickling Line Boilers	Carbon Monoxide	0.082 LB/MMBTU	BACT-PSD
				81.29	Pickling Line Boilers	Carbon Dioxide Equivalent (CO2e)	117.1 LB/MMBTU	BACT-PSD
				81.29	Pickling Line Boilers	Sulfur Dioxide (SO2)	0.0006 LB/MMBTU	BACT-PSD
				81.29	Pickling Line Boilers	Particulate matter, total (TPM)	0.0075 LB/MMBTU	BACT-PSD
				81.29	Pickling Line Boilers	Particulate matter, total < 10 µ (TPM10)	0.0075 LB/MMBTU	BACT-PSD
				81.29	Pickling Line Boilers	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.0075 LB/MMBTU	BACT-PSD
OH-0361	P0115063	01/17/2014	PCS NITROGEN OHIO, L.P.	61.012	Ammonia Unit - Boiler #3 (B509)	Carbon Dioxide Equivalent (CO2e)	117214 T/YR (PER ROLLING 12 MONTH PERIOD)	BACT-PSD
OK-0150	2011-228-C(M-1)PSD	01/17/2013	PSO SOUTHWESTERN POWER STATION	11.31	BOILER	Carbon Monoxide	0.15 LB/MMBTU (ANNUAL)	BACT-PSD
OK-0151	2010-338-C(M-1)PSD	01/17/2013	SOONER GENERATING STATION	11.11	COAL-FIRED BOILERS	Carbon Monoxide	0	BACT-PSD
				11.11	COAL-FIRED BOILERS	Nitrogen Oxides (NOx)	0.15 LB/MMBTU (30-DAY AVG)	BART
				11.11	COAL-FIRED BOILERS	Carbon Monoxide	0	BACT-PSD
TX-0635	PSD-TX-748-GHG	01/17/2013	CEDAR BAYOU PLANT, UNIT 1594	11.31	Very High Pressure (VHP) Boiler	Carbon Dioxide	127000 T/YR (365-DAY ROLLING AVERAGE)	BACT-PSD
				11.31	Very High Pressure (VHP) Boiler	Methane	6.5 T/YR (365-DAY ROLLING AVERAGE)	BACT-PSD
				11.31	Very High Pressure (VHP) Boiler	Nitrous Oxide (N2O)	1.1 T/YR (365-DAY ROLLING AVERAGE)	BACT-PSD
OK-0142	2006-303-C(M-3)PSD	01/17/2012	WAYNOKA NATURAL GAS PROCESSING PLANT	13.31	Commercial/Institutional Boilers/Furnaces (<100 MMBTUH)	Carbon Monoxide	0	BACT-PSD

RBLC Search Results: Boilers

RBLC ID	PERMIT	DATE	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
OH-0354	P0108853	01/15/2013	KRATON POLYMERS U.S. LLC	12.31	Two 249 MMBtu/H boilers	Carbon Monoxide	0.036 LB/MMBTU (BURNING DISTILLATE OIL W/ BELPRE NAPHTHA); 164 T/YR (FROM BOTH BOILERS)	BACT-PSD
				12.31	Two 249 MMBtu/H boilers	Nitrogen Oxides (NOx)	0.12 LB/MMBTU (BURNING DISTILLATE OIL); 392.83 T/YR	N/A
				12.31	Two 249 MMBtu/H boilers	Particulate matter, filterable (FPM)	0.03 LB/MMBTU (BURING WITH NG OR OIL W/ BELPRE NAPHTHA); 32.76 T/YR	N/A
				12.31	Two 249 MMBtu/H boilers	Sulfur Dioxide (SO2)	11.24 T/YR	N/A
				12.31	Two 249 MMBtu/H boilers	Carbon Dioxide Equivalent (CO2e)	357522 T/YR	N/A
				12.31	Two 249 MMBtu/H boilers	Particulate matter, total < 10 µ (TPM10)	15.96 T/YR	N/A
				12.31	Two 249 MMBtu/H boilers	Visible Emissions (VE)	0	N/A
TX-0556	PSDTX631M1 AMD 1388	01/15/2010	HARRINGTON STATION UNIT 1 BOILER	11.11	Unit 1 Boiler	Nitrogen Oxides (NOx)	1452 LB/H	BACT-PSD
				11.11	Unit 1 Boiler	Carbon Monoxide	0.33 LB/MMBTU (30-DAY)	BACT-PSD
IA-0101	78-A-019-P10	01/12/2012	OTTUMWA GENERATING STATION	11.11	Boiler #1	Carbon Dioxide Equivalent (CO2e)	8000325 T/YR (ROLLING 12 MONTH TOTAL)	BACT-PSD
				11.11	Boiler #1	Carbon Dioxide	2927.1 LB/MWH (NET) (30-DAY ROLLING AVERAGE)	BACT-PSD
TX-0881	49138, PSDTX1506M1, PSDTX768M	01/10/2020	EXXONMOBIL BEAUMONT REFINERY	12.39	BOILERS	Carbon Monoxide	100 PPMV (3% O2 HOURLY); 50 PPMV (3% O2 ANNUAL)	BACT-PSD
				12.39	BOILERS	Carbon Dioxide Equivalent (CO2e)	0.0054 LB/MMBTU	OTHER CASE-BY-CASE
				12.39	BOILERS	Sulfur Dioxide (SO2)	162 PPMV (H2S HOURLY); 60 PPMV (H2S ANNUAL)	BACT-PSD
				12.39	BOILERS	Particulate matter, total < 10 µ (TPM10)	0.0075 LB/MMBTU	BACT-PSD
				12.39	BOILERS	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.0075 LB/MMBTU	BACT-PSD
TX-0832	PSDTX768M1, PSDTX799, PSDTX80	01/09/2018	EXXONMOBIL BEAUMONT REFINERY	13.39	F-2001 Kero HDT Charge Heater and F-2002 Kero HDT Stripper Reboiler	Carbon Monoxide	0.074 LB/MMBTU (HOURLY)	BACT-PSD
				13.39	F-2001 Kero HDT Charge Heater and F-2002 Kero HDT Stripper Reboiler	Sulfur Dioxide (SO2)	162 PPMVD (HOURLY); 60 PPMVD (ANNUAL)	BACT-PSD
				13.39	F-2001 Kero HDT Charge Heater and F-2002 Kero HDT Stripper Reboiler	Particulate matter, filterable (FPM)	0.67 LB/HR	BACT-PSD
				13.39	F-2001 Kero HDT Charge Heater and F-2002 Kero HDT Stripper Reboiler	Particulate matter, total < 10 µ (TPM10)	0.67 LB/H	BACT-PSD
				13.39	F-2001 Kero HDT Charge Heater and F-2002 Kero HDT Stripper Reboiler	Particulate matter, total < 2.5 µ (TPM2.5)	0.67 LB/H	BACT-PSD
				13.39	F-2001 Kero HDT Charge Heater and F-2002 Kero HDT Stripper Reboiler	Sulfuric Acid (mist, vapors, etc)	0.18 LB/H	BACT-PSD
				13.39	F-2001 Kero HDT Charge Heater and F-2002 Kero HDT Stripper Reboiler	Carbon Dioxide Equivalent (CO2e)	600 DEGREE F	BACT-PSD
				13.39	F-3001 Diesel DHDT Charge Heater and F-3002 Diesel DHDT Stripper Reboiler	Carbon Monoxide	0.074 LB/MMBTU (HOURLY)	BACT-PSD
				13.39	F-3001 Diesel DHDT Charge Heater and F-3002 Diesel DHDT Stripper Reboiler	Sulfur Dioxide (SO2)	162 PPMVD	BACT-PSD
				13.39	F-3001 Diesel DHDT Charge Heater and F-3002 Diesel DHDT Stripper Reboiler	Particulate matter, filterable (FPM)	0.49 LB/H	BACT-PSD
				13.39	F-3001 Diesel DHDT Charge Heater and F-3002 Diesel DHDT Stripper Reboiler	Particulate matter, total < 10 µ (TPM10)	0.49 LB/H	BACT-PSD
				13.39	F-3001 Diesel DHDT Charge Heater and F-3002 Diesel DHDT Stripper Reboiler	Particulate matter, total < 2.5 µ (TPM2.5)	0.49 LB/H	BACT-PSD
				13.39	F-3001 Diesel DHDT Charge Heater and F-3002 Diesel DHDT Stripper Reboiler	Sulfuric Acid (mist, vapors, etc)	0.13 LB/H	BACT-PSD
				13.39	F-3001 Diesel DHDT Charge Heater and F-3002 Diesel DHDT Stripper Reboiler	Carbon Dioxide Equivalent (CO2e)	600 DEGREE F	BACT-PSD
				13.39	F-3001 Diesel DHDT Charge Heater and F-3002 Diesel DHDT Stripper Reboiler	Particulate matter, total < 10 µ (TPM10)	0.49 LB/H	BACT-PSD
LA-0323	PSD-LA-890	01/09/2017	MONSANTO LULING PLANT	11.31	No. 9 Boiler - Natural Gas Fired	Particulate matter, total < 10 µ (TPM10)	0.0075 LB/MMBTU (ANNUAL AVERAGE)	BACT-PSD
				11.31	No. 9 Boiler - Natural Gas Fired	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.0075 LB/MMBTU (ANNUAL AVERAGE)	BACT-PSD
				11.31	No. 9 Boiler - Natural Gas Fired	Nitrogen Oxides (NOx)	0.035 LB/MMBTU (ANNUAL AVERAGE)	BACT-PSD
				11.31	No. 9 Boiler - Natural Gas Fired	Carbon Monoxide	0.045 LB/MMBTU (ANNUAL AVERAGE)	BACT-PSD
				11.31	No. 9 Boiler - Natural Gas Fired	Carbon Dioxide Equivalent (CO2e)	0.167 LB/LB (ANNUAL AVERAGE)	BACT-PSD
				11.31	No. 10 Boiler - Natural Gas Fired	Particulate matter, total < 10 µ (TPM10)	0.0075 LB/MMBTU (ANNUAL AVERAGE)	BACT-PSD
				11.31	No. 10 Boiler - Natural Gas Fired	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.0075 LB/MMBTU (ANNUAL AVERAGE)	BACT-PSD
				11.31	No. 10 Boiler - Natural Gas Fired	Nitrogen Oxides (NOx)	0.035 LB/MMBTU (ANNUAL AVERAGE)	BACT-PSD
				11.31	No. 10 Boiler - Natural Gas Fired	Carbon Monoxide	0.045 LB/MMBTU (ANNUAL AVERAGE)	BACT-PSD
				11.31	No. 10 Boiler - Natural Gas Fired	Carbon Dioxide Equivalent (CO2e)	0.167 LB/LB (ANNUAL AVERAGE)	BACT-PSD
TX-0877	18142 AND N278	01/08/2020	SWEENY REFINERY	13.31	Isostripper Reboiler (heater)	Volatile Organic Compounds (VOC)	0.0054 LB/MMBTU	LAER
OK-0164	2009-394-C(M-2)PSD	01/08/2015	MIDWEST CITY AIR DEPOT	13.31	Heaters/Boilers	Carbon Dioxide Equivalent (CO2e)	153716 TONS PER YEAR (TOTAL FOR ALL UNITS.)	BACT-PSD
				13.31	Heaters/Boilers	Volatile Organic Compounds (VOC)	7.1 TONS PER YEAR (TOTAL FOR ALL UNITS.)	BACT-PSD
TX-0553	PSDTX1184, PAL36, HAP38, 86779	01/08/2010	LINDALE RENEWABLE ENERGY	11.12	Wood fired boiler	Nitrogen Oxides (NOx)	0.15 LB/MMBTU (ROLLING 30-DAY AVG)	BACT-PSD
				11.12	Wood fired boiler	Carbon Monoxide	0.31 LB/MMBTU (ROLLING 30-DAY AVG)	BACT-PSD
				11.12	Wood fired boiler	Particulate matter, filterable (FPM)	0.02 LB/MMBTU (ROLLING 30-DAY AVG)	BACT-PSD
				11.12	Wood fired boiler	Sulfur Dioxide (SO2)	0.025 LB/MMBTU (ROLLING 30-DAY AVG)	BACT-PSD
				11.12	Wood fired boiler	Hydrochloric Acid	0.019 LB/MMBTU (ROLLING 30-DAY AVG)	BACT-PSD
*MI-0447	74-18A	01/07/2021	LBWL--ERICKSON STATION	13.31	EUAUXBOILER--nat gas fired auxiliary boiler	Nitrogen Oxides (NOx)	30 PPM (AT 3% O2; HOURLY)	BACT-PSD

RBLC Search Results: Boilers

RBLC ID	PERMIT	DATE	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				13.31	EUAUXBOILER--nat gas fired auxiliary boiler	Carbon Monoxide	50 PPM (AT 3% O2; HOURLY)	BACT-PSD
				13.31	EUAUXBOILER--nat gas fired auxiliary boiler	Particulate matter, total < 10 µ (TPM10)	0.74 LB/H (HOURLY)	BACT-PSD
				13.31	EUAUXBOILER--nat gas fired auxiliary boiler	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.4 LB/H (HOURLY)	BACT-PSD
				13.31	EUAUXBOILER--nat gas fired auxiliary boiler	Volatile Organic Compounds (VOC)	0.3 LB/H (HOURLY)	BACT-PSD
				13.31	EUAUXBOILER--nat gas fired auxiliary boiler	Carbon Dioxide Equivalent (CO2e)	25644 T/YR (12-MO ROLLING TIME PERIOD)	BACT-PSD
AL-0249	X001, X008, X043, X125	01/07/2010	EVONIK DEGUSSA CORPORATION	12.3	EXISTING HCN PRODUCTION UNIT - WASTE HEAT BOILER	Nitrogen Oxides (NOx)	59.1 LB/H; 243 PPM @ 3% 02	BACT-PSD
				12.3	EXISTING HCN PRODUCTION UNIT - WASTE HEAT BOILER	Particulate Matter (PM)	1.58 LB/H; 0.005 GR/DSCF	BACT-PSD
				12.3	EXISTING HCN PRODUCTION UNIT - WASTE HEAT BOILER	Particulate matter, total < 10 µ (TPM10)	1.58 LB/H; 0.005 GR/DSCF	BACT-PSD
				12.3	EXISTING HCN PRODUCTION UNIT - WASTE HEAT BOILER	Particulate matter, total < 2.5 µ (TPM2.5)	1.58 LB/H; 0.005 GR/DSCF	BACT-PSD
				12.3	EXISTING HCN PRODUCTION UNIT - WASTE HEAT BOILER	Visible Emissions (VE)	10 % OPACITY	BACT-PSD
				12.3	ANDRUSSOW HCN PRODUCTION UNIT - THERMAL OXIDIZER / WASTE HEAT BOILER	Particulate matter, total < 10 µ (TPM10)	0.36 LB/H; 0.0544 GR/DSCF	BACT-PSD
				12.3	ANDRUSSOW HCN PRODUCTION UNIT - THERMAL OXIDIZER / WASTE HEAT BOILER	Particulate matter, total < 2.5 µ (TPM2.5)	0.36 LB/H; 0.0544 GR/DSCF	BACT-PSD
				12.3	ANDRUSSOW HCN PRODUCTION UNIT - THERMAL OXIDIZER / WASTE HEAT BOILER	Visible Emissions (VE)	10 % OPACITY	BACT-PSD
				12.3	ANDRUSSOW HCN PRODUCTION UNIT - THERMAL OXIDIZER / WASTE HEAT BOILER	Nitrogen Oxides (NOx)	18.31 LB/H; 150 PPM @ 3% O2	BACT-PSD
				12.3	ANDRUSSOW HCN PRODUCTION UNIT - THERMAL OXIDIZER / WASTE HEAT BOILER	Particulate Matter (PM)	0.36 LB/H; 0.0544 GR/DSCF	BACT-PSD
LA-0364	PSD-LA-812	01/06/2020	FG LA COMPLEX	11.31	Boilers	Nitrogen Oxides (NOx)	0.01 LB/MMBTU (12-MONTH ROLLING AVERAGE)	BACT-PSD
				11.31	Boilers	Carbon Monoxide	0.037 LB/MMBTU	BACT-PSD
				11.31	Boilers	Volatile Organic Compounds (VOC)	0.0055 LB/MMBTU	BACT-PSD
				11.31	Boilers	Sulfur Dioxide (SO2)	0.69 LB/H	BACT-PSD
				11.31	Boilers	Particulate matter, total < 10 µ (TPM10)	6.81 LB/H	BACT-PSD
				11.31	Boilers	Particulate matter, total < 2.5 Âµ (TPM2.5)	6.81 LB/H	BACT-PSD
				11.31	Boilers	Carbon Dioxide Equivalent (CO2e)	615294 T/YR	BACT-PSD
				13.31	PR Waste Heat Boiler	Nitrogen Oxides (NOx)	14.41 LB/H (12-MONTH ROLLING AVERAGE)	BACT-PSD
				13.31	PR Waste Heat Boiler	Carbon Monoxide	26.21 LB/H	BACT-PSD
				13.31	PR Waste Heat Boiler	Volatile Organic Compounds (VOC)	13.37 LB/H	BACT-PSD
				13.31	PR Waste Heat Boiler	Sulfur Dioxide (SO2)	8.03 LB/H	BACT-PSD
				13.31	PR Waste Heat Boiler	Particulate matter, total < 10 µ (TPM10)	0.61 LB/H	BACT-PSD
				13.31	PR Waste Heat Boiler	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.61 LB/H	BACT-PSD
				13.31	PR Waste Heat Boiler	Carbon Dioxide Equivalent (CO2e)	455475 T/YR	BACT-PSD
				64.003	UT1 Boiler Natural Gas Vents	Volatile Organic Compounds (VOC)	0	BACT-PSD
				64.003	UT2 Turbine, Duct Burner, and Boiler Natural Gas Vents	Volatile Organic Compounds (VOC)	0	BACT-PSD
AK-0083	AQ0083CPT06	01/06/2015	KENAI NITROGEN OPERATIONS	12.31	Three (3) Package Boilers	Nitrogen Oxides (NOx)	0.01 LB/MMBTU (30-DAY AVERAGE)	BACT-PSD
				12.31	Three (3) Package Boilers	Carbon Monoxide	50 PPMV (3-HR AVG @ 3% O2)	BACT-PSD
				12.31	Three (3) Package Boilers	Volatile Organic Compounds (VOC)	0.0054 LB/MMBTU (3-HR AVG)	BACT-PSD
				12.31	Three (3) Package Boilers	Particulate matter, total (TPM)	0.0074 LB/MMBTU (3-HR AVG)	BACT-PSD
				12.31	Three (3) Package Boilers	Particulate matter, total < 10 µ (TPM10)	0.0074 LB/MMBTU (3-HR AVG)	BACT-PSD
				12.31	Three (3) Package Boilers	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.0074 LB/MMBTU (3-HR AVG)	BACT-PSD
				12.31	Three (3) Package Boilers	Carbon Dioxide Equivalent (CO2e)	59.61 TONS/MMCF (3-HR AVG); 376500 TONS/YEAR (COMBINED)	BACT-PSD
				13.31	Five (5) Waste Heat Boilers	Nitrogen Oxides (NOx)	7 PPMV (3-HR AVG @ 15 % O2)	BACT-PSD
				13.31	Five (5) Waste Heat Boilers	Carbon Monoxide	50 PPMV (3-HR AVG @ 15 % O2)	BACT-PSD
				13.31	Five (5) Waste Heat Boilers	Volatile Organic Compounds (VOC)	0.0054 LB/MMBTU (3-HR AVG)	BACT-PSD
				13.31	Five (5) Waste Heat Boilers	Particulate matter, total (TPM)	0.0074 LB/MMBTU (3-HR AVG)	BACT-PSD
				13.31	Five (5) Waste Heat Boilers	Particulate matter, total < 10 µ (TPM10)	0.0074 LB/MMBTU (3-HR AVG)	BACT-PSD
				13.31	Five (5) Waste Heat Boilers	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.0074 LB/MMBTU (3-HR AVG)	BACT-PSD
				13.31	Five (5) Waste Heat Boilers	Carbon Dioxide Equivalent (CO2e)	59.61 TONS/MMCF (3-HR AVG); 131405 TONS/YEAR (COMBINED)	BACT-PSD
TX-0814	19778 AND GHGPSDTX155	01/05/2017	AMMONIA AND UREA PLANT	12.31	Package Boiler 1	Carbon Dioxide Equivalent (CO2e)	123059 T/YR	BACT-PSD
LA-0346	PSD-LA-820	01/04/2018	GULF COAST METHANOL COMPLEX	11.31	Auxiliary Boiler	Particulate matter, total < 10 µ (TPM10)	0	BACT-PSD
				11.31	Auxiliary Boiler	Particulate matter, total < 2.5 Âµ (TPM2.5)	0	BACT-PSD
				11.31	Auxiliary Boiler	Carbon Monoxide	0	BACT-PSD
				11.31	Auxiliary Boiler	Volatile Organic Compounds (VOC)	0	BACT-PSD

RBLC Search Results: Boilers

RBLC ID	PERMIT	DATE	FACILITY NAME	PROCESS CODE	PROCESS	POLLUTANT/NOTE	LIMIT/NOTE	BASIS
				11.31	Auxiliary Boiler	Nitrogen Oxides (NOx)	0	BACT-PSD
				11.31	Inline Boilers (4)	Particulate matter, total < 10 µ (TPM10)	0.0075 LB/MM BTU	BACT-PSD
				11.31	Inline Boilers (4)	Particulate matter, total < 2.5 Âµ (TPM2.5)	0.0075 LB/MM BTU	BACT-PSD
				11.31	Inline Boilers (4)	Nitrous Oxide (N2O)	0.01 LB/MM BTU (NORMAL OPERATION)	BACT-PSD
				11.31	Inline Boilers (4)	Carbon Monoxide	0.008 LB/MM BTU	BACT-PSD
				11.31	Inline Boilers (4)	Volatile Organic Compounds (VOC)	0.002 LB/MM BTU	BACT-PSD
MI-0423	75-16	01/04/2017	INDECK NILES, LLC	12.31	EUAUXBOILER (Auxiliary Boiler)	Carbon Monoxide	0.04 LB/MMBTU (TEST PROTOCOL WILL SPECIFY AVG TIME)	BACT-PSD
				12.31	EUAUXBOILER (Auxiliary Boiler)	Nitrogen Oxides (NOx)	0.04 LB/MMBTU (30 DAY ROLLING AVG TIME PERIOD)	BACT-PSD
				12.31	EUAUXBOILER (Auxiliary Boiler)	Particulate matter, total < 10 µ (TPM10)	1.36 LB/H (HOURLY, TEST PROTOCOL)	BACT-PSD
				12.31	EUAUXBOILER (Auxiliary Boiler)	Particulate matter, filterable (FPM)	0.005 LB/MMBTU (TEST PROTOCOL WILL SPECIFY AVG TIME)	BACT-PSD
				12.31	EUAUXBOILER (Auxiliary Boiler)	Particulate matter, total < 2.5 Âµ (TPM2.5)	1.36 LB/H (HOURLY, TEST PROTOCOL)	BACT-PSD
				12.31	EUAUXBOILER (Auxiliary Boiler)	Volatile Organic Compounds (VOC)	0.004 LB/MMBTU (TEST PROTOCOL WILL SPECIFY AVG TIME.)	BACT-PSD
				12.31	EUAUXBOILER (Auxiliary Boiler)	Sulfur Dioxide (SO2)	0.6 LB/MMSCF (BASED ON FUEL RECEIPT RECORDS); 2000 GR/MMSCF (BASED UPON FUEL RECEIPT RECORDS)	BACT-PSD
				12.31	EUAUXBOILER (Auxiliary Boiler)	Carbon Dioxide Equivalent (CO2e)	93346 T/YR (12-MO ROLLING TIME PERIOD)	BACT-PSD
AL-0260	406-5003-X014	01/04/2011	THE WESTERVELT COMPANY	30.8	Two (2) 125 MMBtu/Hr. Wood-fired Boilers	Volatile Organic Compounds (VOC)	0.5 LB/MMBTU; 0.5 LB/MMBTU	BACT-PSD
SC-0149	1860-0128-CA	01/03/2013	KLAUSNER HOLDING USA, INC	12.12	BIOMASS BOILER EU001	Particulate matter, filterable (FPM)	0.0032 LB/MMBTU (3-HOUR)	OTHER CASE-BY-CASE
				12.12	BIOMASS BOILER EU001	Particulate matter, fugitive	0.032 LB/MMBTU (3-HOUR)	OTHER CASE-BY-CASE
				12.12	BIOMASS BOILER EU001	Particulate matter, total < 10 µ (TPM10)	0.032 LB/MMBTU (3-HOUR AVERAGE)	OTHER CASE-BY-CASE
				12.12	BIOMASS BOILER EU001	Particulate matter, total < 2.5 µ (TPM2.5)	0.032 LB/MMBTU (3-HOUR AVERAGE)	OTHER CASE-BY-CASE
				12.12	BIOMASS BOILER EU001	Nitrogen Oxides (NOx)	0.14 LB/MMBTU (3-HOUR); 16.8 LB/H (1-HOUR)	OTHER CASE-BY-CASE
				12.12	BIOMASS BOILER EU001	Carbon Monoxide	0.4 LB/MMBTU (3-HOUR)	OTHER CASE-BY-CASE
				12.12	BIOMASS BOILER EU001	Volatile Organic Compounds (VOC)	0.017 LB/MMBTU (3-HOUR)	OTHER CASE-BY-CASE
				12.12	BIOMASS BOILER EU001	Methane	37.1 T/YR (12-MONTH ROLLING SUM)	OTHER CASE-BY-CASE
				12.12	BIOMASS BOILER EU001	Nitrous Oxide (N2O)	4.9 T/YR (12-MONTH ROLLING SUM)	OTHER CASE-BY-CASE
				13.12	BIOMASS BOILER EU002	Particulate matter, total < 10 µ (TPM10)	0.032 LB/MMBTU	OTHER CASE-BY-CASE
				13.12	BIOMASS BOILER EU002	Particulate matter, total < 2.5 µ (TPM2.5)	0.032 LB/MMBTU (3-HOUR)	OTHER CASE-BY-CASE
				13.12	BIOMASS BOILER EU002	Nitrogen Oxides (NOx)	0.14 LB/MMBTU (3-HOUR); 16.8 LB/H (1-HOUR)	OTHER CASE-BY-CASE
				13.12	BIOMASS BOILER EU002	Carbon Monoxide	0.4 LB/MMBTU (3-HOUR)	OTHER CASE-BY-CASE
				13.12	BIOMASS BOILER EU002	Volatile Organic Compounds (VOC)	0.017 LB/MMBTU (3-HOUR)	OTHER CASE-BY-CASE
				13.12	BIOMASS BOILER EU002	Methane	37.1 T/YR (12-MONTH ROLLING SUM)	OTHER CASE-BY-CASE
				13.12	BIOMASS BOILER EU002	Nitrous Oxide (N2O)	4.9 T/YR (12-MONTH ROLLING SUM)	OTHER CASE-BY-CASE
				13.12	BIOMASS BOILER EU002	Particulate matter, filterable (FPM)	0.0032 LB/MMBTU (3-HOUR)	OTHER CASE-BY-CASE
				13.12	BIOMASS BOILER EU002	Particulate matter, fugitive	0.032 LB/MMBTU (3-HOUR)	OTHER CASE-BY-CASE
				11.31	NATURAL GAS BOILER EU003	Nitrogen Oxides (NOx)	0.036 LB/MMBTU (3-HOUR); 1.66 LB/H (1-HOUR)	OTHER CASE-BY-CASE
				11.31	NATURAL GAS BOILER EU003	Carbon Monoxide	0.039 LB/MMBTU (3-HOUR)	OTHER CASE-BY-CASE
				11.31	NATURAL GAS BOILER EU003	Volatile Organic Compounds (VOC)	0.003 LB/MMBTU (3-HOUR AVERAGE)	OTHER CASE-BY-CASE
				11.31	NATURAL GAS BOILER EU003	Particulate matter, fugitive	0.005 LB/MMBTU (3-HOUR)	OTHER CASE-BY-CASE
				11.31	NATURAL GAS BOILER EU003	Particulate matter, filterable (FPM)	0.002 LB/MMBTU (3-HOUR)	OTHER CASE-BY-CASE
				11.31	NATURAL GAS BOILER EU003	Particulate matter, total < 10 µ (TPM10)	0.005 LB/MMBTU (3-HOUR)	OTHER CASE-BY-CASE
				11.31	NATURAL GAS BOILER EU003	Particulate matter, total < 2.5 µ (TPM2.5)	0.005 LB/MMBTU (3-HOUR)	OTHER CASE-BY-CASE
				13.31	NATURAL GAS BOILER EU004	Nitrogen Oxides (NOx)	0.036 LB/MMBTU (3-HOUR); 1.66 LB/H (1-HOUR)	OTHER CASE-BY-CASE
				13.31	NATURAL GAS BOILER EU004	Carbon Monoxide	0.039 LB/MMBTU (3-HOUR)	OTHER CASE-BY-CASE
				13.31	NATURAL GAS BOILER EU004	Volatile Organic Compounds (VOC)	0.003 LB/MMBTU (3-HOUR)	OTHER CASE-BY-CASE
				13.31	NATURAL GAS BOILER EU004	Particulate matter, fugitive	0.005 LB/MMBTU (3-HOUR)	OTHER CASE-BY-CASE
				13.31	NATURAL GAS BOILER EU004	Particulate matter, filterable (FPM)	0.002 LB/MMBTU (3-HOUR)	OTHER CASE-BY-CASE
				13.31	NATURAL GAS BOILER EU004	Particulate matter, total < 10 µ (TPM10)	0.005 LB/MMBTU (3-HOUR)	OTHER CASE-BY-CASE
				13.31	NATURAL GAS BOILER EU004	Particulate matter, total < 2.5 µ (TPM2.5)	0.005 LB/MMBTU	OTHER CASE-BY-CASE
				13.31	NATURAL GAS BOILER EU005	Nitrogen Oxides (NOx)	0.036 LB/MMBTU (3-HOUR); 1.66 LB/H (1-HOUR)	OTHER CASE-BY-CASE
				13.31	NATURAL GAS BOILER EU005	Carbon Monoxide	0.039 LB/MMBTU (3-HOUR)	OTHER CASE-BY-CASE
				13.31	NATURAL GAS BOILER EU005	Volatile Organic Compounds (VOC)	0.003 LB/MMBTU (3-HOUR)	OTHER CASE-BY-CASE
				13.31	NATURAL GAS BOILER EU005	Particulate matter, fugitive	0.005 LB/MMBTU (3-HOUR)	OTHER CASE-BY-CASE
				13.31	NATURAL GAS BOILER EU005	Particulate matter, filterable (FPM)	0.002 LB/MMBTU (3-HOUR)	OTHER CASE-BY-CASE
				13.31	NATURAL GAS BOILER EU005	Particulate matter, total < 10 µ (TPM10)	0.005 LB/MMBTU (3-HOUR)	OTHER CASE-BY-CASE
				13.31	NATURAL GAS BOILER EU005	Particulate matter, total < 2.5 µ (TPM2.5)	0.005 LB/MMBTU (3-HOUR)	OTHER CASE-BY-CASE
				13.31	NATURAL GAS BOILER EU006	Nitrogen Oxides (NOx)	0.036 LB/MMBTU (3-HOUR); 1.66 LB/H (1-HOUR)	OTHER CASE-BY-CASE
				13.31	NATURAL GAS BOILER EU006	Carbon Monoxide	0.039 LB/MMBTU (3-HOUR)	OTHER CASE-BY-CASE
				13.31	NATURAL GAS BOILER EU006	Volatile Organic Compounds (VOC)	0.003 LB/MMBTU (3-HOUR)	OTHER CASE-BY-CASE
				13.31	NATURAL GAS BOILER EU006	Particulate matter, total < 10 µ (TPM10)	0.005 LB/MMBTU (3-HOUR)	OTHER CASE-BY-CASE
				13.31	NATURAL GAS BOILER EU006	Particulate matter, fugitive	0.005 LB/MMBTU (3-HOUR)	OTHER CASE-BY-CASE
				13.31	NATURAL GAS BOILER EU006	Particulate matter, filterable (FPM)	0.002 LB/MMBTU (3-HOUR)	OTHER CASE-BY-CASE
				13.31	NATURAL GAS BOILER EU006	Particulate matter, total < 2.5 µ (TPM2.5)	0.005 LB/MMBTU (3-HOUR)	OTHER CASE-BY-CASE

Date: 9/30/2021
Permit #: 38754
Company: Valero Refining - Texas, L.P.

I. Applicant Information	
I acknowledge that I am submitting an authorized TCEQ application workbook and any necessary attachments. Except for inputting the requested data and adjusting row height and column width, I have not changed the TCEQ application workbook in any way, including but not limited to changing formulas, formatting, content, or protections.	I agree
A. Company Information	
Company or Legal Name:	Valero Refining - Texas, L.P.
Permits are issued to either the facility owner or operator, commonly referred to as the applicant or permit holder. List the legal name of the company, corporation, partnership, or person who is applying for the permit. We will verify the legal name with the Texas Secretary of State at (512) 463-5555 or at the link below:	
https://www.sos.state.tx.us	
Texas Secretary of State Charter/Registration Number (if given):	
B. Company Official Contact Information: must not be a consultant	
Prefix (Mr., Ms., Dr., etc.):	Mr.
First Name:	Joe
Last Name:	Almaraz
Title:	Director Environmental / Safety Affairs
Mailing Address:	P.O. Box 9370
Address Line 2:	
City:	Corpus Christi
State:	Texas
ZIP Code:	78469
Telephone Number:	361-289-3328
Fax Number:	361-289-3126
Email Address:	Joe.Almaraz@valero.com
C. Technical Contact Information: This person must have the authority to make binding agreements and representations on behalf of the applicant and may be a consultant. **Additional technical contact(s) can be provided in a cover letter.**	
Prefix (Mr., Ms., Dr., etc.):	Ms.
First Name:	Meagan
Last Name:	Marquard
Title:	Superintendent Environmental
Company or Legal Name:	Valero Refining - Texas, L.P.
Mailing Address:	P.O. Box 9370
Address Line 2:	
City:	Corpus Christi
State:	Texas
ZIP Code:	78469
Telephone Number:	361-299-8913
Fax Number:	361-289-3126
Email Address:	Meagan.Marquard@valero.com

D. Assigned Numbers

The CN and RN below are assigned when a Core Data Form is initially submitted to the Central Registry. The RN is also assigned if the agency has conducted an investigation or if the agency has issued an enforcement action. If these numbers have not yet been assigned, leave these questions blank and include a Core Data Form with your application submittal. See Section VI.B. below for additional information.

Enter the CN. The CN is a unique number given to each business, governmental body, association, individual, or other entity that owns, operates, is responsible for, or is affiliated with a regulated entity.	CN600127468
Enter the RN. The RN is a unique agency assigned number given to each person, organization, place, or thing that is of environmental interest to us and where regulated activities will occur. The RN replaces existing air account numbers. The RN for portable units is assigned to the unit itself, and that same RN should be used when applying for authorization at a different location.	RN100214386

II. Delinquent Fees and Penalties

Does the applicant have unpaid delinquent fees and/or penalties owed to the TCEQ? This form will not be processed until all delinquent fees and/or penalties owed to the TCEQ or the Office of the Attorney General on behalf of the TCEQ are paid in accordance with the Delinquent Fee and Penalty Protocol. For more information regarding Delinquent Fees and Penalties, go to the TCEQ Web site at the link below:	No

https://www.tceq.texas.gov/agency/financial/fees/delin

III. Permit Information

A. Permit and Action Type (multiple may be selected, leave no blanks)

Additional information regarding the different NSR authorizations can be found at the link below:
https://www.tceq.texas.gov/permitting/air/guidance/authorize.html

Select from the drop-down the type of action being requested for each permit type. **If that permit type does not apply, you MUST select "Not applicable".**

Provide all assigned permit numbers relevant for the project. Leave blank if the permit number has not yet been assigned.

Permit Type	Action Type Requested (do not leave blank)	Permit Number (if assigned)
Minor NSR (can be a Title V major source): *Not applicable, Initial, Amendment, Renewal, Renewal Certification, Renewal/Amendment, Relocation/Alteration, Change of Location, Alteration, Extension to Start of Construction*	Amendment	38754
Special Permit: *Not applicable, Amendment, Renewal, Renewal Certification, Renewal/Amendment, Alteration, Extension to Start of Construction*	Not applicable	
De Minimis: *Not applicable, Initial*	Not applicable	
Flexible: *Not applicable, Initial, Amendment, Renewal, Renewal Certification, Renewal/Amendment, Alteration, Extension to Start of Construction*	Not applicable	

PSD: *Not applicable, Initial, Major Modification*	Major Modification	PSDTX324M14
Nonattainment: *Not applicable, Initial, Major Modification*	Not applicable	
HAP Major Source [FCAA § 112(g)]: *Not applicable, Initial, Major Modification*	Not applicable	
PAL: *Not applicable, Initial, Amendment, Renewal, Renewal/Amendment, Alteration*	Not applicable	
GHG PSD: *Not applicable, Initial, Major Modification, Voluntary Update*	Initial	TBD
GHG projects: List the non-GHG applications (pending or being submitted) that are associated with the project. Note: All preconstruction authorizations (including authorization for emissions of greenhouse gases, if applicable) must be obtained prior to start of construction.		

B. MSS Activities

How are/will MSS activities for sources associated with this project be authorized?	This permit

C. Consolidating NSR Permits

Will this permit be consolidated into another NSR permit with this action?	No
Will NSR permits be consolidated into this permit with this action?	No

D. Incorporation of Standard Permits, Standard Exemptions, and/or Permits By Rule (PBR)

To ensure protectiveness, previously issued authorizations (standard permits, standard exemptions, or PBRs) including those for MSS, are incorporated into a permit either by consolidation or by reference.

- -Authorizations entirely incorporated by consolidation will be voided when the project is complete, and the sources and allowable emissions will be added to the NSR permit's MAERT.
- -Authorizations incorporated by reference will be referenced with the final action for this project but will not be voided. Sources will continue to be authorized in the current manner.

At the time of renewal and/or amendment, consolidation (in some cases) may be voluntary and referencing is mandatory. More guidance regarding incorporation can be found in 30 TAC § 116.116(d)(2), 30 TAC § 116.615(3) and in this memo (link below):

https://www.tceq.texas.gov/assets/public/permitting/air/memos/pbr_spc06.pdf

Are there any standard permits, standard exemptions, or PBRs to be incorporated by reference?	No
Are there any PBR, standard exemptions, or standard permits associated to be incorporated by consolidation? **Note:** Emission calculations, a BACT analysis, and an impacts analysis must be attached to this application at the time of submittal for any authorization to be incorporated by consolidation.	No

E. Associated Federal Operating Permits

Is this facility located at a site required to obtain a **site operating permit (SOP)** or **general operating permit (GOP)?**	Yes
Is a **SOP** or **GOP** review pending for this source, area, or site?	No
If required to obtain a **SOP** or **GOP**, list all associated permit number(s). If no associated permit number has been assigned yet, enter "TBD":	O1458

IV. Facility Location and General Information	
A. Location	
County: Enter the county where the facility is physically located.	Nueces
TCEQ Region	Region 14
County attainment status as of Sept. 23, 2019	attainment or unclassified for all pollutants
Street Address:	5900 Up River Road
City: If the address is not located in a city, then enter the city or town closest to the facility, even if it is not in the same county as the facility.	Corpus Christi
ZIP Code: Include the ZIP Code of the physical facility site, not the ZIP Code of the applicant's mailing address.	78407
Site Location Description: If there is no street address, provide written driving directions to the site. Identify the location by distance and direction from well-known landmarks such as major highway intersections.	Not applicable
Use USGS maps, county maps prepared by the Texas Department of Transportation, or an online software application such as Google Earth to find the latitude and longitude.	
Latitude (in degrees, minutes, and nearest second (DDD:MM:SS)) for the street address or the destination point of the driving directions. Latitude is the angular distance of a location north of the equator and will always be between 25 and 37 degrees north (N) in Texas.	027:49:14
Longitude (in degrees, minutes, and nearest second (DDD:MM:SS)) for the street address or the destination point of the driving directions. Longitude is the angular distance of a location west of the prime meridian and will always be between 93 and 107 degrees west (W) in Texas.	097:29:18
Is this a project for a lead smelter, concrete crushing facility, and/or a hazardous waste management facility?	No
B. General Information	
Site Name:	Valero Corpus Christi Refinery West Plant
Area Name: Must indicate the general type of operation, process, equipment or facility. Include numerical designations, if appropriate. Examples are Sulfuric Acid Plant and No. 5 Steam Boiler. Vague names such as Chemical Plant are not acceptable.	West Plant
Are there any schools located within 3,000 feet of the site boundary?	No
C. Portable Facility	
Permanent or portable facility?	Permanent

D. Industry Type	
Principal Company Product/Business:	Petroleum Refining
A list of SIC codes can be found at the link below: https://www.naics.com/sic-codes-industry-drilldown/	
Principal SIC code:	2911
NAICS codes and conversions between NAICS and SIC Codes are available at the link below: https://www.census.gov/eos/www/naics/	
Principal NAICS code:	324110
E. State Senator and Representative for this site	
This information can be found at the link below (note, the website is not compatible to Internet Explorer): https://wrm.capitol.texas.gov/	
State Senator:	Juan "Chuy" Hinojosa
District:	Texas Senate District 20
State Representative:	Abel Herrero
District:	Texas House District 34

V. Project Information	
A. Description	
Provide a **brief** description of the project that is requested (describe the what, not the how and why). Limited to 500 characters.	Valero plans to undertake changes to the West Plant Heavy Oil Cracker (HOC), a fluidized catalytic cracking (FCC) unit. Due to the integrated nature of refinery operations, the project (“HOC Reconfiguration Project”) will necessitate construction of a new utility boiler, a new cooling tower, and a new Gas Plant.
B. Project Timing	
Authorization must be obtained for many projects before beginning construction. Construction is broadly interpreted as anything other than site clearance or site preparation. Enter the date as "Month Date, Year" (e.g. July 4, 1776).	
Projected Start of Construction:	October 1, 2022
Projected Start of Operation:	January 1, 2024
C. Enforcement Projects	
Is this application in response to, or related to, an agency investigation, notice of violation, or enforcement action?	No
D. Operating Schedule	
Will sources in this project be authorized to operate 8760 hours per year?	Yes

VI. Application Materials	
All representations regarding construction plans and operation procedures contained in the permit application shall be conditions upon which the permit is issued. (30 TAC § 116.116)	
A. Confidential Application Materials	
Is confidential information submitted with this application?	No
B. Is the Core Data Form (Form 10400) attached (link to the form below)?	N/A
C. Is a current area map attached?	Yes
Is the area map a current map with a true north arrow, an accurate graduated scale, the entire plant property, the location of the property relative to prominent geographical features including, but not limited to, highways, roads, streams, and significant landmarks such as buildings, residences, schools, parks, hospitals, day care centers, and churches?	Yes
Does the map show a 3,000-foot radius from the property boundary?	Yes

D. Is a plot plan attached?	Yes
Does your plot plan clearly show a north arrow, an accurate scale, all property lines, all emission points, buildings, tanks, process vessels, other process equipment, and two bench mark locations?	Yes
Does your plot plan identify all emission points on the affected property, including all emission points authorized by other air authorizations, construction permits, PBRs, special permits, and standard permits?	Yes
Did you include a table of emission points indicating the authorization type and authorization identifier, such as a permit number, registration number, or rule citation under which each emission point is currently authorized?	Yes
E. Is a process flow diagram attached?	Yes
Is the process flow diagram sufficiently descriptive so the permit reviewer can determine the raw materials to be used in the process; all major processing steps and major equipment items; individual emission points associated with each process step; the location and identification of all emission abatement devices; and the location and identification of all waste streams (including wastewater streams that may have associated air emissions)?	Yes
F. Is a process description attached?	Yes
Does the process description emphasize where the emissions are generated, why the emissions must be generated, what air pollution controls are used (including process design features that minimize emissions), and where the emissions enter the atmosphere?	Yes
Does the process description also explain how the facility or facilities will be operating when the maximum possible emissions are produced?	Yes
G. Is a detailed list of requested actions included in the application? This list can be included in the project description.	Yes
H. Are detailed calculations attached? Calculations must be provided for each source with new or changing emission rates. For example, a new source, changing emission factors, decreasing emissions, consolidated sources, etc. Calculations do not need to be submitted for sources without any proposed emission rate changes. Note: the preferred format is an electronic workbook (such as Excel) with all formulas viewable for review.	Yes
Are emission rates and associated calculations for planned MSS facilities and related activities attached?	Yes
I. Is a material balance (Table 2, Form 10155) attached?	Yes
Table 2 (Form 10155), entitled Material Balance: A material balance representation may be required for all applications to confirm technical emissions information. Typically this is required for refining and chemical manufacturing processes involving reactions, separations, and blending. It may also be requested by the permit reviewer for other applications. Table 2 should represent the total material balance; that is, all streams into the system and all streams out. Additional sheets may be attached if necessary. Complex material balances may be presented on spreadsheets or indicated using process flow diagrams. All materials in the process should be addressed whether or not they directly result in the emission of an air contaminant. All production rates must be based on maximum operating conditions.	
J. Is a list of MSS activities attached?	Yes
Are the MSS activities listed and discussed separately, each complete with the authorization mechanism or emission rates, frequency, duration, and supporting information if authorized by this permit?	Yes

K. Is a discussion of state regulatory requirements attached, addressing 30 TAC Chapters 101, 111, 112, 113, 115, and 117?	Yes
For all applicable chapters, does the discussion include how the facility will comply with the requirements of the chapter?	Yes
For all not applicable chapters, does the discussion include why the chapter is not applicable?	Yes
L. Are all other required tables, calculations, and descriptions attached?	Yes

VII. Signature

The owner or operator of the facility must apply for authority to construct. The appropriate company official (owner, plant manager, president, vice president, or environmental director) must sign all copies of the application. The applicant's consultant cannot sign the application. **Important Note: Unless submitting through STEERS, signatures must be original in ink, not reproduced by photocopy, fax, or other means, and must be received before any permit is issued.**

The signature below confirms that I have knowledge of the facts included in this application and that these facts are true and correct to the best of my knowledge and belief. I further state that to the best of my knowledge and belief, the project for which application is made will not in any way violate any provision of the Texas Water Code (TWC), Chapter 7; the Texas Health and Safety Code, Chapter 382; the Texas Clean Air Act (TCAA); the air quality rules of the Texas Commission on Environmental Quality; or any local governmental ordinance or resolution enacted pursuant to the TCAA. I further state that I understand my signature indicates that this application meets all applicable nonattainment, prevention of significant deterioration, or major source of hazardous air pollutant permitting requirements. The signature further signifies awareness that intentionally or knowingly making or causing to be made false material statements or representations in the application is a criminal offense subject to criminal penalties.

Name:	Joe Almaraz
Signature:	
Original signature is required unless submitted through STEERS.	
Date:	September 30, 2021

VIII. Federal Regulatory Questions

Indicate if any of the following requirements apply to the proposed facility. Note that some federal regulations apply to minor sources. Enter all applicable Subparts.

A. Title 40 CFR Part 60

Do NSPS subpart(s) apply to a facility in this application?	Yes
List applicable subparts you will demonstrate compliance with (e.g. Subpart M)	Subparts A, J, Ja, K, Ka, Kb, VV, XX, GGG, NNN, QQQ, RRR

B. Title 40 CFR Part 61

Do NESHAP subpart(s) apply to a facility in this application?	Yes
List applicable subparts you will demonstrate compliance with (e.g. Subpart BB)	Subparts A, M, FF

C. Title 40 CFR Part 63

Do MACT subpart(s) apply to a facility in this application?	Yes
List applicable subparts you will demonstrate compliance with (e.g. Subpart VVVV)	Subparts A, F, G, H, R, Y, CC, UUU, DDDDD, GGGGG

IX. Emissions Review

A. Impacts Analysis

Any change that may result in an increase in off-property concentrations of air contaminants requires an air quality impacts demonstration, which may include a qualitative analysis, the MERA, and/or modeling. Information regarding the air quality impacts demonstration must be provided with the application and show compliance with all state and federal requirements. Detailed requirements for the information necessary to make the demonstration are listed on the Impacts sheet.

Are there any increases in short-term and/or long-term allowable emission rates?	Yes
Can all the emission rate increases be attributed to speciation of currently authorized PM emissions and/or revisions of AP-42 or TCEQ guidance?	No
Are there any new or modified control devices or emission sources?	Yes
Are there any changes to emission point discharge parameters? Consider all parameters on the Stack Parameters sheet, including location.	No
Will any PBR registrations, standard permit, or standard exemptions be incorporated by consolidation?	No
Does this project require an impacts analysis?	Yes
Will off property impacts for any of the pollutants require Tier III Toxicology Effects Evaluation as defined in Appendix D of MERA?	No

B. Disaster Review

If the proposed facility will handle sufficient quantities of certain chemicals which, if released accidentally, would cause off-property impacts that could be immediately dangerous to life and health, a disaster review analysis may be required as part of the application. Contact the appropriate NSR permitting section for assistance at (512) 239-1250. Additional Guidance can be found at the link below:

https://www.tceq.texas.gov/assets/public/permitting/air/Guidance/NewSourceReview/disrev-factsheet.pdf

Does this application involve any air contaminants for which a disaster review is required?	No

C. Air Pollutant Watch List	
Certain areas of the state have concentrations of specific pollutants that are of concern. The TCEQ has designated these portions of the state as watch list areas. Location of a facility in a watch list area could result in additional restrictions on emissions of the affected air pollutant(s) or additional permit requirements. The location of the areas and pollutants of interest can be found at the link below: https://www.tceq.texas.gov/toxicology/apwl/apwl.html	
Is the proposed facility located in a watch list area?	No
D. Mass Emissions Cap and Trade	
Is this facility located at a site within the Houston/Galveston nonattainment area (Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, and Waller Counties)?	No

X. Additional Requirements	
A. Bulk Fuel Terminals	
Is this project for a bulk fuel terminal?	No
B. Plant Fuel Gas Facilities	
Does this site utilize plant fuel gas?	Yes

Texas Commission on Environmental Quality
Form PI-1 General Application
Unit Types - Emission Rates

Date: 9/30/2021
Permit #: 38754
Company: Valero Refining - Texas, L.P.

Action Requested (only 1 action per FIN)	Include these emissions in annual (tpy) summary?	Facility ID Number (FIN)	Emission Point Number (EPN)	Source Name	Pollutant	Current Short-Term (lb/hr)	Current Long-Term (tpy)	Consolidated Current Short-Term (lb/hr)	Consolidated Current Long-Term (tpy)	Proposed Short-Term (lb/hr)	Proposed Long-Term (tpy)	Short-Term Difference (lb/hr)	Long-Term Difference (tpy)	Unit Type (Used for reviewing BACT and Monitoring Requirements)	Unit Type Notes (only if "other" unit type in Column O)
New/Modified	Yes	Various	MSS Caps	MSS Caps	CO	2948.62	53.9			2948.62	94.64	0	40.74	MSS Activities	
					H2S	6.59	0.22			6.59	0.22	0	0		
					NH3	4.41	0.17			4.41	0.17	0	0		
					NOx	532.06	11.05			532.06	18.03	0	6.98		
					PM	80.53	1.41			80.53	2.96	0	1.55		
					PM10	80.53	1.31			80.53	2.86	0	1.55		
					PM2.5	80.53	1.29			80.53	2.84	0	1.55		
					SO2	1019	37.33			1019	38.99	0	1.66		
					VOC	729.3	44.83			729.3	45.22	0	0.3901		
					Exempt Solvents	1.76	0.6			1.76	0.6	0	0		
Not New/Modified	Yes	01-H-01	1	Heater - Crude Heater (01-H-01)	CO	8.1	20.13			8.1	20.13	0	0	Heater	
					NH3	0.05	0.17			0.05	0.17	0	0		
					NOx	9.72	19.24			9.72	19.24	0	0		
					PM	1.21	4			1.21	4	0	0		
					PM10	1.21	4			1.21	4	0	0		
					PM2.5	1.21	4			1.21	4	0	0		
					SO2	2.5	5.71			2.5	5.71	0	0		
					VOC	0.87	2.9			0.87	2.9	0	0		
Not New/Modified	Yes	01-H-02	131	Heater - Crude Preflash (01-H-02)	CO	0.62	2.71			0.62	2.71	0	0	Heater	
					NH3	<0.01	0.02			<0.01	0.02	0	0		
					NOx	1.77	6.29			1.77	6.29	0	0		
					PM	0.13	0.49			0.13	0.49	0	0		
					PM10	0.13	0.49			0.13	0.49	0	0		
					PM2.5	0.13	0.49			0.13	0.49	0	0		
					SO2	0.27	0.64			0.27	0.64	0	0		
					VOC	0.1	0.35			0.1	0.35	0	0		
Not New/Modified	Yes	01-H-03	132	Heater - Crude Stabilizer (01-H-03)	CO	0.17	0.72			0.17	0.72	0	0	Heater	
					NH3	<0.01	<0.01			<0.01	<0.01	0	0		
					NOx	0.48	2.06			0.48	2.06	0	0		
					PM	0.04	0.15			0.04	0.15	0	0		
					PM10	0.04	0.15			0.04	0.15	0	0		
					PM2.5	0.04	0.15			0.04	0.15	0	0		
					SO2	0.07	0.22			0.07	0.22	0	0		
					VOC	0.03	0.11			0.03	0.11	0	0		
Not New/Modified	Yes	02-H-01	74	Vacuum Heater	CO	4.99	16.77			4.99	16.77	0	0	Heater	
					NH3	0.03	0.14			0.03	0.14	0	0		
					NOx	5.98	26.21			5.98	26.21	0	0		
					PM	0.74	3.26			0.74	3.26	0	0		
					PM10	0.74	3.26			0.74	3.26	0	0		
					PM2.5	0.74	3.26			0.74	3.26	0	0		
					SO2	1.37	4.13			1.37	4.13	0	0		
					VOC	0.54	2.36			0.54	2.36	0	0		
Not New/Modified	Yes	11-H-01	114	Heater - Desalter Heater (11-H-01) -	CO	3.54	15.52			3.54	15.52	0	0	Heater	
					NH3	0.03	0.14			0.03	0.14	0	0		
					NOx	3.96	17.34			3.96	17.34	0	0		
					PM	0.74	3.23			0.74	3.23	0	0		
					PM10	0.74	3.23			0.74	3.23	0	0		
					PM2.5	0.74	3.23			0.74	3.23	0	0		
					SO2	1.52	4.6			1.52	4.6	0	0		
					VOC	0.53	2.34			0.53	2.34	0	0		
					H2S	0.02	0.05			0.02	0.05	0	0		
Not New/Modified	Yes	12-H-1A/B	115	HDS Heaters	CO	8.08	32.91			8.08	32.91	0	0	Heater	
					NH3	0.05	0.22			0.05	0.22	0	0		
					NOx	9.7	42.07			9.7	42.07	0	0		
					PM	1.2	5.22			1.2	5.22	0	0		
					PM10	1.2	5.22			1.2	5.22	0	0		
					PM2.5	1.2	5.22			1.2	5.22	0	0		
					SO2	2.49	7.45			2.49	7.45	0	0		
					VOC	0.87	3.78			0.87	3.78	0	0		
Not New/Modified	Yes	12-H02	116	Heater - HDS Pre-Heater (12-H-02)	CO	0.31	1.1			0.31	1.1	0	0	Heater	
					NH3	<0.01	0.02			<0.01	0.02	0	0		
					NOx	2.36	8.28			2.36	8.28	0	0		
					PM	0.15	0.51			0.15	0.51	0	0		

Texas Commission on Environmental Quality
Form PI-1 General Application
Unit Types - Emission Rates

Action Requested (only 1 action per FIN)	Include these emissions in annual (tpy) summary?	Facility ID Number (FIN)	Emission Point Number (EPN)	Source Name	Pollutant	Current Short-Term (lb/hr)	Current Long-Term (tpy)	Consolidated Current Short-Term (lb/hr)	Consolidated Current Long-Term (tpy)	Proposed Short-Term (lb/hr)	Proposed Long-Term (tpy)	Short-Term Difference (lb/hr)	Long-Term Difference (tpy)	Unit Type (Used for reviewing BACT and Monitoring Requirements)	Unit Type Notes (only if "other" unit type in Column O)
					PM10	0.15	0.51			0.15	0.51	0	0		
					PM2.5	0.15	0.51			0.15	0.51	0	0		
					SO2	0.3	0.73			0.3	0.73	0	0		
					VOC	0.11	0.37			0.11	0.37	0	0		
Not New/Modified	Yes	13-H-01B	118	Hydrogen Reformer Heater	CO	58.51	220.73			58.51	220.73	0	0	Heater	
					NH3	0.37	1.52			0.37	1.52	0	0		
					NOx	70.21	284.4			70.21	284.4	0	0		
					PM	8.72	35.8			8.72	35.8	0	0		
					PM10	8.72	35.8			8.72	35.8	0	0		
					PM2.5	8.72	35.8			8.72	35.8	0	0		
					SO2	44.53	122.64			44.53	122.64	0	0		
					VOC	9.95	25.91			9.95	25.91	0	0		
Not New/Modified	Yes	30-B-02	153	Heater - HR Boiler (30-B-02)	CO	8.46	28.94			8.46	28.94	0	0	Heater	
					NH3	0.09	0.33			0.09	0.33	0	0		
					NOx	22.56	82.34			22.56	82.34	0	0		
					PM	2.1	5.51			2.1	5.51	0	0		
					PM10	2.1	5.51			2.1	5.51	0	0		
					PM2.5	2.1	5.51			2.1	5.51	0	0		
					SO2	4.34	10.66			4.34	10.66	0	0		
					VOC	1.52	3.99			1.52	3.99	0	0		
Not New/Modified	Yes	30-B-04	30-B-04	Boiler 30-B-04	CO	19.84	48.14			19.84	48.14	0	0	Boiler: Liquid and Gas Fuel, > 40 MMBtu/hr	
					NH3	2.41	5.86			2.41	5.86	0	0		
					NOx	8.25	20.02			8.25	20.02	0	0		
					PM	4.1	9.95			4.1	9.95	0	0		
					PM10	4.1	9.95			4.1	9.95	0	0		
					PM2.5	4.1	9.95			4.1	9.95	0	0		
					SO2	8.65	14.47			8.65	14.47	0	0		
					VOC	2.97	7.2			2.97	7.2	0	0		
Not New/Modified	Yes	30-B-04	30-B-04MSS	Boiler 30-B-04	CO	198.55	3.57			198.55	3.57	0	0	Boiler: Liquid and Gas Fuel, > 40 MMBtu/hr	
					NOx	55	0.99			55	0.99	0	0		
Not New/Modified	Yes	31-H-01	117	Heater - Alky Frac. Reb. (31-H-01)	CO	2.51	8.83			2.51	8.83	0	0	Heater	
					NH3	0.05	0.17			0.05	0.17	0	0		
					NOx	5.64	19.86			5.64	19.86	0	0		
					PM	1.17	4.11			1.17	4.11	0	0		
					PM10	1.17	4.11			1.17	4.11	0	0		
					PM2.5	1.17	4.11			1.17	4.11	0	0		
					SO2	2.41	5.86			2.41	5.86	0	0		
					VOC	0.85	2.97			0.85	2.97	0	0		
Not New/Modified	Yes	36-H-01	120	Heater - Butamer Heater (36-H-01)	CO	0.27	0.98			0.27	0.98	0	0	Heater	
					NH3	<0.01	0.02			<0.01	0.02	0	0		
					NOx	2	4.3			2	4.3	0	0		
					PM	0.12	0.26			0.12	0.26	0	0		
					PM10	0.12	0.26			0.12	0.26	0	0		
					PM2.5	0.12	0.26			0.12	0.26	0	0		
					SO2	0.26	0.41			0.26	0.41	0	0		
					VOC	0.09	0.19			0.09	0.19	0	0		
Not New/Modified	Yes	38-H-01	162	Oleflex Heater	CO	19.45	69.49			19.45	69.49	0	0	Heater	
					NH3	0.12	0.49			0.12	0.49	0	0		
					NOx	23.34	65.75			23.34	65.75	0	0		
					PM	2.9	11.62			2.9	11.62	0	0		
					PM10	2.9	11.62			2.9	11.62	0	0		
					PM2.5	2.9	11.62			2.9	11.62	0	0		
					SO2	5.99	16.57			5.99	16.57	0	0		
					VOC	2.1	8.41			2.1	8.41	0	0		
Not New/Modified	Yes	46-H-01	119	Heater - Sulften Heater (46-H-01)	CO	0.35	1.49			0.35	1.49	0	0	Heater	
					NH3	0.01	0.03			0.01	0.03	0	0		
					NOx	2.62	5.21			2.62	5.21	0	0		
					PM	0.16	0.32			0.16	0.32	0	0		
					PM10	0.16	0.32			0.16	0.32	0	0		
					PM2.5	0.16	0.32			0.16	0.32	0	0		
					SO2	0.34	0.63			0.34	0.63	0	0		
					VOC	0.12	0.24			0.12	0.24	0	0		
Not New/Modified	Yes	47-H-04	150	HCU Heater	CO	6.1	24.38			6.1	24.38	0	0	Heater	
					NH3	0.06	0.26			0.06	0.26	0	0		

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					NOx	12.19	48.76			12.19	48.76	0	0		
					PM	1.51	6.06			1.51	6.06	0	0		
					PM10	1.51	6.06			1.51	6.06	0	0		
					PM2.5	1.51	6.06			1.51	6.06	0	0		
					SO2	3.13	8.63			3.13	8.63	0	0		
					VOC	1.1	4.38			1.1	4.38	0	0		
Not New/Modified	Yes	48-H-01	151	Heater - NHU Heater (48-H-01)	CO	1.06	3.82			1.06	3.82	0	0	Heater	
					NH3	0.01	0.04			0.01	0.04	0	0		
					NOx	3.52	12.72			3.52	12.72	0	0		
					PM	0.26	0.95			0.26	0.95	0	0		
					PM10	0.26	0.95			0.26	0.95	0	0		
					PM2.5	0.26	0.95			0.26	0.95	0	0		
					SO2	0.54	1.35			0.54	1.35	0	0		
					VOC	0.19	0.69			0.19	0.69	0	0		
Not New/Modified	Yes	49-H-03	152	CRU Heater	CO	16.85	57.02			16.85	57.02	0	0	Heater	
					NH3	0.18	0.6			0.18	0.6	0	0		
					NOx	39.31	133.06			39.31	133.06	0	0		
					PM	4.18	14.16			4.18	14.16	0	0		
					PM10	4.18	14.16			4.18	14.16	0	0		
					PM2.5	4.18	14.16			4.18	14.16	0	0		
					SO2	9.8	22.69			9.8	22.69	0	0		
					VOC	3.03	10.25			3.03	10.25	0	0		
Not New/Modified	Yes	49-H-71	172	Heater - RSU Heater (49-H-71)	CO	3.3	12.72			3.3	12.72	0	0	Heater	
					NH3	0.02	0.08			0.02	0.08	0	0		
					NOx	3.96	15.26			3.96	15.26	0	0		
					PM	0.49	1.9			0.49	1.9	0	0		
					PM10	0.49	1.9			0.49	1.9	0	0		
					PM2.5	0.49	1.9			0.49	1.9	0	0		
					SO2	1.02	2.7			1.02	2.7	0	0		
					VOC	0.36	1.37			0.36	1.37	0	0		
Not New/Modified	Yes	49-H-90	49-H-90	Heater - C7 Splitter Reb. (49-H-90)	CO	5.32	16.82			5.32	16.82	0	0	Heater	
					NH3	0.03	0.13			0.03	0.13	0	0		
					NOx	4.25	15.46			4.25	15.46	0	0		
					PM	0.79	3.01			0.79	3.01	0	0		
					PM10	0.79	3.01			0.79	3.01	0	0		
					PM2.5	0.79	3.01			0.79	3.01	0	0		
					SO2	1.64	4.29			1.64	4.29	0	0		
					VOC	0.57	2.18			0.57	2.18	0	0		
Not New/Modified	Yes	52-H-01	195	Heater - GDU Charge Heater (52-H-01)	CO	13.65	34.29			13.65	34.29	0	0	Heater	
					NH3	0.05	0.2			0.05	0.2	0	0		
					NOx	5.8	14.69			5.8	14.69	0	0		
					PM	1.23	4.61			1.23	4.61	0	0		
					PM10	1.23	4.61			1.23	4.61	0	0		
					PM2.5	1.23	4.61			1.23	4.61	0	0		
					SO2	2.55	6.57			2.55	6.57	0	0		
					VOC	0.89	3.34			0.89	3.34	0	0		
Not New/Modified	Yes	CRUDE UNIT	1F	Crude Unit	VOC							0	0	Fugitives: Piping and Equipment Leak	
Not New/Modified	Yes	VACUUMUNIT	2F	Vacuum Unit	H2S	0.02	0.08			0.02	0.08	0	0	Fugitives: Piping and Equipment Leak	
					VOC							0	0		
Not New/Modified	Yes	LEU-F	4F	LEU Unit	VOC							0	0	Fugitives: Piping and Equipment Leak	
Not New/Modified	Yes	11F-HDS	11F	Desalter Unit	VOC							0	0	Fugitives: Piping and Equipment Leak	
Not New/Modified	Yes	HDS-FUG	12F	HDS Unit	H2S	0.14	0.62			0.14	0.62	0	0	Fugitives: Piping and Equipment Leak	
					VOC							0	0		
Not New/Modified	Yes	SMR-FUG	13F	H2 Reformer	VOC							0	0	Fugitives: Piping and Equipment Leak	
Not New/Modified	Yes	HRLEU-FUG	18F	LEU -2	VOC							0	0	Fugitives: Piping and Equipment Leak	
Not New/Modified	Yes	LRU	20F	LRU	VOC							0	0	Fugitives: Piping and Equipment Leak	
New/Modified	Yes	HOC-FUG	21/22F	HOC	H2S	0.03	0.12			0.03	0.14	0	*0.02*	Fugitives: Piping and Equipment Leak	
					VOC							0	0		
Not New/Modified	Yes	30B03F	30F	Boiler House	VOC							0	0	Fugitives: Piping and Equipment Leak	
Not New/Modified	Yes	07-F	07F	#07 BUP Flare	VOC							0	0	Control: Flare	
Not New/Modified	Yes	ALKY-FUG	31F	Alky Unit	H2S	0.1	0.43			0.1	0.43	0	0	Fugitives: Piping and Equipment Leak	
					HF	0.52	2.29			0.52	2.29	0	0		
					VOC							0	0		
Not New/Modified	Yes	BUTAMER	36F	Butamer Unit	VOC							0	0	Fugitives: Piping and Equipment Leak	

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Not New/Modified	Yes	MTBE-FUG	37F	Iso-Octene	VOC							0	0	Fugitives: Piping and Equipment Leak	
Not New/Modified	Yes	OLEFLEX-FU	38F	Oleflex Unit	VOC							0	0	Fugitives: Piping and Equipment Leak	
Not New/Modified	Yes	SRU-F	46-24F	SULF-10 Fugitives	H2S	0.1	0.43			0.1	0.43	0	0	Fugitives: Piping and Equipment Leak	
					VOC							0	0		
Not New/Modified	Yes	SRU-FUG	41F	SRU Unit Fugitives	H2S	0.02	0.09			0.02	0.09	0	0	Fugitives: Piping and Equipment Leak	
					VOC							0	0		
Not New/Modified	Yes	HCU-FUG	47F	HCU Unit	H2S	0.15	0.67			0.15	0.67	0	0	Fugitives: Piping and Equipment Leak	
					VOC							0	0		
Not New/Modified	Yes	47PSA	47PSA	PSA Unit	VOC							0	0	Fugitives: Piping and Equipment Leak	
Not New/Modified	Yes	NHT-FUG	48F	NHT Unit	H2S	0.01	0.06			0.01	0.06	0	0	Fugitives: Piping and Equipment Leak	
					VOC							0	0		
Not New/Modified	Yes	CRU-FUG	49F	CRU Unit	VOC							0	0	Fugitives: Piping and Equipment Leak	
Not New/Modified	Yes	49-XFU	175	XFU/RFU/C7Split Unit	VOC							0	0	Fugitives: Piping and Equipment Leak	
Not New/Modified	Yes	GDU-FUG	52F	GDU Unit	VOC							0	0	Fugitives: Piping and Equipment Leak	
Not New/Modified	Yes	DOCKS-F	DOCKS	DK-Docks	VOC							0	0	Fugitives: Piping and Equipment Leak	
Not New/Modified	Yes	08-F	08F	#08FLR/Day Tanks	VOC							0	0	Fugitives: Piping and Equipment Leak	
Not New/Modified	Yes	LPG STORAGE	LPG STGF	LPG STORAGE	VOC							0	0	Fugitives: Piping and Equipment Leak	
Not New/Modified	Yes	MVRUF	MVRUF	MVRU	VOC							0	0	Fugitives: Piping and Equipment Leak	
Not New/Modified	Yes	#TM-Terminal	TERM-F	#TM-Terminal	VOC							0	0	Fugitives: Piping and Equipment Leak	
Not New/Modified	Yes	PIPING-FUG	TRKRACKFUG	TRUCK RACK	VOC							0	0	Fugitives: Piping and Equipment Leak	
Not New/Modified	Yes	WWTP-FUG	83F	Wastewater Treatment Plant	VOC							0	0	Fugitives: Piping and Equipment Leak	
Not New/Modified	Yes	SHU-FUG	54F	Selective Hydrogenation Unit	VOC							0	0	Fugitives: Piping and Equipment Leak	
New/Modified	Yes	SWS-FUG	42F	Sour Water Stripper	H2S	<0.01	0.02			<0.01	0.02	0	0	Fugitives: Piping and Equipment Leak	
					VOC							0	0		
Not New/Modified	Yes	38-SCRUB	168	Oleflex CCR	Cl2	<0.01	0.04			<0.01	0.04	0	0	Control: Absorber	
					H2SO4	<0.01	0.01			<0.01	0.01	0	0		
					HCl	0.06	0.28			0.06	0.28	0	0		
					SO2	0.04	0.19			0.04	0.19	0	0		
Not New/Modified	Yes	73-TK-9	69	Tank - 9	VOC	3.1	0.49			3.1	0.49	0	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
Not New/Modified	Yes	HOC-CT	122	Cooling Tower - HOC	PM	17.71	65.86			3.54	13.17	-14.17	-52.69	Cooling Tower	
					PM10	16.82	62.58			3.36	12.52	-13.46	-50.06		
					PM2.5	2.63	9.78			0.53	1.96	-2.1	-7.82		
					VOC	5.67	21.09			5.67	21.09	0	0		
Not New/Modified	Yes	Alky-CT	123	Cooling Tower - Alky	PM	0.71	2			0.71	2	0	0	Cooling Tower	
					PM10	0.7	1.98			0.7	1.98	0	0		
					PM2.5	0.19	0.55			0.19	0.55	0	0		
					VOC	1.26	3.55			1.26	3.55	0	0		
Not New/Modified	Yes	BUP-CT	167-CT	Cooling Tower - BUP	PM	4.52	19.26			4.52	19.26	0	0	Cooling Tower	
					PM10	4.3	18.33			4.3	18.33	0	0		
					PM2.5	0.67	2.88			0.67	2.88	0	0		
					VOC	1.47	6.27			1.47	6.27	0	0		
Not New/Modified	Yes	Crude-CT	1CT	Cooling Tower - Crude	PM	0.34	1.13			0.34	1.13	0	0	Cooling Tower	
					PM10	0.34	1.11			0.34	1.11	0	0		
					PM2.5	0.06	0.21			0.06	0.21	0	0		
					VOC	0.17	0.55			0.17	0.55	0	0		
Not New/Modified	Yes	ENG-16P04	16-P-04	Engine - 16-P-04	CO	2.2	0.06			2.2	0.06	0	0	Engine: Emergency, Diesel	
					NOx	8	0.21			8	0.21	0	0		
					PM	0.73	0.02			0.73	0.02	0	0		
					PM10	0.73	0.02			0.73	0.02	0	0		
					PM2.5	0.73	0.02			0.73	0.02	0	0		
					SO2	0.68	0.02			0.68	0.02	0	0		
					VOC	0.83	0.02			0.83	0.02	0	0		
Not New/Modified	Yes	ENG-16P07	16-P-07	Engine - 16-P-07	CO	2.67	0.04			2.67	0.04	0	0	Engine: Emergency, Diesel	
					NOx	9.69	0.15			9.69	0.15	0	0		
					PM	0.88	0.01			0.88	0.01	0	0		
					PM10	0.88	0.01			0.88	0.01	0	0		
					PM2.5	0.88	0.01			0.88	0.01	0	0		
					SO2	0.82	0.01			0.82	0.01	0	0		
					VOC	1.01	0.02			1.01	0.02	0	0		
Not New/Modified	Yes	16-P-11	16-P-11	Engine - 16-P-11	CO	0.8	0.02			0.8	0.02	0	0	Engine: Emergency, Diesel	
					NOx	3.32	0.09			3.32	0.09	0	0		

Action Requested (only 1 action per FIN)	Include these emissions in annual (tpy) summary?	Facility ID Number (FIN)	Emission Point Number (EPN)	Source Name	Pollutant	Current Short-Term (lb/hr)	Current Long-Term (tpy)	Consolidated Current Short-Term (lb/hr)	Consolidated Current Long-Term (tpy)	Proposed Short-Term (lb/hr)	Proposed Long-Term (tpy)	Short-Term Difference (lb/hr)	Long-Term Difference (tpy)	Unit Type (Used for reviewing BACT and Monitoring Requirements)	Unit Type Notes (only if "other" unit type in Column O)
					PM	0.11	<0.01			0.11	<0.01	0	0		
					PM10	0.11	<0.01			0.11	<0.01	0	0		
					PM2.5	0.11	<0.01			0.11	<0.01	0	0		
					SO2	0.1	<0.01			0.1	<0.01	0	0		
					VOC	0.12	<0.01			0.12	<0.01	0	0		
Not New/Modified	Yes	16-P-12	16-P-12	Engine - 16-P-12	CO	0.8	0.02			0.8	0.02	0	0	Engine: Emergency, Diesel	
					NOx	3.32	0.09			3.32	0.09	0	0		
					PM	0.11	<0.01			0.11	<0.01	0	0		
					PM10	0.11	<0.01			0.11	<0.01	0	0		
					PM2.5	0.11	<0.01			0.11	<0.01	0	0		
					SO2	0.1	<0.01			0.1	<0.01	0	0		
					VOC	0.12	<0.01			0.12	<0.01	0	0		
Not New/Modified	Yes	16-P-13	16-P-13	Engine - 16-P-13	CO	0.8	0.02			0.8	0.02	0	0	Engine: Emergency, Diesel	
					NOx	3.32	0.09			3.32	0.09	0	0		
					PM	0.11	<0.01			0.11	<0.01	0	0		
					PM10	0.11	<0.01			0.11	<0.01	0	0		
					PM2.5	0.11	<0.01			0.11	<0.01	0	0		
					SO2	0.1	<0.01			0.1	<0.01	0	0		
					VOC	0.12	<0.01			0.12	<0.01	0	0		
Not New/Modified	Yes	16-P-14	16-P-14	Engine - 16-P-14	CO	0.8	0.02			0.8	0.02	0	0	Engine: Emergency, Diesel	
					NOx	3.32	0.09			3.32	0.09	0	0		
					PM	0.11	<0.01			0.11	<0.01	0	0		
					PM10	0.11	<0.01			0.11	<0.01	0	0		
					PM2.5	0.11	<0.01			0.11	<0.01	0	0		
					SO2	0.1	<0.01			0.1	<0.01	0	0		
					VOC	0.12	<0.01			0.12	<0.01	0	0		
Not New/Modified	No	MFL-1	126	Main Flare	CO	See FLARECAP	See FLARECAP			See FLARECAP	See FLARECAP	#VALUE!	#VALUE!	Control: Flare	
					H2S	See FLARECAP	See FLARECAP			See FLARECAP	See FLARECAP	#VALUE!	#VALUE!		
					NOx	See FLARECAP	See FLARECAP			See FLARECAP	See FLARECAP	#VALUE!	#VALUE!		
					SO2	See FLARECAP	See FLARECAP			See FLARECAP	See FLARECAP	#VALUE!	#VALUE!		
					VOC	See FLARECAP	See FLARECAP			See FLARECAP	See FLARECAP	#VALUE!	#VALUE!		
Not New/Modified	No	GF-1	158	Ground Flare	CO	See FLARECAP	See FLARECAP			See FLARECAP	See FLARECAP	#VALUE!	#VALUE!	Control: Flare	
					H2S	See FLARECAP	See FLARECAP			See FLARECAP	See FLARECAP	#VALUE!	#VALUE!		
					NOx	See FLARECAP	See FLARECAP			See FLARECAP	See FLARECAP	#VALUE!	#VALUE!		
					SO2	See FLARECAP	See FLARECAP			See FLARECAP	See FLARECAP	#VALUE!	#VALUE!		
					VOC	See FLARECAP	See FLARECAP			See FLARECAP	See FLARECAP	#VALUE!	#VALUE!		
Not New/Modified	No	MTBE FL-2	127	BUP Flare	CO	See FLARECAP	See FLARECAP			See FLARECAP	See FLARECAP	#VALUE!	#VALUE!	Control: Flare	
					H2S	See FLARECAP	See FLARECAP			See FLARECAP	See FLARECAP	#VALUE!	#VALUE!		
					NOx	See FLARECAP	See FLARECAP			See FLARECAP	See FLARECAP	#VALUE!	#VALUE!		
					SO2	See FLARECAP	See FLARECAP			See FLARECAP	See FLARECAP	#VALUE!	#VALUE!		
					VOC	See FLARECAP	See FLARECAP			See FLARECAP	See FLARECAP	#VALUE!	#VALUE!		
Not New/Modified	No	135	135	Acid Gas Flare (pilot only)	CO	See FLARECAP	See FLARECAP			See FLARECAP	See FLARECAP	#VALUE!	#VALUE!	Control: Flare	
					H2S	See FLARECAP	See FLARECAP			See FLARECAP	See FLARECAP	#VALUE!	#VALUE!		
					NOx	See FLARECAP	See FLARECAP			See FLARECAP	See FLARECAP	#VALUE!	#VALUE!		
					SO2	See FLARECAP	See FLARECAP			See FLARECAP	See FLARECAP	#VALUE!	#VALUE!		
					VOC	See FLARECAP	See FLARECAP			See FLARECAP	See FLARECAP	#VALUE!	#VALUE!		
Not New/Modified	Yes	Various	FLARECAP	Flares Subcap	CO	113.27	121.03			113.27	121.03	0	0	Other	Emission Cap
Not New/Modified	Yes	Various	FLARECAP		H2S	0.04	0.11			0.04	0.11	0	0		
Not New/Modified	Yes	Various	FLARECAP		NOx	23.04	20.77			23.04	20.77	0	0		
Not New/Modified	Yes	Various	FLARECAP		SO2	3.55	10.43			3.55	10.43	0	0		
Not New/Modified	Yes	Various	FLARECAP		VOC	291.17	63.51			291.17	63.51	0	0		
Not New/Modified	Yes	BARGEDOCKS	31	Loading - Heavy Oil	VOC	14.96	4.72			14.96	4.72	0	0	Loading: Marine Vessel	

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Not New/Modified	Yes	SHIP FUG	SHIP FUG	Loading - Ships Fugitives	VOC	237.46	91.74			237.46	91.74	0	0	Loading: Marine Vessel	
Not New/Modified	Yes	VRU	VRU	Loading - MVRU	VOC	61.33	23.13			61.33	23.13	0	0	Control: Adsorption System: Regenerative	
Not New/Modified	Yes	LOADINGFUG	TRUCKFUG	Loading - Truck Fugitives	VOC	11.86	15.87			11.86	15.87	0	0	Loading: Truck	
Not New/Modified	Yes	T-RACK	TRUCKCOMB	Loading - Truck Combustor	CO	15.28	22.76			15.28	22.76	0	0	Control: Vapor Combustor	
					NOx	7.64	11.38			7.64	11.38	0	0		
					SO2	0.02	0.03			0.02	0.03	0	0		
					VOC	8.18	13.61			8.18	13.61	0	0		
					PM	0.23	0.34			0.23	0.34	0	0		
					PM10	0.23	0.34			0.23	0.34	0	0		
					PM2.5	0.23	0.34			0.23	0.34	0	0		
Not New/Modified	Yes	AE-49601A/B	AE-49601A/B	AE-49601A/B Analyzer Vent	VOC	0.01	0.01			0.01	0.01	0	0	Other	Analyzer Vent
Not New/Modified	Yes	AE-49900A/B	AE-49900A/B	AE-49900A/B Analyzer Vent	VOC	0.01	0.01			0.01	0.01	0	0	Other	Analyzer Vent
Not New/Modified	Yes	AE-49901A/B	AE-49901A/B	AE-49901A/B Analyzer Vent	VOC	0.01	0.01			0.01	0.01	0	0	Other	Analyzer Vent
New/Modified	Yes	24-ST-01	121	HOC Belco Scrubber	CO	889.96	1470.33			958.4	1559.15	*68.44*	*88.8201*	Fluid Catalytic Cracking Unit	
					HCN	80.47	320.4			80.47	320.4	0	0		
					H2SO4	49	214.62			49	199.3	0	**-15.32**		
					NH3	0	0			4.84	17.88	*4.84*	*17.88*		
					NOx	356.2	473.81			384.12	473.81	*27.92*	0		
					PM	120.32	527			140	569.4	*19.68*	*42.4*		
					PM10	120.32	527			140	569.4	*19.68*	*42.4*		
					PM2.5	120.32	527			140	569.4	*19.68*	*42.4*		
					SO2	203.53	420.09			219.22	420.12	*15.69*	*0.0301*		
					VOC	28.02	115.53			30.18	122.74	*2.16*	*7.21*		
					CO2						2451673	0	*2451673*		
					CH4						72.08	0	*72.08*		
					N2O						14.42	0	*14.42*		
					CO2 Equivalent						2457772	0	*2457772*		
Not New/Modified	Yes	SCOT/SRU	121	SRU Incinerators Cap	CO	220.75	678.85			220.75	678.85	0	0	SRU: Refinery	
					H2S	5.82	18.73			5.82	18.73	0	0		
					NOx	54.64	239.31			54.64	239.31	0	0		
					PM	24.72	98.38			24.72	98.38	0	0		
					PM10	24.72	98.38			24.72	98.38	0	0		
					PM2.5	24.72	98.38			24.72	98.38	0	0		
					SO2	191.32	837.99			191.32	837.99	0	0		
					VOC	0.96	3.46			0.96	3.46	0	0		
Not New/Modified	Yes	SCOT/SRU	121	Temporary SRU Stack	CO	10.04	7.23			10.04	7.23	0	0	SRU: Refinery	
					H2S	0.047	0.03			0.047	0.03	0	0		
					NOx	1.233	0.72			1.233	0.72	0	0		
					PM	1.205	0.87			1.205	0.87	0	0		
					PM10	1.205	0.87			1.205	0.87	0	0		
					PM2.5	1.205	0.87			1.205	0.87	0	0		
					SO2	13.816	9.95			13.816	9.95	0	0		
New/Modified	Yes	Various	FUG-CAP	Fugitives Subcap	VOC	101.17	443.11			107.87	472.44	*6.7*	*29.33*	Fugitives: Piping and Equipment Leak	
					H2S	0	0			0.01	0.06	*0.01*	*0.06*		
					NH3	0	0			0.01	0.06	*0.01*	*0.06*		
					CH4						3.59	0	*3.59*		
					CO2 Equivalent						90	0	*90*		
Not New/Modified	Yes	49-SCRUB	155	CRU CCR	HCl	0.07	0.29			0.07	0.29	0	0	Control: Absorber	
Not New/Modified	Yes	13-H-01B	118	SMR Condenser Vent	VOC	3.64	15.94			3.64	15.94	0	0	Process Vent	
Not New/Modified	Yes	MAGNACAT	21 BH	MAGNACAT Unit	PM	0.18	0.6			0.18	0.6	0	0	Control: Bag Filter/Baghouse	
					PM10	0.18	0.6			0.18	0.6	0	0		
					PM2.5	0.18	0.6			0.18	0.6	0	0		
Not New/Modified	Yes	83-TK-25	187	Tank 25	H2S	0.02	0.04			0.02	0.04	0	0	Storage Tank (4): Floating roof with TVP <11.0 psia	
					NH3	<0.01	<0.01			<0.01	<0.01	0	0		
					VOC	1.43	5.33			1.43	5.33	0	0		
Not New/Modified	Yes	ENG-83P136A	83-P-136A	Engine 83-P-136A-EN	CO	2.48	0.06			2.48	0.06	0	0	Engine: Emergency, Diesel	
					NOx	7.43	0.19			7.43	0.19	0	0		
					PM	0.38	<0.01			0.38	<0.01	0	0		
					PM10	0.38	<0.01			0.38	<0.01	0	0		
					PM2.5	0.38	<0.01			0.38	<0.01	0	0		
					SO2	0.88	0.02			0.88	0.02	0	0		

Action Requested (only 1 action per FIN)	Include these emissions in annual (tpy) summary?	Facility ID Number (FIN)	Emission Point Number (EPN)	Source Name	Pollutant	Current Short-Term (lb/hr)	Current Long-Term (tpy)	Consolidated Current Short-Term (lb/hr)	Consolidated Current Long-Term (tpy)	Proposed Short-Term (lb/hr)	Proposed Long-Term (tpy)	Short-Term Difference (lb/hr)	Long-Term Difference (tpy)	Unit Type (Used for reviewing BACT and Monitoring Requirements)	Unit Type Notes (only if "other" unit type in Column O)
					VOC	7.43	0.19			7.43	0.19	0	0		
Not New/Modified	Yes	ENG-83P136B	83-P-136B	Engine 83-P-136B-EN	CO	2.48	0.06			2.48	0.06	0	0	Engine: Emergency, Diesel	
					NOx	7.43	0.19			7.43	0.19	0	0		
					PM	0.38	<0.01			0.38	<0.01	0	0		
					PM10	0.38	<0.01			0.38	<0.01	0	0		
					PM2.5	0.38	<0.01			0.38	<0.01	0	0		
					SO2	0.88	0.02			0.88	0.02	0	0		
					VOC	7.43	0.19			7.43	0.19	0	0		
Not New/Modified	Yes	WWTP-OWS	WWTP-OWS	WW collection system	VOC	8.62	37.77			8.62	37.77	0	0	Wastewater Facilities	
Not New/Modified	Yes	83-TK-26	186	Tank 26	VOC	0.12	0.45			0.12	0.45	0	0	Storage Tank (4): Floating roof with TVP <11.0 psia	
Not New/Modified	Yes	83-TK-159	184	Tank 159	VOC	0.15	0.39			0.15	0.39	0	0	Storage Tank (4): Floating roof with TVP <11.0 psia	
Not New/Modified	Yes	83-TK-160	185	Tank 160	VOC	0.15	0.39			0.15	0.39	0	0	Storage Tank (4): Floating roof with TVP <11.0 psia	
Not New/Modified	Yes	83-V-97	83-V-97	Tank 97	VOC	0.18	0.4			0.18	0.4	0	0	Storage Tank (4): Floating roof with TVP <11.0 psia	
Not New/Modified	Yes	83-V-58	83-V-58	Tank 58	VOC	0.11	0.44			0.11	0.44	0	0	Storage Tank (4): Floating roof with TVP <11.0 psia	
Not New/Modified	Yes	83-V-59	83-V-59	Tank 59	VOC	0.11	0.44			0.11	0.44	0	0	Storage Tank (4): Floating roof with TVP <11.0 psia	
Not New/Modified	Yes	83-TK-162	183a	Tank 162	VOC	0.39	1.77			0.39	1.77	0	0	Storage Tank (4): Floating roof with TVP <11.0 psia	
Not New/Modified	Yes	83-TK-155	182	Tank 155	VOC	0.39	1.77			0.39	1.77	0	0	Storage Tank (4): Floating roof with TVP <11.0 psia	
Not New/Modified	Yes	APISEP	124	API/DGF Combustor	CO	1.65	7.22			1.65	7.22	0	0	Control: Vapor Combustor	
					NOx	0.45	1.76			0.45	1.76	0	0		
					SO2	0.03	0.13			0.03	0.13	0	0		
					VOC	2.94	12.88			2.94	12.88	0	0		
Not New/Modified	Yes	83-TK-23	62	Equalization Tank	VOC	0.81	3.51			0.81	3.51	0	0	Storage Tank (4): Floating roof with TVP <11.0 psia	
Not New/Modified	Yes	83-TK27	83-TK27	Bio Oxidation Reactor Tank	VOC	0.51	2.22			0.51	2.22	0	0	Wastewater Facilities	
Not New/Modified	Yes	WWTP-AERB	WWTP-AERB	Aeration Basin	VOC	0.25	1.09			0.25	1.09	0	0	Wastewater Facilities	
Not New/Modified	Yes	WWTP-CLRF	WWTP-CLRF	Clarifier	VOC	<0.01	0.04			<0.01	0.04	0	0	Wastewater Facilities	
Not New/Modified	Yes	WWTP-SLB	WWTP-SLB	Saline Basin	VOC	<0.01	<0.01			<0.01	<0.01	0	0	Wastewater Facilities	
Not New/Modified	Yes	CAS01-01	01-01	Crude/Vacuum Unit Pump Alley	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS01-02	01-02	North Side of Vacuum Unit	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS01-03	01-03	North Side of Vacuum Unit	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS01-04	01-04	Northwest Side of Vacuum Unit - Main Sump	VOC	<0.01	0.03			<0.01	0.03	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS03-01	03-01	N of Tanks 156/161	VOC	0.02	0.08			0.02	0.08	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS98-02	98-02	WP MSAT Rail Rack	VOC	0.02	0.08			0.02	0.08	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS11-01	11-01	Desalter Pump Alley	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS41-01	41-01	North of 43-TK-08 (Amine Tank)	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS41-02	41-02	W of 41-V-05 (Acid Gas K.O. Drum)	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS49-01	49-01	Northwest of XFU	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS49-02	49-02	North Side of NHT (Unit 48)	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS49-03	49-03	NHT (Unit 48) Pump Alley	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS50-01	50-01	East of Tank 62	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS52-01	52-01	NW of GDU MCC Room	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS70-01	70-01	East of Tank 55	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS70-02	70-02	Northwest of Tank 106	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS70-03	70-03	West of Tank 94 (S&D Main Sump)	VOC	<0.01	0.03			<0.01	0.03	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS72-01	72-01	East of Tank 111	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS73-01	73-01	North of Tank 152 (Terminal 2A)	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS73-02	73-02	Between TK 8 & TK 164 (Terminal 2)	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS83-01	83-01	WWT (Hydroblast Pad)	VOC	0.02	0.07			0.02	0.07	0	0	Control: Adsorption System: Disposable	

Texas Commission on Environmental Quality
Form PI-1 General Application
Unit Types - Emission Rates

Action Requested (only 1 action per FIN)	Include these emissions in annual (tpy) summary?	Facility ID Number (FIN)	Emission Point Number (EPN)	Source Name	Pollutant	Current Short-Term (lb/hr)	Current Long-Term (tpy)	Consolidated Current Short-Term (lb/hr)	Consolidated Current Long-Term (tpy)	Proposed Short-Term (lb/hr)	Proposed Long-Term (tpy)	Short-Term Difference (lb/hr)	Long-Term Difference (tpy)	Unit Type (Used for reviewing BACT and Monitoring Requirements)	Unit Type Notes (only if "other" unit type in Column O)
Not New/Modified	Yes	CAS83-02	83-02	WWT (Desalter Lift Station)	VOC	0.01	0.05			0.01	0.05	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS83-03	83-03	WWT (East of KOH Treater)	VOC	0.02	0.07			0.02	0.07	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS83-04	83-04	WWT (Northeast of Tank 159)	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS83-05	83-05	WWT (North Lift Station)	VOC	<0.01	0.03			<0.01	0.03	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS83-06	83-06	WWT (North of V-68)	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS83-07	83-07	WWT (South of V-55)	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS83-09	83-09	WWT (BSRP)	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	83-10	83-10	WWT 83-V-99 (Diversion Box)	VOC	0.02	0.07			0.02	0.07	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	83-12	83-12	WWT 83-V-28 (SE of Catalyst Pad)	VOC	0.02	0.07			0.02	0.07	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS98-01	V-201	WP MSAT Rail Rack	VOC	0.51	2.23			0.51	2.23	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	APISEP	124a	WP WWT API Combustor Backup	VOC	0.02	0.08			0.02	0.08	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	16-V-11	16-V-11	FWP 16-P-11 Diesel Tank	VOC	0.03	<0.01			0.03	<0.01	0	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
Not New/Modified	Yes	16-V-12	16-V-12	FWP 16-P-12 Diesel Tank	VOC	0.03	<0.01			0.03	<0.01	0	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
Not New/Modified	Yes	16-V-13	16-V-13	FWP 16-P-13 Diesel Tank	VOC	0.03	<0.01			0.03	<0.01	0	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
Not New/Modified	Yes	16-V-14	16-V-14	FWP 16-P-14 Diesel Tank	VOC	0.03	<0.01			0.03	<0.01	0	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
Not New/Modified	Yes	FWP-FUG	FWP-FUG	Firewater Pump Engine Fugitives	VOC	0.06	0.26			0.06	0.26	0	0	Fugitives: Piping and Equipment Leak	
New/Modified	Yes	30-B-05	30-B-05	Boiler 30-B-05	CO	0	0			33.48	70.84	33.48	70.84	Boiler: Liquid and Gas Fuel, > 40 MMBtu/hr	
					NH3	0	0			2.18	8.68	2.18	8.68		
					NOx	0	0			7.16	30.14	7.16	30.14		
					PM	0	0			3.56	14.16	3.56	14.16		
					PM10	0	0			3.56	14.16	3.56	14.16		
					PM2.5	0	0			3.56	14.16	3.56	14.16		
					SO2	0	0			7.7	21.15	7.7	21.15		
					VOC	0	0			2.57	10.25	2.57	10.25		
					CO2	0	0				222364	0	222364		
					CH4	0	0				4.19	0	4.19		
					N2O	0	0				0.42	0	0.42		
					CO2 Equivalent	0	0				222594	0	222594		
New/Modified	Yes	30-B-05	30-B-05	Boiler 30-B-05 (MSS)	CO	0	0			167.39	0	167.39	0	Boiler: Liquid and Gas Fuel, > 40 MMBtu/hr	
					NOx	0	0			71.61	0	71.61	0		
New/Modified	Yes	HOC-PP-CT	HOC-PP-CT		PM	0	0			0.78	3.42	0.78	3.42	Cooling Tower	
					PM10	0	0			0.18	0.81	0.18	0.81		
					PM2.5	0	0			<0.01	0.005	0.01	0.005		
					VOC	0	0			1.09	4.78	1.09	4.78		
New/Modified	Yes	CAS-HOCPP	CAS-HOCPP		VOC	0	0			<0.01	0.02	0.01	0.02	Control: Adsorption System: Disposable	
New/Modified	Yes	MEROX	121/ 30-B-05		VOC	0	0			0.24	1.05	0.24	1.05	Process Vent	
					SO2	0	0			3.86	16.91	3.86	16.91		
					H2S	0	0			<0.01	<0.01	0.01	0.01		

Texas Commission on Environmental Quality
Form PI-1 General Application
Stack Parameters

Emission Point Discharge Parameters													
EPN	Included in EMEW?	UTM Coordinates Zone	East (Meters)	North (Meters)	Building Height (ft)	Height Above Ground (ft)	Stack Exit Diameter (ft)	Velocity (FPS)	Temperature (°F)	Fugitives - Length (ft)	Fugitives - Width (ft)	Fugitives - Axis Degrees
MSS Caps	Yes											
1	Yes											
131	Yes											
132	Yes											
74	Yes											
114	Yes											
115	Yes											
116	Yes											
118	Yes											
153	Yes											
30-B-04	Yes											
30-B-04MSS	Yes											
117	Yes											
120	Yes											
162	Yes											
119	Yes											
150	Yes											
151	Yes											
152	Yes											
172	Yes											
49-H-90	Yes											
195	Yes											
1F	Yes											
2F	Yes											
4F	Yes											
11F	Yes											
12F	Yes											
13F	Yes											
18F	Yes											
20F	Yes											
21/22F	Yes											
30F	Yes											
07F	Yes											
31F	Yes											
36F	Yes											
37F	Yes											
38F	Yes											
46-24F	Yes											
41F	Yes											
47F	Yes											
47PSA	Yes											
48F	Yes											
49F	Yes											
175	Yes											
52F	Yes											
DOCKS	Yes											
08F	Yes											
LPG STGF	Yes											
MVRUF	Yes											
TERM-F	Yes											
TRKRACKFUG	Yes											

Texas Commission on Environmental Quality
Form PI-1 General Application
Stack Parameters

EPN	Included in EMEW?	UTM Coordinates Zone	East (Meters)	North (Meters)	Building Height (ft)	Height Above Ground (ft)	Stack Exit Diameter (ft)	Velocity (FPS)	Temperature (°F)	Fugitives - Length (ft)	Fugitives - Width (ft)	Fugitives - Axis Degrees
83F	Yes											
54F	Yes											
42F	Yes											
168	Yes											
69	Yes											
122	Yes											
123	Yes											
167-CT	Yes											
1CT	Yes											
16-P-04	Yes											
16-P-07	Yes											
16-P-11	Yes											
16-P-12	Yes											
16-P-13	Yes											
16-P-14	Yes											
126	Yes											
158	Yes											
127	Yes											
135	Yes											
FLARECAP	Yes											
31	Yes											
SHIP FUG	Yes											
VRU	Yes											
TRUCKFUG	Yes											
TRUCKCOMB	Yes											
AE-49601A/B	Yes											
AE-49900A/B	Yes											
AE-49901A/B	Yes											
121	Yes											
FUG-CAP	Yes											
155	Yes											
21 BH	Yes											
187	Yes											
83-P-136A	Yes											
83-P-136B	Yes											
WWTP-OWS	Yes											
186	Yes											
184	Yes											
185	Yes											
83-V-97	Yes											
83-V-58	Yes											
83-V-59	Yes											
183a	Yes											
182	Yes											
124	Yes											
62	Yes											
83-TK27	Yes											
WWTP-AERB	Yes											
WWTP-CLRF	Yes											

I. Public Notice Applicability

A. Application Type

Is this an application for a new or major modification of a PSD (including GHG), Nonattainment, or HAP permit?	Yes
Is this an application for a minor permit amendment?	Yes
Is there any change in character of emissions in this application (such as a new VOC or PM species)?	No
Is there a new air contaminant in this application (such as a newly emitted or newly quantified criteria pollutant)?	No

B. Project Increases and Public Notice Thresholds (for Initial and Amendment Projects)

For public notice applicability, the agency does not include consolidation or incorporation of any previously authorized facility or activity (PBR, standard permits, etc.), changes to permitted allowable emission rates when exclusively due to changes to standardized emission factors, or reductions in emissions which are not enforceable through the amended permit. Thus, the total emissions increase would be the sum of emissions increases under the amended permit and the emissions decreases under the amended permit for each air contaminant.

The table below will generate emission increases based on the values represented on the "Unit Types - Emission Rates" sheet. Use the "yes" and "no" options in column B of the "Unit Types - Emission Rates" worksheet to indicate if a unit's proposed change of emissions should be included in these totals.

Notes:
1. Emissions of PM, PM10, and/or PM2.5 may have been previously quantified and authorized as PM, PM10,and/or PM2.5. These emissions will be speciated based on current guidance and policy to demonstrate compliance with current standards and public notice requirements may change during the permit review.

Do the facilities handle, load, unload, dry, manufacture, or process grain, seed, legumes, or vegetable fibers (agricultural facilities)?	No

Pollutant	Current Long-Term (tpy)	Consolidated Emissions (tpy)	Proposed Long-Term (tpy)	Project Change in Allowable (tpy)	PN Threshold	Notice required?
VOC	1023.71	0.00	1076.74	53.03	5	Yes
PM	832.06	0.00	840.90	8.84	5	Yes*
PM_{10}	827.71	0.00	836.57	8.86	5	Yes*
$PM_{2.5}$	757.11	0.00	807.41	50.30	5	Yes*
NO_x	1604.21	0.00	1641.33	37.12	5	Yes
CO	2982.70	0.00	3183.10	200.40	50	Yes
SO_2	1557.20	0.00	1596.95	39.75	10	Yes
Pb	0.00	0.00	0.00	0.00	0.6	No
H2S	21.7	0	21.79	0.09	5	No
NH3	10.63	0	37.25	26.62	5	Yes
Exempt Solvents	0.6	0	0.6	0	5	No
HF	2.29	0	2.29	0	5	No
Cl2	0.04	0	0.04	0	5	No
H2SO4	214.63	0	199.31	-15.32	5	No
HCl	0.57	0	0.57	0	5	No
HCN	320.4	0	320.4	0	5	No
CO2	0	0	2674037	2674037	5	Yes
CH4	0	0	79.86	79.86	5	Yes
N2O	0	0	14.84	14.84	5	Yes
CO2 Equivalent	0	0	2680456	2680456	**	Yes

* Notice is required for PM, PM10, and PM2.5 if one of these pollutants is above the threshold.

** Notice of a GHG action is determined by action type. Initial and major modification always require notice. Voluntary updates require a consolidated notice if there is a change to BACT. Project emission increases of CO2e (CO2 equivalent) are not relevant for determining public notice of GHG permit actions.

D. Is public notice required for this project as represented in this PI-1? If no, proceed to Section III Small Business Classification. Note: public notice applicability for this project may change throughout the technical review.	Yes
E. Are any HAPs to be authorized/re-authorized with this project? The category "HAPs" must be specifically listed in the public notice if the project authorizes (reauthorizes for renewals) any HAP pollutants.	No

II. Public Notice Information

Complete this section if public notice is required (determined in the above section) or if you are not sure if public notice is required.

A. Contact Information

Enter the contact information for the **person responsible for publishing.** This is a designated representative who is responsible for ensuring public notice is properly published in the appropriate newspaper and signs are posted at the facility site. This person will be contacted directly when the TCEQ is ready to authorize public notice for the application.

Prefix (Mr., Ms., Dr., etc.):	Ms.
First Name:	Meagan
Last Name:	Marquard
Title:	Superintendent Environmental
Company Name:	Valero Refining - Texas, L.P.
Mailing Address:	PO Box 9370
Address Line 2:	
City:	Corpus Christi
State:	TX
ZIP Code:	78469
Telephone Number:	361-299-8913
Fax Number:	361-289-3126
Email Address:	Meagan.Marquard@valero.com

Enter the contact information for the **Technical Contact.** This is the designated representative who will be listed in the public notice as a contact for additional information.

Prefix (Mr., Ms., Dr., etc.):	Ms.
First Name:	Meagan
Last Name:	Marquard
Title:	Superintendent Environmental
Company Name:	Valero Refining - Texas, L.P.
Mailing Address:	PO Box 9370
Address Line 2:	
City:	Corpus Christi
State:	TX
ZIP Code:	78469
Telephone Number:	361-299-8913
Fax Number:	361-289-3126
Email Address:	Meagan.Marquard@valero.com

B. Public place

Place a copy of the full application (including the entire completed PI-1 and all attachments) at a public place in the county where the facilities are or will be located. You must state where in the county the application will be available for public review and comment. The location must be a public place and described in the notice. A public place is a location which is owned and operated by public funds (such as libraries, county courthouses, city halls) and cannot be a commercial enterprise. You are required to pre-arrange this availability with the public place indicated below. The application must remain available from the first day of publication through the designated comment period.

If this is an application for a PSD, nonattainment, or FCAA §112(g) permit, the public place must have internet access available for the public as required in 30 TAC § 39.411(f)(3).

If the application is submitted to the agency with information marked as Confidential, you are required to indicate which specific portions of the application are not being made available to the public. These portions of the application must be accompanied with the following statement: ***Any request for portions of this application that are marked as confidential must be submitted in writing, pursuant to the Public Information Act, to the TCEQ Public Information Coordinator, MC 197, P.O. Box 13087, Austin, Texas 78711-3087.***

Name of Public Place:	Owen R. Hopkins Public Library
Physical Address:	3202 McKenzie Road
Address Line 2:	
City:	Corpus Christi
ZIP Code:	78410
County:	Nueces
Has the public place granted authorization to place the application for public viewing and copying?	Yes
Does the public place have Internet access available for the public?	Yes

C. Alternate Language Publication

In some cases, public notice in an alternate language is required. If an elementary or middle school nearest to the facility is in a school district required by the Texas Education Code to have a bilingual program, a bilingual notice will be required. If there is no bilingual program required in the school nearest the facility, but children who would normally attend those schools are eligible to attend bilingual programs elsewhere in the school district, the bilingual notice will also be required. If it is determined that alternate language notice is required, you are responsible for ensuring that the publication in the alternate language is complete and accurate in that language.

Is a bilingual program required by the Texas Education Code in the School District?	Yes
Are the children who attend either the elementary school or the middle school closest to your facility eligible to be enrolled in a bilingual program provided by the district?	Yes
If yes to either question above, list which language(s) are required by the bilingual program.	Spanish
Enter the second required language, if applicable.	

D. PSD and Nonattainment Permits Only

If this is an application for emissions of GHGs, select either "Separate Public Notice" or "Consolidated Public Notice". Note: Separate public notices requires a separate application.	Consolidated Public Notice

We must notify the applicable county judge and presiding officer when a PSD or Nonattainment permit or modification application is received. This information can be obtained at the link below:

https://www.txdirectory.com

Provide the information for the **County Judge** for the location where the facility is or will be located.

The Honorable:	Barbara Canales
Mailing Address:	901 Leopard, Room 303
Address Line 2:	
City:	Corpus Christi
State:	Texas
ZIP Code:	78401

Provide the information for the **Presiding Officer(s)** of the municipality for this facility site. This is frequently the Mayor.

First Name:	Paulette
Last Name:	Guajardo
Title:	Mayor
Mailing Address:	P.O. Box 9277
Address Line 2:	
City:	Corpus Christi
State:	Texas
ZIP Code:	78469
Are the proposed facilities located within 100 km or less of an affected state or Class I Area?	No

III. Small Business Classification

Complete this section to determine small business classification. If a small business requests a permit, agency rules (30 TAC § 39.603(f)(1)(A)) allow for alternative public notification requirements if all of the following criteria are met. If these requirements are met, public notice does not have to include publication of the prominent (12 square inch) newspaper notice.

Does the company (including parent companies and subsidiary companies) have fewer than 100 employees or less than $6 million in annual gross receipts?	No
Small business classification:	**No**

Texas Commission on Environmental Quality
Form PI-1 General Application
Federal Applicability

Date: 9/30/2021
Permit #: 38754
Company: Valero Refining - Texas, L.P.

I. County Classification	
Does the project require retrospective review?	No
County (completed for you from your response on the General sheet)	Nueces
This project will be located in an area that is in attainment for ozone as of Sept. 23, 2019. Select from the drop-down list to the right if you would like the project to be reviewed under a different classification.	
Determination:	**This project will be located in an area that is in attainment or unclassified for all pollutants. Nonattainment review is not required.**

II. PSD and GHG PSD Applicability Summary

Is netting required for the PSD analysis for this project?	**Yes**

If yes, the project increases listed below should be after netting has been performed. Attach the netting information to the application.

Pollutant	**Project Increase (after netting)**	**Threshold**	**PSD Review Required?**
CO	413.3	100	Yes
NO_x	298.8	40	Yes
PM	241.7	25	Yes
PM_{10}	239.1	15	Yes
$PM_{2.5}$	238.3	10	Yes
SO_2	447.7	40	Yes
Ozone (as VOC)	110.7	40	Yes
Ozone (as NOx)	298.8	40	Yes
Pb	0		Yes
H_2S	0.6	10	No
TRS	0.6	10	No
Reduced sulfur compounds (including H_2S)	0.6	10	No
H_2SO_4	168.6	7	Yes
Fluoride (excluding HF)	0		Yes
CO2e	1110869	75000	Yes

Texas Commission on Environmental Quality
Form PI-1 General Application
Fees

Date: 9/30/2021
Permit #: 38754
Company: Valero Refining - Texas, L.P.

I. Expedited Permitting Request	
Are you requesting to expedite this project?	Yes
Does the purpose of the application associated with this request to expedite benefit the economy of this state or an area of this state? If no, this project does not qualify for expedited permitting.	Yes
Surcharge amount due	$ 20,000.00
Surcharge amount paid	$ 20,000.00
Enter the check, money order, ePay Voucher, or other transaction number.	ePay Voucher No. 530715
You must request expedited processing and pay the fee through STEERS when submitting your ePermit application.	

II. General Information - Non-Renewal	
Is this project for new facilities controlled and operated directly by the federal government? (30 TAC § 116.141(b)(1) and 30 TAC § 116.163(a))	No
A fee of $75,000 shall be required if no estimate of capital project cost is included with the permit application. (30 TAC § 116.141(d)) Select "yes" here to use this option.	Yes
Select Application Type	Major Application

In signing the "General" sheet with this fee worksheet attached, I certify that the total estimated capital cost of the project as defined in 30 TAC §116.141 is equal to or less than the above figure. I further state that I have read and understand Texas Water Code § 7.179, which defines Criminal Offenses for certain violations, including intentionally or knowingly making, or causing to be made, false material statements or representations.

Your estimated capital cost:	Maximum fee appies.
Permit Application Fee:	**$75,000.00**

VII. Total Permit Fees	
Note: fees can be paid together with one payment or as two separate payments.	
Non-Renewal Fee	$75,000.00
Total	$75,000.00

VIII. Payment Information	
A. Payment One (required)	
Was the fee paid online?	Yes
Enter the fee amount:	$ 75,000.00
Enter the check, money order, ePay Voucher, or other transaction number (enter "STEERS" if submitting and paying through STEERS):	ePay Voucher No. 530714 STEERS
Enter the Company name as it appears on the check:	
C. Total Paid	**$75,000.00**

IX. Professional Engineer Seal Requirement	
Is the estimated capital cost of the project above $2 million?	Yes
Is this project subject to an exemption contained in the Texas Engineering Practice Act (TEPA)? (30 TAC § 116.110(f))	No
Is the application required to be submitted under the seal of a Texas licensed P.E.? Note: an electronic PE seal is acceptable.	Yes

Date: 9/30/2021
Permit #: 38754
Company: Valero Refining - Texas, L.P.

Pollutant	Does this pollutant require PSD review?	How will you demonstrate that this project meets all applicable requirements?	Notes
Ozone	Yes	Protocol (required for all PSD projects, excluding GHG PSD)	Attach a protocol meeting all requirements listed on the TCEQ website.
VOC	No	MERA steps 0-2 AND Modeling (screen or refined)	Attach both an "Electronic Modeling Evaluation Workbook" (EMEW) AND a detailed description of which MERA step was met. Include speciated emission rates with the total VOC and/or PM species corresponding to the short-term and long-term differences represented on the Unit Types-Emission Rates sheet.
CO	Yes	Protocol (required for all PSD projects, excluding GHG PSD)	Attach a protocol meeting all requirements listed on the TCEQ website.
H2S	No	Modeling: screen or refined	Attach a completed "Electronic Modeling Evaluation Workbook" (EMEW).
NH3	No	Modeling: screen or refined	Attach a completed "Electronic Modeling Evaluation Workbook" (EMEW).
NOx	Yes	Protocol (required for all PSD projects, excluding GHG PSD)	Attach a protocol meeting all requirements listed on the TCEQ website.

Date: 9/30/2021
Permit #: 38754
Company: Valero Refining - Texas, L.P.

Pollutant	Does this pollutant require PSD review?	How will you demonstrate that this project meets all applicable requirements?	Notes
PM	Yes	Protocol (required for all PSD projects, excluding GHG PSD)	Attach a protocol meeting all requirements listed on the TCEQ website.
PM10	Yes	Protocol (required for all PSD projects, excluding GHG PSD)	Attach a protocol meeting all requirements listed on the TCEQ website.
PM2.5	Yes	Protocol (required for all PSD projects, excluding GHG PSD)	Attach a protocol meeting all requirements listed on the TCEQ website.
SO2	Yes	Protocol (required for all PSD projects, excluding GHG PSD)	Attach a protocol meeting all requirements listed on the TCEQ website.
Exempt Solvents	No	Protocol (required for all PSD projects, excluding GHG PSD)	Attach a protocol meeting all requirements listed on the TCEQ website.
HF	No	Not applicable	This pollutant is not a part of this project or does not require an impacts analysis.

Pollutant	Does this pollutant require PSD review?	How will you demonstrate that this project meets all applicable requirements?	Notes
Cl_2	No	Not applicable	This pollutant is not a part of this project or does not require an impacts analysis.
H_2SO_4	Yes	Protocol (required for all PSD projects, excluding GHG PSD)	Attach a protocol meeting all requirements listed on the TCEQ website.
HCl	No	Not applicable	This pollutant is not a part of this project or does not require an impacts analysis.
HCN	No	Not applicable	This pollutant is not a part of this project or does not require an impacts analysis.
CO_2			
CH_4			

Date: 9/30/2021
Permit #: 38754
Company: Valero Refining - Texas, L.P.

Pollutant	Does this pollutant require PSD review?	How will you demonstrate that this project meets all applicable requirements?	Notes
N2O			
CO2 Equivalent			

Texas Commission on Environmental Quality
Form PI-1 General Application
BACT

Action Requested	FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
New/Modified	Various	MSS Activities	CO	See Additional Notes:	Yes	See Application Section 6
			H2S	See Additional Notes:	Yes	See Application Section 6
			NH3	See Additional Notes:	Yes	See Application Section 6
			NOx	See Additional Notes:	Yes	See Application Section 6
			PM	The emission reduction techniques for PM10 and PM2.5 will follow the technique for PM. See Additional Notes:	Yes	See Application Section 6
			SO2	See Additional Notes:	Yes	See Application Section 6
			VOC	See Additional Notes:	Yes	See Application Section 6
			Exempt Solvents	See Additional Notes:	Yes	See Application Section 6
			MSS	Not required since this is a MSS unit type.	Yes	
New/Modified	HOC-FUG	Fugitives: Piping and Equipment Leak	H2S	AVO inspection twice per shift. Appropriate credit for AVO program.	Yes	
			VOC	Specify which is applicable: 1. Uncontrolled VOC emissions < 10 tpy: none 2. 10 tpy < uncontrolled VOC emissions < 25 tpy: 28M leak detection and repair program. 75% credit for 28M. 3. Uncontrolled VOC emissions > 25 tpy: 28VHP leak detection and repair program. 97% credit for valves, 85% for pumps and compressors. 4. VOC vp < 0.002 psia: no inspection required, no fugitive emissions expected. For emissions of approved odorous compounds (chlorine, ammonia, hydrogen sulfide, hydrogen cyanide and mercaptans only): AVO inspection twice per shift. Appropriate credit for AVO program.	Yes	See Application Section 6
			MSS	Same as normal operation BACT requirements.	Yes	
New/Modified	SWS-FUG	Fugitives: Piping and Equipment Leak	H2S	AVO inspection twice per shift. Appropriate credit for AVO program.	Yes	
			VOC	Specify which is applicable: 1. Uncontrolled VOC emissions < 10 tpy: none 2. 10 tpy < uncontrolled VOC emissions < 25 tpy: 28M leak detection and repair program. 75% credit for 28M. 3. Uncontrolled VOC emissions > 25 tpy: 28VHP leak detection and repair program. 97% credit for valves, 85% for pumps and compressors. 4. VOC vp < 0.002 psia: no inspection required, no fugitive emissions expected. For emissions of approved odorous compounds (chlorine, ammonia, hydrogen sulfide, hydrogen cyanide and mercaptans only): AVO inspection twice per shift. Appropriate credit for AVO program.	Yes	See Application Section 6
			MSS	Same as normal operation BACT requirements.	Yes	
New/Modified	24-ST-01	Fluid Catalytic Cracking Unit	CO	500 ppmv maximum hourly concentration.	Yes	
			HCN	See additional notes:	Yes	See Application Section 6
			H2SO4	See Additional Notes:	Yes	See Application Section 6
			NH3	See Additional Notes:	Yes	See Application Section 6
			NOx	Short term limit: 200 ppmv, one hour average corrected to 0% oxygen. Annual emission limit: 100 ppmv, corrected to 0% oxygen.	Yes	
			PM	The emission reduction techniques for PM10 and PM2.5 will follow the technique for PM. Includes condensable PM. 1 lb/1000 lbs. of coke burned off. Opacity is limited to 15-20% over a 6-minute average period.	Yes	
			SO2	Short term limit: 300 ppmv, one hour average, corrected to 0% oxygen. Annual emission limit: 100 ppmv, corrected to 0% oxygen.	Yes	
			VOC	<10 ppmv exit concentration.	Yes	
			CO2	See additional notes:		See Application Section 6

Action Requested	FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
			CH4	See additional notes:		See Application Section 6
			N2O	See additional notes:		See Application Section 6
			CO2 Equivalent	See additional notes:		See Application Section 6
			MSS	Same as normal operation BACT requirements.	Yes	
New/Modified	30-B-05	Boiler: Liquid and Gas Fuel, > 40 MMBtu/hr	CO	50 ppmv at 3% O2 achieved by good combustion practices, oxidation catalyst, and/or maintenance of the boiler. Specify technique(s).	Yes	See Application Section 6
			NH3	10 ppmvd at 3% O2 achieved by controlling the NH3 injection system to minimize NH3 slip.	Yes	See Application Section 6
			NOx	Specify fuel type(s) to be fired. When firing natural gas: 0.01 lb/MMBtu achieved by When firing plant fuel gas: 0.015 lb/MMBtu achieved Note: plant fuel gas may contain up to 75% natural gas. Specifics: <50% H2; > 920 Btu/dscf. Emission limits typically achieved using dry-low NOx combustors, limiting fuel consumption, SCR, and/or water or steam injection. Specify technique(s). Fuel oil firing limited to 760 hours/yr.	Yes	See Application Section 6
			PM	The emission reduction techniques for PM10 and PM2.5 will follow the technique for PM. Less than 5% opacity. Good combustion practices.	Yes	See Application Section 6
			SO2	Firing low sulfur fuel and good combustion practices.	Yes	See Application Section 6
			VOC	Good combustion practices.	Yes	See Application Section 6
			CO2	See additional notes:		See Application Section 6
			CH4	See additional notes:		See Application Section 6
			N2O	See additional notes:		See Application Section 6
			CO2 Equivalent	See additional notes:		See Application Section 6
			MSS	Minimizing the duration of these activities and operating the facility in accordance with best management practices and good air pollution control practices	Yes	
New/Modified	HOC-PP-CT	Cooling Tower	PM	The emission reduction techniques for PM10 and PM2.5 will follow the technique for PM. Drift < 0.001% achieved by drift eliminators	Yes	See Application Section 6
			VOC	Non-contact design. Monthly monitoring of VOC in water per Appendix P or approved equivalent (assume all VOC stripped out). Repair identified leaks as soon as possible, but before next scheduled shutdown, or shutdown triggered by 0.08 ppmw cooling water VOC concentration.	Yes	See Application Section 6
			MSS	Same as normal operation BACT requirements.	Yes	
New/Modified	CAS-HOCPP	Control: Adsorption System: Disposable	VOC	Minimum of two carbon canisters in series; continuous emissions monitor (CEM) and recorder before the last canister, but periodic monitoring before the last canister may be acceptable for single compound or low use rate systems. Breakthrough concentration 20-100 ppm based on vendor representations for specific compounds.	Yes	See Application Section 6
			MSS	Same as normal operation BACT requirements.	Yes	
New/Modified	MEROX	Process Vent	VOC	Non-halogenated VOCs: flare, any oxidizer, adsorber, absorber/scrubber, etc. Specify technique. Must meet that control device's approved efficiency. Halogenated VOC: Thermal oxidation followed by absorber/scrubber carbon adsorption. Specify technique. Must meet that control device's approved efficiency.	Yes	See Application Section 6
			SO2	See Additional Notes:	Yes	See Application Section 6
			H2S	See Additional Notes:	Yes	See Application Section 6
			MSS	Same as normal operation BACT requirements.	Yes	

FIN	Unit Type	Pollutant	Minimum Monitoring Requirements	Confirm	Additional Notes for Monitoring
Various	MSS Activities	CO	Requirement dependent on application representation. Vapor concentration measurement prior to opening to atmosphere may be required and/or emission potential may be recalculated. Each measurement and/or number of events monthly must be monitored. Must monitor open ended lines for leaks if open more than 72 hours without cap, blind flange or plug. Where add on control is used for purge, monitoring consistent with device used and flow and firing rates monitored or potential calculated.	Yes	
		H2S	See Additional Notes:	Yes	There is no change to existing MSS emission limits for this project
		NH3	See Additional Notes:	Yes	There is no change to existing MSS emission limits for this project
		NOx	Where add on control is used for purge, monitoring consistent with device used and flow and firing rates monitored or potential calculated.	Yes	
		PM	The emission monitoring techniques for PM10 and PM2.5 will follow the technique for PM. Blasting material and usage. Paint spray type and usage. Combustion firing rates. Differential pressure across PM control devices.	Yes	
		SO2	Where add on control is used for purge, monitoring consistent with device used and flow and firing rates monitored or potential calculated.	Yes	
		VOC	Requirement dependent on application representation. Vapor concentration measurement prior to opening to atmosphere may be required and/or emission potential may be recalculated. Each measurement and/or number of events monthly must be monitored. Must monitor open ended lines for leaks if open more than 72 hours without cap, blind flange or plug. Where add on control is used for purge, monitoring consistent with device used and flow and firing rates monitored or potential calculated.	Yes	
		Exempt Solvents	See Additional Notes:	Yes	There is no change to existing MSS emission limits for this project
HOC-FUG	Fugitives: Piping and Equipment Leak	H2S	Look for leaks twice per shift using audio, visual or olfactory (AVO) senses to observe leaks. Record results and corrective action taken.	Yes	
		VOC	Use EPA Method 21 to monitor for leaks from seals on pumps, compressors, agitator and valve seals on piping components in light liquid and gas VOC service quarterly. Gas or hydraulic check new and a replaced connectors prior to returning to service, or monitor with Method 21 within 15 days of returning to service. Leak detection and repair (LDAR) Program 28M has a leak definition where repair action is required at 10,000 ppmv. LDAR Program 28 VHP has a leak definition where repair action is required at 500 ppmv for valves and connectors and 2000 ppmv for pumps, compressors and agitators. Check connectors weekly using audio, visual or olfactory (AVO) senses to observe leaks. Record results and corrective action taken.	Yes	
SWS-FUG	Fugitives: Piping and Equipment Leak	H2S	Look for leaks twice per shift using audio, visual or olfactory (AVO) senses to observe leaks. Record results and corrective action taken.	Yes	

FIN	Unit Type	Pollutant	Minimum Monitoring Requirements	Confirm	Additional Notes for Monitoring
		VOC	Use EPA Method 21 to monitor for leaks from seals on pumps, compressors, agitator and valve seals on piping components in light liquid and gas VOC service quarterly. Gas or hydraulic check new and a replaced connectors prior to returning to service, or monitor with Method 21 within 15 days of returning to service. Leak detection and repair (LDAR) Program 28M has a leak definition where repair action is required at 10,000 ppmv. LDAR Program 28 VHP has a leak definition where repair action is required at 500 ppmv for valves and connectors and 2000 ppmv for pumps, compressors and agitators. Check connectors weekly using audio, visual or olfactory (AVO) senses to observe leaks. Record results and corrective action taken.	Yes	
24-ST-01	Fluid Catalytic Cracking Unit	CO	CEMS for CO and O2, Flow monitoring or calculation	Yes	
		HCN	See additional notes:	Yes	Emission factor used for permit limit apllied to actual calculated coke burn rate.
		H2SO4	CEMS for SO2 and O2, Flow monitoring or calculation	Yes	Emission factor used for permit limit apllied to actual calculated coke burn rate.
		NH3	See Additional Notes:	Yes	Emission factor used for permit limit apllied to actual calculated coke burn rate.
		NOx	CEMS for NOx and O2, Flow monitoring or calculation	Yes	
		PM	The emission monitoring techniques for PM10 and PM2.5 will follow the technique for PM. Continuous Opacity Monitor, or differential pressure across wet scrubber with daily opacity readings	Yes	Emission factor used for permit limit apllied to actual calculated coke burn rate.
		SO2	CEMS for SO2 and O2, Flow monitoring or calculation	Yes	
		VOC	CPMS for Coke Burn, CEMS for CO and O2	Yes	
		CO2	See additional notes:	Yes	CO2 , CO, and O2 CEMS used along with Equation Y-6 and Y-7a from 40 CFR Part 98 Subpart Y are used to calcute CO2 emissions.
		CH4	See additional notes:	Yes	Calculated using Equation Y-9 from 40 CFR Part 98 Subpart Y.
		N2O	See additional notes:	Yes	Calculated using Equation Y-10 from 40 CFR Part 98 Subpart Y.
		CO2 Equivalent	See additional notes:	Yes	Calucated using method described in 40 CFR Part 98.
30-B-05	Boiler: Liquid and Gas Fuel, > 40 MMBtu/hr	CO	totalizing fuel flow meter record monthly fuel analysis for heating value every six month visible emission/opacity observations >100 MMBtu/hr: continuous flow meter average hourly, CO and O2 CEMS	Yes	
		NH3	SCR and NSCR: ammonia CEMS or NOx monitor across the catalyst continuous flow meter average hourly, O2 CEMS	Yes	
		NOx	totalizing fuel flow meter record monthly fuel analysis for heating value every six month CEMS. Data collected four times per hour and averaged hourly. >100 MMBtu/hr: continuous flow meter average hourly, NOx and O2 CEMS	Yes	

FIN	Unit Type	Pollutant	Minimum Monitoring Requirements	Confirm	Additional Notes for Monitoring
		PM	The emission monitoring techniques for PM10 and PM2.5 will follow the technique for PM. totalizing fuel flow meter record monthly, fuel analysis for heating value every six month, visible emission/opacity observations daily for major sources and quarterly for minor sources. >100 MMBtu/hr: continuous flow meter average hourly, CO and O2 CEMS	Yes	
		SO2	totalizing fuel flow meter record monthly fuel analysis for heating value and total sulfur every six month visible emission/opacity observations Refinery: Continuous H2S monitoring of fuel gas	Yes	
		VOC	totalizing fuel flow meter record monthly fuel analysis for heating value every six month CEMS. Data collected four times per hour and averaged hourly. >100 MMBtu/hr: continuous flow meter average hourly, CO and O2 CEMS	Yes	
		CO2	See additional notes:	Yes	Monthly thermal efficiency calculation
		CH4	See additional notes:	Yes	Monthly thermal efficiency calculation
		N2O	See additional notes:	Yes	Monthly thermal efficiency calculation
		CO2 Equivalent	See additional notes:	Yes	Monthly thermal efficiency calculation
HOC-PP-CT	Cooling Tower	PM	The emission monitoring techniques for PM10 and PM2.5 will follow the technique for PM. Cooling water circulation rate measured hourly unless maximum circulation rate assumed. Large (>50,000 gpm circulation rate): Total Dissolved Solids (TDS) in the cooling water daily then reduced to weekly and quarterly with daily conductivity measurement that is correlated. Small (<50,000 gpm circulation rate): Total Dissolved Solids (TDS) in the cooling water measured weekly.	Yes	
		VOC	VOC concentration in the cooling water by TCEQ stripping method or approved equivalent monthly. Cooling water circulation rate measured hourly unless maximum circulation rate assumed.	Yes	
CAS-HOCPP	Control: Adsorption System: Disposable	VOC	VOC concentration measured at a frequency equivalent to between 20 and 30 percent of the minimum potential saturation time. Visual inspection for carbon build up around the stack weekly.	Yes	
MEROX	Process Vent	VOC	Production rate or flow as appropriate Monitoring consistent with Control Device	Yes	
		SO2	See Additional Notes:	Yes	Same as VOC
		H2S	See Additional Notes:	Yes	Same as VOC

Date: 9/30/2021
Permit #: 38754
Company: Valero Refining - Texas, L.P.

FIN	Unit Type	Pollutant	Proposed Measurement Technique (only complete for pollutants with a project increase above the PSD threshold)	Additional Notes for Measuring:
Various	MSS Activities	CO	Record keeping	
		H2S	Record keeping	
		NH3	Record keeping	
		NOx	Record keeping	
		PM	Record keeping	
		SO2	Record keeping	
		VOC	Record keeping	
		Exempt Solvents	Record keeping	
HOC-FUG	Fugitives: Piping and Equipment Leak	H2S	Record keeping	
		VOC	Record keeping	
SWS-FUG	Fugitives: Piping and Equipment Leak	H2S	Record keeping	

FIN	Unit Type	Pollutant	Proposed Measurement Technique (only complete for pollutants with a project increase above the PSD threshold)	Additional Notes for Measuring:
		VOC	Record keeping	
24-ST-01	Fluid Catalytic Cracking Unit	CO	CEMS	
		HCN	COMS	Calculated coke burn calculated using Equation 6 from 40 CFR § 60.104a(d)(4)(iii)
		H2SO4	COMS	Calculated coke burn calculated using Equation 6 from 40 CFR § 60.104a(d)(4)(iii)
		NH3	COMS	Calculated coke burn calculated using Equation 6 from 40 CFR § 60.104a(d)(4)(iii)
		NOx	CEMS	
		PM	COMS	Calculated coke burn calculated using Equation 6 from 40 CFR § 60.104a(d)(4)(iii)
		SO2	CEMS	
		VOC	CEMS	
		CO2	CEMS	
		CH4	CEMS	
		N2O	CEMS	
		CO2 Equivalent	CEMS	
30-B-05	Boiler: Liquid and Gas Fuel, > 40 MMBtu/hr	CO	CEMS	
		NH3	CEMS	
		NOx	CEMS	

FIN	Unit Type	Pollutant	Proposed Measurement Technique (only complete for pollutants with a project increase above the PSD threshold)	Additional Notes for Measuring:
		PM	Other:	CEMS and COMS
		SO2	COMS	
		VOC	COMS	
		CO2	COMS	
		CH4	COMS	
		N2O	COMS	
		CO2 Equivalent	COMS	
HOC-PP-CT	Cooling Tower	PM	Record keeping	
		VOC	Record keeping	
CAS-HOCPP	Control: Adsorption System: Disposable	VOC	Record keeping	
MEROX	Process Vent	VOC	Record keeping	
		SO2	Record keeping	
		H2S	Record keeping	

Texas Commission on Environmental Quality
Form PI-1 General Application
Materials

Date: 9/30/2021
Permit #: 38754
Company: Valero Refining - Texas, L.P.

Item	How submitted	Date submitted
A. Administrative Information		
Form PI-1 General Application	STEERS	09/30/2021
Hard copy of the General sheet with original (ink) signature	Not applicable	
Professional Engineer Seal	STEERS	09/30/2021
B. General Information		
Copy of current permit (both Special Conditions and MAERT)		
Core Data Form	Not applicable	
Area map	STEERS	09/30/2021
Plot plan	STEERS	09/30/2021
Process description	STEERS	09/30/2021
Process flow diagram	STEERS	09/30/2021
List of MSS activities	STEERS	09/30/2021
State regulatory requirements discussion	STEERS	09/30/2021
C. Federal Applicability		
Summary and project emission increase determination - Tables 1F and 2F	STEERS	09/30/2021
Netting analysis (if required) - Tables 3F and 4F as needed	STEERS	09/30/2021
D. Technical Information		
BACT discussion, if additional details are attached	STEERS	09/30/2021
Monitoring information, if additional details are attached	STEERS	09/30/2021
Material Balance (if applicable)	STEERS	09/30/2021
Calculations	STEERS	09/30/2021
E. Impacts Analysis		
Qualitative impacts analysis		
MERA analysis	Not applicable	
EMEW: SCREEN3	Not applicable	
EMEW: NonSCREEN3	STEERS	09/30/2021
PSD modeling protocol	STEERS	09/30/2021
F. Additional Attachments		

Texas Commission on Environmental Quality
Form PI-1 General Application
Summary

Date: 9/30/2021
Permit #: 38754
Company: Valero Refining - Texas, L.P.

Project Summary

This sheet is a summary of representations made in this PI-1. No additional information is required by the applicant.

Project Description

Valero plans to undertake changes to the West Plant Heavy Oil Cracker (HOC), a fluidized catalytic cracking (FCC) unit. Due to the integrated nature of refinery operations, the project ("HOC Reconfiguration Project") will necessitate construction of a new utility boiler, a new cooling tower, and a new Gas Plant.

Contact Data

Company	Valero Refining - Texas, L.P.
Responsible official	Mr. Joe Almaraz
Phone	361-289-3328
Email	Joe.Almaraz@valero.com
Technical contact	Ms. Meagan Marquard
Phone	361-299-8913
Email	Meagan.Marquard@valero.com

Permit and Action Type Requested

Permit Type	Action Type	Permit Number
Minor NSR	Amendment	38754
Special Permit	Not applicable	
De Minimis	Not applicable	
Flexible	Not applicable	
PSD	Major Modification	PSDTX324M14
Nonattainment	Not applicable	
HAP Major Source [FCAA § 112(g)]	Not applicable	
PAL	Not applicable	
GHG PSD	Initial	TBD

Fees

Non-Renewal fee	$75,000.00
Renewal fee	
Total Fee	$75,000.00

Miscellaneous

TCEQ Region	Region 14
RN	RN100214386
CN	CN600127468
Title V site?	Yes
Industry group	Chemical / Energy
Public notice required?	Yes

Air Pollutant Watch List

Is this facility located in an APWL area AND this application includes that pollutant?	No
APWL pollutants	

Disaster Review

Any air contaminants for which a disaster review is required?	No
Disaster review pollutants	

Application contains **confidential** information?	No

Project Timing

Projected Start of Construction	10/1/2022
Projected Start of Operation	1/1/2024

Project Emission Summary (tpy)

Pollutant	Current (tpy)	Consolidated Emissions (tpy)	Proposed (tpy)	Project Change in Allowable (tpy)
VOC	1023.71	0.00	1076.74	53.03
PM	832.06	0.00	840.90	8.84
PM_{10}	827.71	0.00	836.57	8.86
$PM_{2.5}$	757.11	0.00	807.41	50.30
NO_x	1604.21	0.00	1641.33	37.12
CO	2982.70	0.00	3183.10	200.40
SO_2	1557.20	0.00	1596.95	39.75
Pb	0.00	0.00	0.00	0.00
H2S	21.70	0.00	21.79	0.09
NH3	10.63	0.00	37.25	26.62
Exempt Solvents	0.60	0.00	0.60	0.00
HF	2.29	0.00	2.29	0.00
Cl2	0.04	0.00	0.04	0.00
H2SO4	214.63	0.00	199.31	-15.32
HCl	0.57	0.00	0.57	0.00
HCN	320.40	0.00	320.40	0.00
CO2	0.00	0.00	2674037.00	2674037.00
CH4	0.00	0.00	79.86	79.86
N2O	0.00	0.00	14.84	14.84
CO2 Equivalent	0.00	0.00	2680456.00	2680456.00

Federal Applicability

County	Nueces
County classification (as of 9/23/2019)	attainment or unclassified for all pollutants
Ozone classification requested for this project	attainment or unclassified for all pollutants
Pollutants requiring PSD review	CO, NOx, PM, PM10, PM2.5, SO2, Ozone (as VOC),
Pollutants requiring NA review	

Impacts

No impacts required	HF, Cl2, HCl, HCN,
Qualitative analysis	
MERA analysis	VOC,
Modeling	VOC, H2S, NH3,
PSD Protocol	Ozone, CO, NOx, PM, PM10, PM2.5, SO2, Exempt Sol

Air Quality Analysis Protocol

TCEQ Air Quality Permit Nos. 38754, PSDTX324M14
HOC Reconfiguration Project

Valero Refining – Texas, LP

Bill Greehey Refinery – West Plant
Corpus Christi, Nueces County, Texas
CN 600127468
RN 100214386

September 30, 2021

STATE OF TEXAS
JOE M. KUPPER
79749
LICENSED
PROFESSIONAL ENGINEER

9/30/2021

Joe M. Kupper, P.E.
DiSorbo Consulting, LLC
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Appendices

Section 1
Project Information

1.1 Introduction

This Air Quality Analysis (AQA) modeling protocol has been completed to present the proposed modeling approach to the Texas Commission on Environmental Quality (TCEQ) Air Dispersion Modeling Team (ADMT). The AQA is being performed in support of the following permit application.

Applicant:	**Valero Refining Texas, LP**
Facility:	**Bill Greehey Refinery - West Plant**
Permit Application Number:	**38754 and PSD-TX-324M14**
Regulated Entity Number:	**RN100214386**
Nearest City and County:	**Corpus Christi, Nueces County**
Applicant's Modeler:	**Joe Kupper, P.E.** **DiSorbo Consulting, LLC** **512-693-4186**

The AQA will demonstrate compliance with the applicable air quality standards. This document summarizes the modeling methodologies, the data to be used, and how the results will be presented. The modeling methodologies to be used in this analysis will be consistent with current TCEQ and U.S. Environmental Protection Agency (EPA) guidelines.

1.2 Project Overview

Valero Refining Texas, LP (Valero) operates the Bill Greehey Refineries located in Corpus Christi, Nueces County. The Bill Greehey Refineries consist of two plants, the East Plant and the West Plant. Operation of the West Plant is currently authorized under Permit Nos. 38754, PSDTX324M14, and various Permit by Rule (PBR) and Standard Permit authorizations. Permit 38754 (“the permit”) is a Subchapter B construction permit.

Valero plans to undertake changes to the West Plant Heavy Oil Cracker (HOC), a type of fluidized catalytic cracking (FCC) unit. Due to the integrated nature of refinery operations, the project ("HOC Reconfiguration Project") will necessitate certain operational changes at other existing process units and will entail the construction of a new utility steam boiler, a new cooling tower, a new gas plant, a new sour water stripper, a new liquefied petroleum gas (LPG) Merox Treating Unit, a new Selective Hydrogenation Unit (SHU), a new C3/C4 Splitter Tower, and two new butane/butylene bullet tanks.

Maintenance, startup and shutdown (MSS) activities for all process units at the West Plant are currently authorized by permit, and existing MSS activities will not be affected by the project. MSS activities associated with the new equipment (e.g., new boiler, new gas plant) will be authorized as part of this application.

1.3 Type of Permit Review

The project is located in an attainment area for at least one pollutant. The West Plant is a named source (Petroleum Refinery) with a Potential to Emit (PTE) of 100 tpy or greater for at least one pollutant. Based on the applicability analysis, the HOC Improvement Project constitutes a major modification for purposes of PSD review. Based on the netting analysis, a PSD analysis is triggered for the proposed emissions of nitrogen oxides (NO_X), carbon monoxide (CO), volatile organic compounds (VOC), particulate matter (PM), including particulate matter less than 2.5 microns ($PM_{2.5}$), and particulate matter less than 10 microns (PM_{10}), and sulfur dioxide (SO_2), and sulfuric acid (H_2SO_4). Minor NSR requirements apply for hydrogen sulfide (H_2S), hydrogen cyanide (HCN) and ammonia (NH_3).

1.4 Constituents Evaluated

A NAAQS and PSD increment analysis will be conducted for emissions of nitrogen dioxide (NO_2), CO, PM_{10}, and $PM_{2.5}$, and SO_2.

A State Property Line analysis will be conducted for emissions of SO_2, H_2SO_4, and hydrogen sulfide (H_2S). In addition, a health effects evaluation will be conducted for the VOC and inorganic emissions following the modeling effects review and applicability (MERA) guidance document.

The modeling will be performed to demonstrate compliance with the applicable standards. The constituents evaluated and the values that the modeling results will be compared against are shown on Table 1-1.

The 24-hour and annual $PM_{2.5}$ Significant Impact Levels (SILs) of 1.2 $\mu g/m^3$ and 0.2 $\mu g/m^3$, respectively, will be used in the Significance Analysis. Justification for use of the 24-hour $PM_{2.5}$ SIL in the NAAQS and PSD increment modeling analyses is provided in the April 17, 2018, EPA Memorandum from Peter Tsirigotis, Guidance on Significant Impact Levels for Ozone and Fine Particles in the Prevention of Significant Deterioration Permitting Program. The referenced guidance is available at the following URL: *https://www.epa.gov/sites/production/files/2018-04/documents/sils_policy_guidance_document_final_signed_4-17-18.pdf*

Concentrations of secondarily formed particulate and ozone were evaluated using the Modeling for Emissions Precursors (MERP) method described in Section 4.6.

Table 1-1

NAAQS and PSD Increment Values - Criteria Pollutants

Valero Refining – Texas, LP

Bill Greehey Refinery – West Plant

Nueces County, TX

Constituent Name	CAS No.	Averaging Period	SIL (De minimis)	SMC	PSD Increment	Standard
			μg/m ^{3}	μg/m ^{3}	μg/m ^{3}	μg/m ^{3}
Nitrogen Dioxide (NO_2)	10102-44-0	1-Hour	7.5	--	--	188
		Annual	1	14	25	100
Carbon Monoxide (CO)	630-08-0	1-Hour	2,000	--	--	40,000
		8-Hour	500	575	--	10,000
$PM_{2.5}$	na	24-Hour	1.2	--	9	35
		Annual	0.2	--	4	12
PM_{10}	na	24-Hour	5	10	30	150
		Annual	1	--	17	--
Sulfur Dioxide (SO_2)	7446-09-5	30-min	20.4	--	--	1,021
		1-Hour	7.8	--	--	196
		3-Hour	25	--	512	1,300
Hydrogen Sulfide (H_2S)	7783-06-4	30-min - NonInd	2.2	--	--	108
		30-min - Ind	3.2	--	--	162
Sulfuric Acid (H_2SO_4)	7664-93-9	1-Hour	1.0	--	--	50
		24-Hour	0.3	--	--	15

1. The 24-hour and annual NAAQS for SO2 have been revoked for Nueces and therfore are not presented in the table.

Section 2
Maps and Plot Plan

The West Plant is located in Corpus Christi, Nueces County, Texas. An area map is included as Figure 2-1 showing the property line. The property boundary shown is also the fence line. The “property line” near the dock were extended out to exclude the safety zone areas. This set up considers the operation safety requirements and is also consistent with previous modeling setup. The area map also includes an underlay of an aerial view retrieved using the Google™ Earth program and a 3,000-foot radius from the site. The Universal Transverse Mercator (UTM) coordinates are based on the North American Datum (NAD) of 1983.

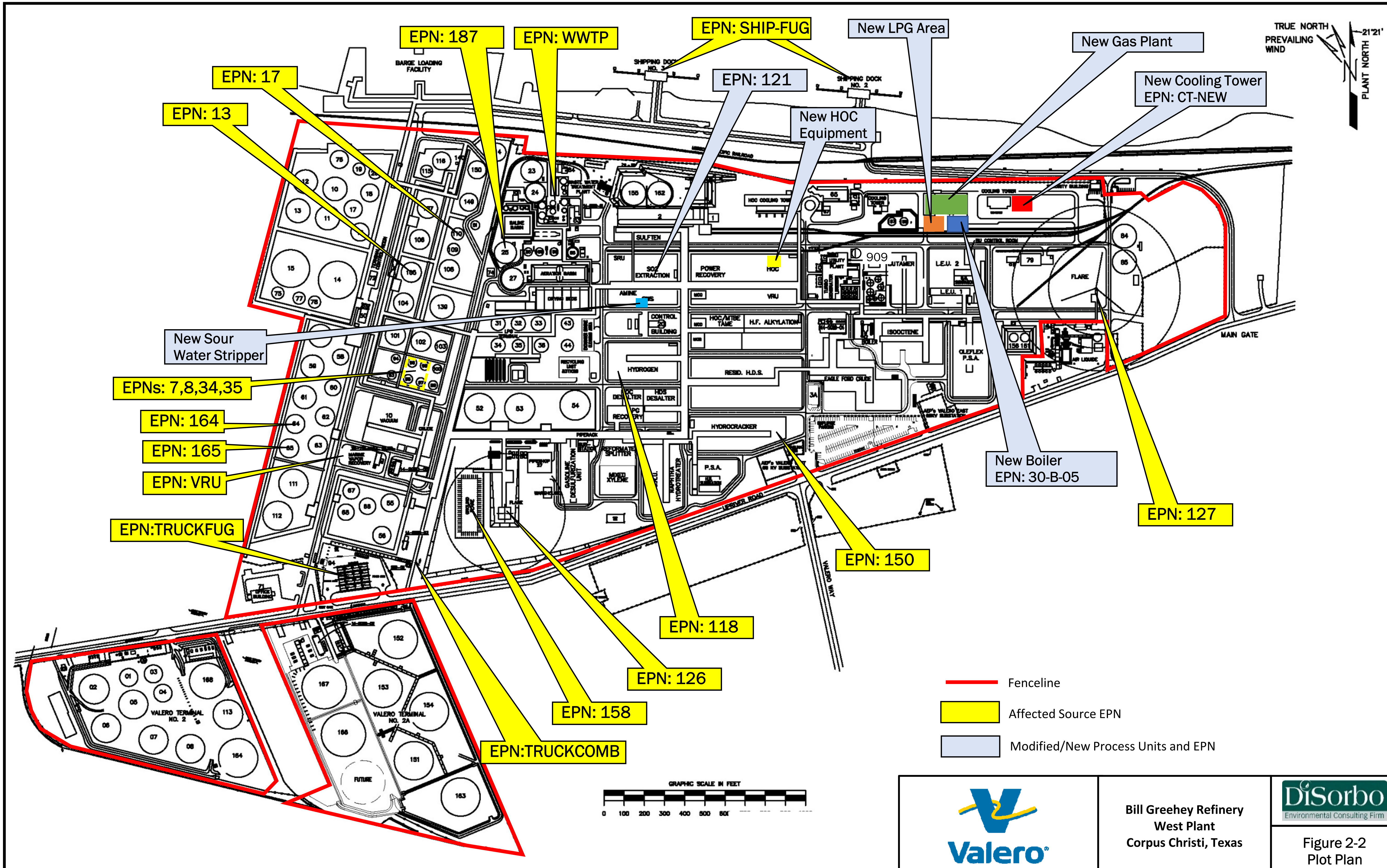
Figure 2-2 is a plot plan depicting the locations of the sources and building structures.

Valero

Bill Greehey Refinery
West Plant
Corpus Christi, Texas

DiSorbo
Environmental Consulting Firm

Figure 2-1
Area Map



Valero

Bill Greehey Refinery
West Plant
Corpus Christi, Texas

DiSorbo
Environmental Consulting Firm

Figure 2-2
Plot Plan

VAL_000276

Section 3
Air Quality Monitoring Data

Ambient monitoring data is used in the PSD pre-application analysis to provide an evaluation of the existing ambient air quality in the area that the major source or major modification would affect. Ambient monitors were selected in areas with equal or greater point and non-point source emissions than the site, thus providing conservative background concentrations for comparison to the NAAQS.

The monitoring data will be used in the NAAQS analysis to represent the contribution of area and mobile sources that are not included in the modeling as well as point sources that are also included in the modeling to the overall air quality impact. For this AQA protocol, ambient monitoring data from areas with equal or greater point and non-point source emissions than the site are proposed for all pollutants. If refinements are required, ambient monitoring data may be selected from areas with similar emissions from non-point sources, since the nearby point source emissions will be included in the model.

Preliminary modeling indicates that CO impacts are below the SILs; therefore, no ambient monitoring data are provided. If this changes, monitoring data will be presented to TCEQ in the final AQA. Data are presented for SO_2, NO_2, $PM_{2.5}$, PM_{10}, and ozone. The criteria pollutant monitoring data discussed below was obtained from the TCEQ web site (https://www.tceq.texas.gov/cgi-bin/compliance/monops/yearly_summary.pl) and the EPA AirData website (https://www.epa.gov/outdoor-air-quality-data/download-daily-data). Ozone monitoring data was obtained from the TCEQ web site (https://www.tceq.texas.gov/cgi-bin/compliance/monops/8hr_4highest.pl). Table 3-1 lists the proposed ambient monitors selected for background concentration estimates for use in the NAAQS and Pre-application Analyses. Table 3-2 provides additional justification for each of the monitor selections including nearby population and emissions. Table 3-3 shows the ozone monitoring data.

3.1 Pre-application Analysis

In addition to the monitoring data used for the AQA, the EPA requires an analysis of the existing air quality in the area that would be affected by the project. EPA has developed significant monitoring concentrations (SMCs), that establish the levels at which a facility may need to conduct pre-construction ambient air quality monitoring for pollutants subject to PSD review. If the air quality dispersion modeling analyses show that maximum modeled ground-level concentrations from the project emissions increases in the Significance Analysis do not exceed the SMCs, pre-construction monitoring may be avoided. Please note that the SMCs for $PM_{2.5}$ have been vacated[1], so pre-construction monitoring requirements must be addressed for $PM_{2.5}$ regardless of initial concentrations produced by the project. TCEQ frequently allows existing ambient monitors to satisfy any applicable preconstruction monitoring requirements. Therefore, the applicant proposes the ambient monitors in Table 3-1 to serve as conservative surrogates of background concentrations of $PM_{2.5}$ and for any other pollutants with predicted impacts over the SMCs.

3.2 NO_2 Ambient Monitoring Data

There are no ambient NO_X monitors located in Nueces County; therefore, an ambient monitor Lake Jackson monitor (EPA Site ID 480391016) from Brazoria County is proposed as a representation of the ambient air quality near the site. The 2019 data is incomplete. Therefore, the 2017, 2018 and 2020 data is used to develop the background value. Since the nearby industrial sources will be included in the modeling, the Lake Jackson monitor is valid to use although the total point and non-point emissions of the monitor are less that the emissions of the site. Table 3-1 summarizes the monitoring data and Table 3-2 shows that the total emissions from point and non-point sources.

3.3 $PM_{2.5}$ Ambient Monitoring Data

For the $PM_{2.5}$, the Dona Park monitor (EPA Site ID 483550034) in Nueces County was selected because it is located approximately 0.8 kilometer southeast of the site and has the same topography, meteorology and surrounding industrial emissions sources, which sufficiently demonstrates a representative monitor of the ambient air quality near the site. Table 3-1 summarizes the monitoring data and Table 3-2 shows that the emissions from point and non-point sources comparison.

3.4 PM_{10} Ambient Monitoring Data

For the PM_{10}, the Dona Park monitor (EPA Site ID 483550034) in Nueces County was selected because it is located approximately 0.8 kilometer southeast of the site and absolutely has the same

[1] https://www.cadc.uscourts.gov/internet/opinions.nsf/3964717CAD7BDA0085257AFB0055425F/$file/10-1413-1416378.pdf

topography, meteorology and surrounding industrial emissions sources, which sufficiently demonstrates a representative monitor of the ambient air quality near the site. Table 3-1 summarizes the monitoring data and Table 3-2 shows that the emissions from point and non-point sources comparison.

3.5 SO_2 Ambient Monitoring Data

The SO_2 monitors in Nueces County either do not meet the completeness requirements or are located in a residential area which does not represent the ambient air quality around the site. Therefore, a very conservative ambient monitor Clinton monitor (EPA Site ID 482011035) from Harris County is proposed as a very conservative representation of the ambient air quality near the site. Table 3-1 summarizes the monitoring data and Table 3-2 shows that the total emissions from point and non-point sources in Nueces County are much lower than those in Harris County. The Clinton monitor is located along the heavily industrial Houston Ship Channel and nearby very high traffic roadways. The site is located along the ship channel in Corpus, but there are much lower emissions and less traffic than the Clinton monitor. As noted, there are more emissions surrounding the ambient monitor compared to the project site.

3.6 Ozone Ambient Monitoring Data

For ozone, the VOC and/or NO_X emission increases are greater than 100 tpy; therefore, an ozone analysis is required. The first step in this analysis is to gather ambient monitoring data.

To satisfy pre-construction monitoring requirements, an evaluation of every ozone monitor in Nueces County was conducted to demonstrate that the area is in compliance with the ozone standard. There are two currently active monitors in Nueces County. The Corpus Christi West monitor (AQS 48-355-0025) is the nearest ozone monitor to the site, less than 5 km from the closest property line. The Corpus Christi West monitor's close proximity to the site justifies its use as a representative ozone background concentration for the site. Table 3-3 shows the 2018 through 2020 fourth highest eight-hour ozone concentrations, as well as, the three-year average for both ozone monitors located in Nueces County.

On October 1, 2015, EPA revised the NAAQS for ground-level ozone to 70 parts per billion (ppb). The highest three-year average for the representative Corpus Christi West monitor is 61 ppb, which is also the highest three-year average of all of the monitors in the area. This concentration is less than the NAAQS of 70 ppb; therefore, the area is in compliance with the current ozone NAAQS. Valero requests that this monitoring data be accepted in lieu of conducting pre-construction monitoring for ozone.

The ozone monitoring data was obtained from the TCEQ's CAMS Ozone Specific Reports (https://www.tceq.texas.gov/cgi-bin/compliance/monops/8hr_4highest.pl).

Table 3-1
Monitoring Data Summary
Valero Refining – Texas, LP
Bill Greehey Refinery – West Plant
Nueces County, TX

Compound	Local Site Name	AQS Code	Avg Period	Value Rank	Year	Observation Percent	Concentration (ppb)	Concentration (µg/m^3)	3-Year Average Concentration (µg/m^3)	Maximum Concentration (µg/m^3)
Nitrogen Dioxide (NO_2)	Lake Jackson[1]	480391016	1-Hr	98% Maximum Daily 1-hr	2017	92%	19	35.5	33.9	
					2018	96%	18	34.2		
					2020	95%	17	32.0		
			Annual	Annual Average	2020	95%	2	4.5		4.5
Particulate Matter less than 2.5 microns ($PM_{2.5}$)	Dona Park[2]	483550034	24-Hr	98th Percentile	2018	85%		18.1	19.6	
					2019	86%		20.4		
					2020	84%		20.4		
			Annual	Arithmetic Mean	2018	85%		7.8	7.7	
					2019	86%		8.1		
					2020	84%		7.3		
Particulate Matter less than 10 microns (PM_{10})	Dona Park[2]	483550034	24-Hr	2nd Max Value	2018	97%		79		84
					2019	89%		44		
					2020	93%		84		
Sulfur Dioxide (SO_2)	Clinton[1]	482011035	1-hr	99th Percentile	2018	99%	15.8	41.3	25.5	
					2019	99%	6.5	17.0		
					2020	99%	7.00	18.3		
			3-Hr	2nd Max Value	2020	96%	5.6	14.6		14.6

1. Monitoring data was obtained from TCEQ's CAMS Annual Summary website: https://www.tceq.texas.gov/cgi-bin/compliance/monops/yearly_summary.pl

2. Monitoring data was obtained from EPA AirData website: https://www.epa.gov/outdoor-air-quality-data/monitor-values-report

Table 3-2
Ambient Monitor Justification

Valero Refining – Texas, LP
Bill Greehey Refinery – West Plant
Nueces County, TX

Site Name	County	Population [1]	AQS Code	NO_X			$PM_{2.5}$			SO_2			PM_{10}		
				tpy			*tpy*			*tpy*			*tpy*		
				Point Sources 10 km from location [2]	Non-Point Sources in County [3]	Total	Point Sources 10 km from location [2]	Non-Point Sources in County [3]	Total	Sources 10 km from location 2	Non-Point Sources in County 3	Total	Point Sources 10 km from location [2]	Non-Point Sources in County [3]	Total
<u>Permit Site</u>															
Valero Bill Greehey Refinery	Nueces	362,294	Valero Bill Greehey Refinery	4,662	10,033	14,695	1,061	2,716	3,777	654	224	878	1,293	12,895	14,189
<u>Monitor Locations</u>															
Lake Jackson	Brazoria	374,264	480391016	2,626	7,457	10,083									
Clinton Drive	Harris	4,713,325	482011035							2,643	1,431	4,074			
Dona Park	Nueces	362,294	483550034				971	2,716	3,687				1,293	12,895	14,189

[1] Data Source : U.S. Census Bureau (July 1, 2019 Estimate) https://factfinder.census.gov/faces/nav/jsf/pages/community_facts.xhtml

[2] Data Source : 2019statesum.xlsx, https://www.tceq.texas.gov/airquality/point-source-ei/psei.html

[3] Data Source : ftp://newftp.epa.gov/air/nei/2017/tier_summaries/

Table 3-3
Ozone Monitoring Data

Valero Refining – Texas, LP
Bill Greehey Refinery – West Plant
Nueces County, TX

Ozone Monitor	AQS Code	2018 H-4-H (ppb)	2019 H-4-H (ppb)	2020 H-4-H (ppb)	Average (ppb)
Corpus Christi West	48-355-0025	61	62	61	61
Corpus Christi Tuloso	48-355-0026	60	58	64	60

NOTES:

1. Data Source : https://www.tceq.texas.gov/cgi-bin/compliance/monops/8hr_4highest.pl

2. The average is truncated (rather than rounded) per 40 CFR Appendix P to Part 50 §2.3(d)(1).

Section 4
Modeling Emissions Inventory

A copy of the emission changes summary is included in Appendix A. Please note that the emissions may be revised. If so, the revised emissions will be submitted with the final AQA. The source and parameter information that will be used in the modeling analysis are presented and discussed below.

4.1 Source Parameter Justification

Sources with vertical release stacks will be modeled as point sources with actual parameters. In the event that stack parameters are not available, pseudo-point stack parameters will be conservatively applied. The pseudo-point source parameters include a stack exit diameter of 0.001 meter, stack velocity of 0.001 meter per second, and exhaust temperature of zero Kelvin, per TCEQ guidance. An emission point with a temperature set to zero Kelvin, instructs the model to vary the temperature of the source with the ambient temperature from the meteorological data. The height of the pseudo-point source corresponds with the actual release height of the emissions.

Cooling tower will be modeled as a series point sources located at each cell with the actual release height, exit velocity, exit diameter and temperature.

Emission from fugitives, wastewater treatment, loading operation and tanks will be modeled as either pseudo-point sources, area sources, or volume sources. All source parameters and justifications will be presented in the final AQA.

4.2 Operating Scenarios

For emissions that may not occur simultaneous with other emissions, source groups will be used in the model to calculate impacts from various scenarios. These will be documented and justified in the final AQA, as necessary.

4.3 Scaling Factors

The PM_{10} and $PM_{2.5}$ NAAQS have 24-hour average standards. For sources where the highest hourly emission rates of the permit application are not representative of the maximum 24-hour average rates, the modeled emission rates will be adjusted to represent a 24-hour average emission rate.

4.4 NO_X to NO_2 Conversion

Per 40 CFR 51, Appendix W, §4.2.3.4.d, a Tier 2 application of the national default Ambient Ratio Method2 (ARM2) may be used to convert NO_X emission rates to NO_2 emission rates used in the modeling. For the NO_2 modeling, NO_X emission rates will be adjusted using this ARM2 approach in the model with the default minimum and maximum ratios of 0.5 and 0.9, respectively.

4.5 Off-Property Sources

The current inventories of maximum allowable emission rates for stationary industrial sources and PSD increment consuming sources will be obtained from the TCEQ Air Permits Allowable Database (APAD) for use in the NAAQS analyses and the PSD increment analyses, respectively.

From the September 30, 2014 EPA Memorandum[2], the following is noted: “U.S. EPA, 2010b briefly discusses the inclusion of nearby sources and the representativeness of ambient air quality data, while U.S. EPA, 2011 provides a significantly more detailed discussion. With respect to the number of nearby sources to be included in cumulative modeling, both memorandums cite Section 8.2.3 of Appendix W, which states “the number of such [nearby] sources is expected to be small except in unusual situations” and point to the “significant concentration gradient in the vicinity of the source” as the primary criterion for selection of these nearby sources.]

Valero proposes including sources in the cumulative modeling that fall within 15 kilometers from the edge of each applicable AOI grid, but not beyond 50 km from the site.

In addition, unless justification is provided for certain source types, missing stack parameters will be populated using the following TCEQ guidance:

- Sources with zero diameters will be modeled using pseudo-point source diameters of 0.001 m.
- Sources with zero velocity will be modeled using pseudo-point source velocity of 0.001 m/s.
- Sources with heights less than 1 m will be modeled using pseudo-point source height of 1 m.

Emission sources which are identified as either a standby generator, a firewater pump, or MSS scenario will be excluded from the analysis. as it is highly unlikely that the intermittent sources will be operating at the same time as MSS emissions from the site.

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[2] https://www3.epa.gov/ttn/scram/guidance/clarification/NO2_Clarification_Memo-20140930.pdf

As per TCEQ guidance, if the applicant is aware of data not contained in APAD, such as recently permitted facilities, or shut down facilities, the data should be included as applicable. Documentation of all APAD updates will be included with the final AQA.

4.6 Secondary PM and Ozone Analysis

$PM_{2.5}$ is either directly emitted from a source (primary emissions) or formed through chemical reactions with SO_2 and NO_X already in the atmosphere (secondary formation). EPA has not developed and/or formally recommended a near field model that includes the necessary chemistry algorithms to estimate secondary $PM_{2.5}$ impacts in an ambient air quality analysis. However, per EPA[3] and TCEQ[4] guidance, secondary formation of $PM_{2.5}$ needs to be addressed in an AQA. The guidance presents specific evaluation steps which are based on the amount of the project emissions.

The EPA has developed a tool and guidance on the use of Modeled Emission Rates for Precursors (MERPs) to address the contribution of secondary ozone and $PM_{2.5}$ impacts. TCEQ guidance document APDG 6232v4, Revised 11/19 is a simplified and state-specific version of EPA's memorandum from EPA dated April 30, 2019, with a subject, "Guidance on the Development of Modeled Emission Rates for Precursors (MERPs) as a Tier 1 Demonstration Tool for Ozone and $PM_{2.5}$ under the PSD Permitting Program." MERPs are used during the preliminary impact determination to demonstrate that projected impacts from a proposed source are less than a SIL value and would not cause or contribute to a violation of a NAAQS or PSD increment for that pollutant.

The MERP values used in the analysis on Table 4-1 are the values for the case listed for Harris County and the category corresponds to the project sources type and emissions. The use of the Harris County values is justified since the comparison of the emission sources in Nueces Counties are more similar to the emission sources in Harris County than any of the other counties provided in the MERP guidance. In addition, Harris County and Nueces Counties are similar in respect to temperatures, humidity, terrain, rural/urban nature of the area. If necessary, the MERPS may be refined to be based on values for a specific hypothetical source and the proper justification will be provided to show that the identified hypothetical source is representative for the project source.

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[3] *Guidance for $PM_{2.5}$ Permit Modeling,* US EPA, April 30, 2019.
[4] *Air Quality Modeling Guidelines*, *APDG 6232v4, Revised 11/19.*

The contribution of secondary $PM_{2.5}$ will be included in both the preliminary impact determination, and a sitewide cumulative analysis (if required).

Ozone is formed in the atmosphere from NO_X and VOC precursors. The MERP values used in the analysis on Table 4-1 are the values for the case listed for Harris County and the category corresponds to the project sources type and emissions. If necessary, the MERPS may be refined to be based on values for a specific hypothetical source and the proper justification will be provided to show that the identified hypothetical source is representative for the project source. If the results of the MERP analysis do not comply with the ozone NAAQS, the TCEQ will be consulted about additional Tier 1 demonstration tools such as qualitative or hybrid ozone evaluations to demonstrate compliance for this project. The monitored ozone concentration near the site is less than 70 ppb (see Table 3-3) and therefore Tier 2 photochemical modeling is not expected to be required.

Table 4-1
MERP Values for the analysis

Valero Refining – Texas, LP
Bill Greehey Refinery – West Plant
Nueces County, TX

Analysis	8-Hour Ozone		24-Hour $PM_{2.5}$		Annual $PM_{2.5}$	
Pollutant	NO_X	VOC	NO_X	SO_2	NO_X	SO_2
MERP[1] (TPY)	639	3816	15384	1492	47788	10387

1. The MERP values used in the analysis correspond to the "Harris County 500 tons High" case based on the project information, except the VOC MERP value which is the "Harris County 1000 tons High" case, since the "500 tons High" case is not available.

Section 5
Modeling and Modeling Techniques

Modeling methodology generally follows the procedures outlined in the applicable EPA and/or TCEQ guidance documents, including the following: *Environmental Protection Agency (EPA) Guidelines on Air Quality Models (GAQM)* and *Draft TCEQ Air Quality Modeling Guidelines (AQMG) APDG 6232v4, Revised 11/19*.

The model parameters specified for the modeled location, such as meteorological data, and receptor grid are discussed below. The remaining modeled parameters will be determined by the EPA recommended "regulatory default option."

5.1 Dispersion Model Selection

The selection of the dispersion model is based on EPA guidelines, considerations of the local terrain, and the emission source characteristics. AERMOD is currently the preferred dispersion model recommended by the EPA and TCEQ for complex source configurations and emission units subject to downwash. AERMOD is proposed for the modeling analysis primarily because it is the most up-to-date near-field dispersion model currently available.

5.2 Modeling Procedures

The air quality dispersion modeling analyses for the criteria pollutants will be performed in two major sub-steps: the Preliminary (Significance) Analysis and the Cumulative (Full Impact) Analysis. Per TCEQ and EPA Guidance, the Significance Analysis considers the emissions associated only with the proposed project to determine whether it will have a significant impact upon the surrounding area. The modeled ground-level concentrations will be compared to the corresponding Significant Impact Levels (SILs) to determine whether any modeled ground-level concentrations at any receptor locations are greater than the SIL.

If the Significance Analysis predicts modeled ground-level concentrations for a particular pollutant and averaging period that are greater than the applicable SIL, a Full Impact Analysis will be performed within the impact area. The Full Impact Analysis includes a NAAQS analysis and a PSD increment analysis, if applicable.

Per EPA and TCEQ guidance, impacts from the 1-hour NO_2, 1-hour SO_2, 24-hour and annual $PM_{2.5}$ significance analyses will be reported as the highest of the five-year average of the maximum modeled concentration predicted each year at each modeled receptor. All other pollutants and averaging periods will then be reported as the highest first high (H1H) modeled concentration at each receptor. The Significance Analysis determines whether the site is required to conduct further analyses for the modeled pollutant and also defines the area of impact (AOI) within which a Full Impact Analysis is required.

The Full Impact Analysis addresses NAAQS and PSD increments, where applicable. Preliminary modeling results indicate that the maximum concentrations of CO for all applicable averaging periods are all below the SILs. Therefore, a Full Impact Analysis will be conducted for all applicable other pollutants.

The NAAQS are maximum concentration limits measured in terms of the total concentration of a pollutant in the atmosphere. For the PSD NAAQS analyses, all off-property inventory emissions sources located within the Radius of Impact (ROI) plus at least 15 km, but no more than a total of 50 km from the site, will be modeled along with all on-property sources to demonstrate compliance with the NAAQS. The ROI is the farthest distance from the center of the proposed emission sources to the furthest receptor in the AOI. The development of the off-property inventory sources is described in Section 4.5 of this protocol. Background concentrations will be added to the maximum modeled ground-level concentrations for comparison with the NAAQS, as described in Section 3 of this protocol.

Per EPA guidance, the 1-hour NO_2 NAAQS impact will be reported as the five-year average of the 98th percentile of the annual distribution of the maximum daily 1-hour predicted concentrations. Impacts of the annual averaging period of NO_2 will be reported as the highest value per receptor of the five years modeled.

For 24-hour $PM_{2.5}$, the maximum three-year average of the 98th percentile of the annual distribution of the maximum 24-hour predicted concentrations (or H8H predicted concentration) determined for each receptor will be reported. For annual $PM_{2.5}$, the highest five-year average of the predicted concentrations from all receptors will be reported.

For 1-hour SO_2, the maximum five-year average of the 99th percentile of the annual distribution of the maximum daily 1-hour predicted concentrations (or H4H predicted concentration) determined for each receptor will be reported. For 3-hour SO_2, the maximum H2H predicted concentration from all receptors will be reported.

A PSD increment is the maximum increase in ambient concentrations allowed to occur above a baseline concentration for a pollutant. For the PSD increment analysis, all off property PSD increment consuming emission sources within the ROI plus at least 15 km, but no more than a total of 50 km from the site, will be modeled with Valero sources to demonstrate compliance with Class II PSD increment Standards. The PSD increment sources are a subset of the NAAQS sources and are only those sources which are new after the PSD increment baseline date. The development of the off-property inventory sources is described in Section 4.5 of this protocol.

For annual NO_2, the maximum annual average concentration at any receptor for each year modeled will be reported.

For 24-hour PM_{10}, the maximum high, second high (H2H) concentration at any receptor from each year modeled will be reported. For annual PM_{10}, the maximum annual average concentration at any receptor for each year modeled will be reported.

For 24-hour $PM_{2.5}$, the maximum H2H concentration at any receptor from each year modeled will be reported. For annual $PM_{2.5}$, the maximum annual average concentration at any receptor for each year modeled will be reported.

For 3-hour SO_2, the maximum H2H concentration at any receptor from each year modeled will be reported.

For state property line analysis, the worst-case year (2016) is used and the maximum impact is compared to 2% of the state property line standard. If it is over 2% of the SPL, a sitewide analysis will be conducted.

5.2.1 Model Setup and Application

The most recent version of AERMOD (version 21112) will be applied with the default options for dispersion that depend on local meteorological data, regional upper air data, and the local physical characteristics of land use surrounding the primary meteorological site. The Providence/Oris, LLC, BEEST for Windows will be used to set up the model inputs and perform the model runs.

5.2.2 Averaging Periods

Pollutant concentrations predicted by AERMOD will be averaged over short-term (1-, 3-, 8-, and 24-hour) and annual averaging periods as required by the applicable ambient air quality standard averaging period(s) for each modeled pollutant.

5.2.3 Building Wake Effects

Building wake effects occur when the air flow around buildings influences the dispersion from sources in the model input, resulting in variations to air concentrations. A building wake (downwash) analysis will be performed to determine appropriate downwash parameters for the major structures at the facility. The current *Building Profile Input Program with Plume Rise Model Enhancements* (BPIPPRM) downwash pre-processor (Version 04274) will be utilized to calculate downwash parameters for the modeling analysis.

All significant downwash structures will be included in modeling analysis. The UTM coordinates in NAD83 and structure heights for the downwash structures will be input to the model. The downwash structure information, including the BPIPPRM input and output files, will be submitted with the final AQA.

5.2.4 Urban Option

The urban option (URBANOPT) was used in AERMOD to account for enhanced night-time dispersion due to heat island effects associated with the Corpus Christi urban area where the site is located. A population of 162,728 will be used for all sources (all sources are at the site). The guidance from Section 5 of the EPA AERMOD Implementation Guide was used to determine the population to be used in the model. The guidance specifies to determine the population for the urban area using a population density that exceeds 750 people per square kilometer, which is equivalent to 1,943 people per square mile. The population and calculated population density for each zip code in Corpus Christi is shown on Table 5-1. The population sum for the zip codes where the density is greater than 750 people per square kilometer will be used as the population for URBANOPT.

5.2.5 Terrain

The terrain height differences between the modeled source and each receptor can vary. For each source/receptor combination, the relationship may be characterized as flat terrain, simple terrain, intermediate or complex terrain. This variation affects the dispersion and the relative plume height of modeled sources. The terrain surrounding the facility is described as generally flat with some minor elevation changes.

The receptor, source, building base, and controlling hill elevations were determined using data from USGS National Elevation Dataset (NED) files and the AERMAP processing program. The NED file is a NAD83 elevation file with heights measured in meters. AERMAP is a preprocessor program which processes the terrain information to provide inputs to AERMOD. The output from AERMAP provides not only base elevations for the receptors, but also an effective "hill height" that enables AERMOD to make more realistic simple to complex terrain concentration calculations. A copy of the AERMAP files will be included with the final AQA.

5.2.6 Receptor Grid

The receptor grid defines the locations at which the concentrations are calculated based on the dispersion of the emissions from the sources in the model input. The receptor grid which will be used to determine maximum off-property concentrations will be an array of receptors with spacing of 25, 100, 500, and 1000 meters designed following the guidelines found in TCEQ guidance[5]. The modeling receptor grids will be designed to sufficiently capture the maximum predicted concentrations and any exceedances at those locations, while helping to minimize model runtime. The UTM coordinates for the receptors will be based on NAD83.

For the NAAQS and PSD increment modeling, receptor grids will be developed by analyzing concentrations at each receptor from the Significance (AOI) Analysis. Only those receptors from the AOI analysis that had at least one predicted concentration greater than the SILs will be included in the NAAQS/PSD increment analyses. For the secondary PM2.5 AOI, the contribution due to secondary formation will be added to each receptor when determining the AOI receptors over the SILs.

5.2.7 Meteorological Data

The meteorological data to be used in the modeling analyses includes hourly wind speed, wind direction, temperature, and numerous other parameters. This data is used, along with other inputs, by the model to determine the dispersion of the emissions from sources in the model input. AERMOD requires input from a preprocessor (AERMET) that organizes and processes meteorological

[5] *Air Quality Modeling Guidelines*, *APDG 6232v4, Revised 11/19.*

data and estimates the necessary boundary layer parameters for dispersion calculations. Several parameters are used to describe the character of the modeled domain, including surface roughness length, albedo, and Bowen ratio. These parameters are incorporated into the surface meteorological data set used by AERMOD.

The meteorological data used in the models includes observed hourly wind speed, wind direction, temperature and numerous other parameters. This data is used, along with other inputs, by the models to determine the dispersion of the emissions from sources in the model input.

TCEQ has developed three separate AERMOD-ready meteorological data sets for each county in the state (TCEQ, 2006). The different data sets correspond to three categories of surface roughness length:

- Category 1 (LOW): For flat areas with surface roughness lengths of 0.001 m - 0.1 m
- Category 2 (MEDIUM): For rural/suburban areas with surface roughness lengths of 0.1 m – 0.7 m
- Category 3 (HIGH): For urban/industrial areas with surface roughness lengths of 0.7 m - 1.5 m

To determine which land use category is appropriate, the AERSURFACE[6] preprocessor will be used. As discussed in the EPA's AERSURFACE User's Guide (EPA-454/B-20-008), the surface roughness length is related to the height of obstacles to the wind flow and is, in principle, the height at which the mean horizontal wind speed is zero based on a logarithmic profile. The surface roughness length influences the surface shear stress and is an important factor in determining the magnitude of mechanical turbulence and the stability of the boundary layer. AERSURFACE utilizes land use data available from the 2016 National Land Cover Data (NLCD) and is supplemented with percent tree canopy and percent impervious (where available). The EPA recommended 1 km radius was used to determine the appropriate surface roughness value. AERSURFACE results are summarized below.

```
** Generated by AERSURFACE, Version 20060
** Title 1: AerSurface run for primary site
** Primary Site (Zo):
**   Center UTM Easting  (meters):   649295.0
**   Center UTM Northing (meters):  3077846.0
```

[6] https://www.epa.gov/scram/air-quality-dispersion-modeling-related-model-support-programs

** UTM Zone: 14 Datum: NAD83
** NLCD Version: 2016
** NLCD DataFile: 2016_R06_TX-East\2016_R06_TX-East_Land_Cover.tif
** MPRV Version: 2016
** MPRV DataFile: 2016_R06_TX-East\2016_R06_TX-East_Impervious.tif
** CNPY Version: 2016
** CNPY DataFile: 2016_R06_TX-East\2016_R06_TX-East_Canopy.tif
** Non-Airport Sector IDs: All
** Zo Method: ZORAD
** Zo Radius (m): 1000.0
** Continuous snow cover: N
** Surface moisture: Average; Arid: N
** Month/Season assignments: Default
** Late autumn after frost and harvest, or winter with no snow: 1 2 12
** Winter with continuous snow on the ground:
** Transitional spring (partial green coverage, short annuals): 3 4 5
** Midsummer with lush vegetation: 6 7 8
** Autumn with unharvested cropland: 9 10 11

FREQ_SECT ANNUAL 1

SECTOR 1 0.00 360.00

** Sect Alb Bo Zo

SITE_CHAR 1 1 0.15 0.39 0.133

The surface roughness value falls within the Category 2 - "medium" range; therefore, the medium roughness meteorological data is selected for use over the modeling domain. The AERSURFACE files will be provided in the final AQA.

For Nueces County, the preprocessed (via AERMET) meteorological data sets for 2014, 2015, 2016, 2017 and 2018 were obtained from the TCEQ. Surface and upper air meteorological data were collected from the National Weather Service (NWS) station at the Corpus Christi International Airport

(Station Number 12924) for all years to be used in the analysis. The surface station elevation to be used in the analysis is 13.4 meters.

Table 5-1

Urban Option Population

Valero Refining - Texas - West Plant Refinery, Corpus Christi

#	Zip Code	Location	City	Population	People / Sq. Mile	People / Sq. KM
1	78416	27.753049, -97.439277	Corpus Christi, Texas	16,335	5,356	2,068
2	78404	27.767832, -97.399320	Corpus Christi, Texas	17,133	5,331	2,058
3	78411	27.730074, -97.383667	Corpus Christi, Texas	27,806	4,510	1,741
4	78413	27.681421, -97.409250	Corpus Christi, Texas	34,572	3,676	1,419
5	78412	27.688618, -97.352952	Corpus Christi, Texas	34,018	3,022	1,167
6	78405	27.773083, -97.444493	Corpus Christi, Texas	17,344	2,765	1,068
7	78401	27.796143, -97.400311	Corpus Christi, Texas	4,631	2,371	916
8	78408	27.796702, -97.450663	Corpus Christi, Texas	10,889	2,226	859
9	78417	27.728536, -97.443794	Corpus Christi, Texas	3,043	1,412	545
10	78414	27.659640, -97.371209	Corpus Christi, Texas	15,499	1,069	413
11	78407	27.810132, -97.441436	Corpus Christi, Texas	3,984	854	330
12	78410	27.831566, -97.581890	Corpus Christi, Texas	23,633	783	302
13	78415	27.679139, -97.498835	Corpus Christi, Texas	38,414	408	158
14	78418	27.619329, -97.330578	Corpus Christi, Texas	26,529	397	153
15	78409	27.805614, -97.510350	Corpus Christi, Texas	2,777	235	91
16	78406	27.773797, -97.517286	Corpus Christi, Texas	1,767	186	72
17	78402	27.823111, -97.404143	Corpus Christi, Texas	455	103	40

Sum of Zip Codes in Corpus Christi:	162,728

1. *Total population for zip codes with greater than 750 people /km2.*
2. *Data obtained from: http://zipatlas.com/us/tx/zip-code-comparison/population-density.htm*

Section 6
Modeling Results

In the final AQA this section will provide the results of the PSD Significance and Full Impact Analyses. All electronic modeling files will be uploaded to the TCEQ's FTPS site. The files will be organized with folders that clearly indicate the types of files contained within the folder.

The modeling results will be presented in a tabular format, comparing the maximum Ground Level Concentration (GLCmax) to the appropriate SIL or Standard.

6.1 NAAQS and PSD Increment Analyses

The NAAQS (actual to allowable changes) and PSD increment analyses will first model the net emissions increases for the project for the Significance Analyses. The maximum concentrations of pollutants due to modeled emissions increases will be predicted using AERMOD and the concentrations compared to the Significant Impact Levels (SILs) as shown on Table 1-1. For each averaging period where the maximum impact concentration is less than the SIL, no further analysis would be required. For each averaging period with a concentration above the SIL, a Full Impact analysis will be conducted.

For PSD constituents, off-property emissions from the TCEQ APAD (see Section 4.5) will be included in the Full Impact Analysis. The Full Impact Analysis modeled concentrations will be added to the monitored background concentrations presented in Section 3 and compared to the NAAQS and PSD increment, as appropriate. The background concentrations are very conservative representations of the background near the site and include both industrial and non-industrial sources. The conservative background concentrations are sufficient to represent the complete background near the site, since the concentrations were measured in areas with higher emissions, but adding in the APAD off-property sources provides an additional level of conservatism to the modeling analysis.

6.2 Ozone Analysis

The proposed total emissions of the site sources for VOC and NO_X are greater than 100 tpy. As such, an ozone analysis is required. To demonstrate compliance with the ozone NAAQS, the analysis described in Section 4.6 was performed. As shown on Table 6-1, the ozone preliminary impact for the project is less than 1, which indicates that the SIL for ozone will not be exceeded when considering the combined impacts of the precursors on 8-hr daily maximum ozone; therefore, a cumulative analysis for ozone is not required.

Table 6-1

Preliminary Impact Analysis for Ozone

Valero Refining – Texas, LP

Bill Greehey Refinery – West Plant

Nueces County, TX

Preliminary Impact Determination

Ozone

Averaging Period	NOx Increase (tpy)		NOx MERP (tpy)				VOC Increase (tpy)		VOC MERP (tpy)				Preliminary Impact
8-Hour	252.34	/	639	=	0.39	+	81.17	/	3816	=	0.02	=	0.42

Averaging Period	Preliminary Impact	
8-Hour	0.42	Less than 1 - No cumulative impact is required

MERP Values and Basis

	Ozone	
	NOX	VOC
MERP (tpy):	639	3816
Basis:	Harris 500 (tpy) Height H	Harris 1000 (tpy) Height H

Section 7
Additional Impacts Analysis

PSD regulations require an Additional Impacts Analysis of the impact from the proposed project on soils, vegetation, visibility, and associated growth. The facility impacts on growth, soils, vegetation, and visibility are discussed in this section.

7.1 Growth Analysis

The elements of the growth analysis include a projection of the associated industrial, commercial, and residential growth that will occur in the area of impact due to the source, including the potential impact on ambient air due to this growth. Emissions from such growth should be considered if they are specific, well defined, quantifiable, and impact the same general area. Emissions from such growth would be viewed as impacting the same area if they impact an area that is predicted to have impacts from the proposed changes to Valero's emissions that are greater than the SIL. Valero anticipates that the employees for the construction will be existing nearby residents; therefore, residential growth is expected to be low. Valero does not anticipate any associated industrial or commercial growth that would impact the significant impact area due to the proposed changes. Therefore, the impact on air quality resulting from any commercial or industrial growth associated with this project is expected to be insignificant. Per the TCEQ AQMG, an in-depth growth analysis would only be required if the project would result in a significant shift of population and associated activity into an area – that is, a population increase on the order of thousands of people.

7.2 Soil and Vegetation Analysis

The NAAQS secondary standards were set by the EPA to provide protection to most soils and vegetation from the adverse effect of air pollution. Model results are all less than the NAAQS secondary standards; therefore, no adverse effects to soils and vegetation are expected.

7.3 Visibility Impairment Analysis

The Valero facility will comply with visibility and opacity requirements in 30 TAC Chapter 111, which is sufficient to satisfy the visibility impairment analysis requirements for Class II areas[7].

7.4 Class 1 Area Analysis

The nearest Class I area (Big Bend National Park) is approximately 550 km from the project site. Since the site is located greater than 100 km from the nearest Class I area, per TCEQ guidance[8], no PSD Class I visibility impairment analysis is required.

[7] *Air Quality Modeling Guidelines*, *APDG 6232v4, Revised 09/18*, page 26.
[8] *Ibid.*

Appendix A

Emission Change Summary

Table 1-1

Allowable Emission Rate Change Summary

HOC Reconfiguration Project
Valero Refining - Texas - West Plant Refinery, Corpus Christi

EPN(s)	FIN(s)	Source Description	CO Current (lb/hr)	CO Proposed (lb/hr)	NO_X Current (lb/hr)	NO_X Proposed (lb/hr)	PM Current (lb/hr)	PM Proposed (lb/hr)	PM_{10} Current (lb/hr)	PM_{10} Proposed (lb/hr)
121	24-ST-01	Heavy Oil Cracker (HOC) Belco Scrubber	889.96	958.40	356.20	384.12	120.32	140.00	120.32	140.00
121/ 30-B-05	MEROX	New Merox Vent								
30-B-05	30-B-05	Boiler	0	33.48	0.00	7.16	0.00	3.56	0	3.56
30-B-05	30-B-05	Boiler (MSS)	0	167.39	0.00	71.61				
HOC-PP-CT	HOC-PP-CT	Cooling Tower					0	0.78	0	0.18
CAS-HOCPP	CAS-HOCPP	HOC Gas Plant Wastewater Lift Statation								
21/22F	HOC-FUG	HOC Unit Fugitives								
42F	SWS-FUG	Sour Wtr, Stripper Fugitives								
FUG-CAP	Various	Piping Fugitives								
HOC-CT	122	HOC Cooling Tower					17.71	3.54	16.82	3.36
		Total:	890.0	1159.3	356.2	462.9	138.0	147.9	137.1	147.1
		Change in Allowable (lb/hr):		269.3		106.7		9.8		10.0

EPN(s)	FIN(s)	Source Description	CO Current (tpy)	CO Proposed (tpy)	NO_X Current (tpy)	NO_X Proposed (tpy)	PM Current (tpy)	PM Proposed (tpy)	PM_{10} Current (tpy)	PM_{10} Proposed (tpy)
121	24-ST-01	Heavy Oil Cracker (HOC) Belco Scrubber	1470.33	1559.15	473.81	473.81	527.00	569.40	527	569.40
121/ 30-B-05	MEROX	New Merox Vent								
30-B-05	30-B-05	Boiler	0	70.84	0.00	30.14	0.00	14.16	0	14.16
HOC-PP-CT	HOC-PP-CT	Cooling Tower					0	3.42	0	0.81
MSS Caps	MSS Caps	MSS Caps	53.9	94.64	11.05	18.03	1.41	2.96	1.31	2.86
CAS-HOCPP	CAS-HOCPP	HOC Gas Plant Wastewater Lift Statation								
21/22F	HOC-FUG	HOC Unit Fugitives								
42F	SWS-FUG	Sour Wtr, Stripper Fugitives								
FUG-CAP	Various	Piping Fugitives								
HOC-CT	122	HOC Cooling Tower					65.86	13.17	62.58	12.52
		Total:	1524.2	1724.6	484.9	522.0	594.3	603.1	590.9	599.8
		Change in Allowable (tpy):		200.4		37.1		8.8		8.9

Table 1-1
Allowable Emission Rate Change Summary
HOC Reconfiguration Project
Valero Refining - Texas - West Plant Refinery, Corpus Christi

EPN(s)	FIN(s)	Source Description	$PM_{2.5}$ Current (lb/hr)	$PM_{2.5}$ Proposed (lb/hr)	SO_2 Current (lb/hr)	SO_2 Proposed (lb/hr)	VOC Current (lb/hr)	VOC Proposed (lb/hr)	H2SO4 Current (lb/hr)	H2SO4 Proposed (lb/hr)
121	24-ST-01	Heavy Oil Cracker (HOC) Belco Scrubber	120.32	140.00	203.53	219.22	28.02	30.18	49.00	49.00
121/ 30-B-05	MEROX	New Merox Vent			0	3.86	0	0.24		
30-B-05	30-B-05	Boiler	0	3.56	0	7.70	0	2.57		
30-B-05	30-B-05	Boiler (MSS)								
HOC-PP-CT	HOC-PP-CT	Cooling Tower	0	0.001			0	1.09		
CAS-HOCPP	CAS-HOCPP	HOC Gas Plant Wastewater Lift Statation					0	0.005		
21/22F	HOC-FUG	HOC Unit Fugitives								
42F	SWS-FUG	Sour Wtr, Stripper Fugitives								
FUG-CAP	Various	Piping Fugitives					101.17	107.87		
HOC-CT	122	HOC Cooling Tower	2.63	0.53			5.67	5.67		
		Total:	123.0	144.1	203.5	230.8	134.9	147.6	49.0	49.0
		Change in Allowable (lb/hr):		21.1		27.3		12.8		0.0

EPN(s)	FIN(s)	Source Description	$PM_{2.5}$ Current (tpy)	$PM_{2.5}$ Proposed (tpy)	SO_2 Current (tpy)	SO_2 Proposed (tpy)	VOC Current (tpy)	VOC Proposed (tpy)	H2SO4 Current (tpy)	H2SO4 Proposed (tpy)
121	24-ST-01	Heavy Oil Cracker (HOC) Belco Scrubber	527	569.40	420.09	420.12	115.53	122.74	214.62	199.30
121/ 30-B-05	MEROX	New Merox Vent			0	16.91	0	1.05		
30-B-05	30-B-05	Boiler	0	14.16	0	21.15	0	10.25	0	0.00
HOC-PP-CT	HOC-PP-CT	Cooling Tower	0	0.01			0	4.78		
MSS Caps	MSS Caps	MSS Caps	1.29	2.84	37.33	38.99	44.83	45.22		
CAS-HOCPP	CAS-HOCPP	HOC Gas Plant Wastewater Lift Statation					0	0.02		
21/22F	HOC-FUG	HOC Unit Fugitives								
42F	SWS-FUG	Sour Wtr, Stripper Fugitives								
FUG-CAP	Various	Piping Fugitives					443.11	472.44		
HOC-CT	122	HOC Cooling Tower	9.78	1.96			21.09	21.09		
		Total:	538.1	588.4	457.4	497.2	624.6	677.6	214.6	199.3
		Change in Allowable (tpy):		50.3		39.8		53.0		-15.3

Table 1-1

Allowable Emission Rate Change Summary

HOC Reconfiguration Project
Valero Refining - Texas - West Plant Refinery, Corpus Christi

			HCN		NH3		H2S	
EPN(s)	FIN(s)	Source Description	Current (lb/hr)	Proposed (lb/hr)	Current (lb/hr)	Proposed (lb/hr)	Current (lb/hr)	Proposed (lb/hr)
121	24-ST-01	Heavy Oil Cracker (HOC) Belco Scrubber	80.47	80.47	0	4.84		
121/ 30-B-05	MEROX	New Merox Vent					0	0.001
30-B-05	30-B-05	Boiler			0	2.18		
30-B-05	30-B-05	Boiler (MSS)						
HOC-PP-CT	HOC-PP-CT	Cooling Tower						
CAS-HOCPP	CAS-HOCPP	HOC Gas Plant Wastewater Lift Statation						
21/22F	HOC-FUG	HOC Unit Fugitives					0.03	0.03
42F	SWS-FUG	Sour Wtr, Stripper Fugitives					<0.01	<0.01
FUG-CAP	Various	Piping Fugitives			0	0.010	0	0.01
HOC-CT	122	HOC Cooling Tower						
		Total:	80.5	80.5	0.0	7.0	0.0	0.0
		Change in Allowable (lb/hr):		0.0		7.0		0.0

			HCN		NH3		H2S	
			Current (tpy)	Proposed (tpy)	Current (tpy)	Proposed (tpy)	Current (tpy)	Proposed (tpy)
121	24-ST-01	Heavy Oil Cracker (HOC) Belco Scrubber	320.4	320.40	0	17.88		
121/ 30-B-05	MEROX	New Merox Vent					0	0.004
30-B-05	30-B-05	Boiler	0	0.00	0	8.68		
HOC-PP-CT	HOC-PP-CT	Cooling Tower						
MSS Caps	MSS Caps	MSS Caps					0.22	0.22
CAS-HOCPP	CAS-HOCPP	HOC Gas Plant Wastewater Lift Statation						
21/22F	HOC-FUG	HOC Unit Fugitives					0.12	0.14
42F	SWS-FUG	Sour Wtr, Stripper Fugitives					0.02	0.02
FUG-CAP	Various	Piping Fugitives			0	0.06	0	0.06
HOC-CT	122	HOC Cooling Tower						
		Total:	320.4	320.4	0.0	26.6	0.4	0.4
		Change in Allowable (tpy):		0.0		26.6		0.1

Prevention of Significant Deterioration Permit Application

TCEQ Air Quality Permit Nos. 38754, PSDTX324M14
HOC Reconfiguration Project

See Electronic File Entitled:

“2021.09.30 Electronic Files.zip”

Valero

December 17, 2021

Via Email

Ms. Cara Hill
Air Permits Division - MC 163
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, Texas 78711-3087

Re: Permit Application
Permit Numbers: 138754, PSDTX324M15, and GHGPSDTX211
Valero Corpus Christi Refinery West Plant
Corpus Christi, Nueces County
Regulated Entity Number: RN100214386
Customer Reference Number: CN600127468

Dear Ms. Hill

Please find the additional information requested in your letter dated December 8, 2021, regarding the permit application for the Valero Refining-Texas L.P. Heavy Oil Cracker (HOC) Unit Reconfiguration Project at the Corpus Christi West Plant.

Response to NOD Questions

1. The Federal Applicability tab in the Form PI-1 Workbook indicates that Fluoride requires a PSD review. This pollutant does not appear to require PSD review based on a review of the application. Please provide an updated Form PI-1 Workbook with this correction or provide an explanation as to why "yes" was selected for this pollutant.

Response:

The application does not require PSD review for fluoride emissions. The "Yes" answer was a function of the automatic formula in the PI-Workbook. To correct this issue the PSD applicability thresholds for fluoride and lead (Pb) have been entered in the revised PI-1 Workbook attached to the email transmitting this response letter.

2. *Please provide a Table 2 Material Balance for this project.*

Response:

A Table 2 Material Balance for the new Secondary Riser-Reactor and Gas Plant process is attached.

3. *The application indicates that the hourly CO emission rates for Boiler 30-B-05 during startup are proposed to be higher than the hourly CO emission rates during routine operations. While a higher performance limit (lb/MMBtu) during start-up is allowed, the routine hourly CO emission rate is expected to be met during start-up. Please provide justification as to why this boiler would be unable to meet the routine hourly CO emission rate during MSS.*

Response:

For a very recent permitting project of the grass roots Diamond Green Diesel plant (Project 312721) the CO allowable mass emission rates during startup for two process heaters were based on the maximum firing rate at the same 500 ppmv concentration used for the new proposed boiler 30-B-05. As part of this same project a new boiler to be located at the Premcor Refinery (Project 312722) was also permitted with allowable mass emission rates during startup based on the maximum firing rate at 500 ppmv. Boiler 30-B-04 in Permit 38754 has a separate startup mass emission rate limit on the MAERT based on the maximum firing rate at 500 ppmv. Based on these examples, Valero believes it is appropriate to base the startup emission limit for Boiler 30-B-05 on the maximum firing rate at 500 ppmv.

4. *Tier I BACT for boilers firing refinery fuel gas is 0.01 lb/MMBtu on an annual basis is and 0.015 lb/MMBtu on an hourly basis for NOX. The BACT section and calculations indicate that a NOX rate of 0.015 lb/MMBtu on an annual basis is being proposed. Please either update the calculations, Form PI-1, and BACT review to reflect Tier I BACT, or provide an updated BACT review in accordance with APDG 6110 to support the proposed NOX rate of 0.015 lb/MMBtu on an annual basis.*

Response:

Valero believes that the annual NO_X emission basis of 0.015 lb/MMBtu is Tier I BACT for a boiler firing refinery fuel gas because recently permitted boilers of similar size have been authorized with annual emissions based on 0.015 lb/MMBtu. The new boiler will be fired on refinery fuel gas which is different than natural gas, in that it typically contain a higher hydrogen content and has been granted higher BACT limits of NO_X. In addition, to the two boilers authorized in TCEQ project 303824 (Permit 49138), the new boiler at the Premcor Refinery (Project 312722), discussed above, was authorized at an annual NO_X emission rate limit was based on 0.015 lb/MMBtu. In addition, the current non-rule Standard Permit for boiler limits NO_X emissions to 0.015 lb/MMBtu for boilers firing refinery fuel gas. The Standard Permit does not specify an averaging period so it is presumed to apply towards the annual average as well as hourly averaging periods.

5. *Please provide vendor data or other documentation that shows that the drift eliminators for the HOC cooling tower are designed with a 0.001% drift loss.*

Response:

Attached are 2012 invoices for the installation of the new high efficiency Brentwood Industries' XF-150MAx drift eliminators. A brochure for these drift eliminators is also attached with information that they are designed to achieve 0.001% drift loss.

6. *The proposed breakthrough sampling frequency for the CAS is once every two weeks. Typically, the breakthrough sampling is at a frequency between 20 and 30 percent of the minimum potential saturation time. Please provide the design details or manufacturer data to support the proposed monitoring frequency.*

Response:

Since the project is very early in the design phase, detailed design is not yet available. The refinery currently operates many CAS systems throughout the refinery and expects the new CAS to be similar to the existing units used on the wastewater collect system. To demonstrate that the two week monitoring frequency is appropriate attached is actual monitoring data for a CAS 79-01 which controls wastewater, assumed to have similar characteristics to the proposed new gas plant, from the existing LPG unit at the refinery. Please note that breakthrough is defined at a benzene concentration greater than 5 ppmv.

7. *Please provide the final AQA, EMEW, and modeling files. Please ensure that the attached comments on the modeling protocol are addressed in the final modeling.*

Response:

The final Air Quality Analysis will be submitted under a separate cover prior to the deadline of January 22, 2022.
If you have any questions or require additional information, please do not hesitate to contact me at (361) 299-8913 or Meagan.Marquard@valero.com.

Sincerely,

Meagan Marquard
Environmental Superintendent

Enclosures

cc: Air Section Manager, Region 14 – Corpus Christi (via email)
Air Permits Section Chief, New Source Review Section (6PD-R), U.S. Environmental Protection Agency, Region 6, Dallas (via email)

Attachments

Table 2 Material Balance – Secondary Riser-Reactor and New Gas Plant

HOC Cooling Tower Drift Eliminator Information

CAS Monitoring Data

Updated NSR Workbook (electronically attached to email)

Texas Commission on Environmental Quality
Table 2
Material Balance

Secondary Riser-Reactor and New Gas Plant

This material balance table is used to quantify possible emissions of air contaminants and special emphasis should be placed on potential air contaminants, for example: If feed contains sulfur, show distribution to all products. Please relate each material (or group of materials) listed to its respective location in the process flow diagram by assigning emission point numbers (taken from the flow diagram) to each material.

List every material involved in each of the following groups	Emission Point No. from Flow Diagram	Process Rate[1] Check appropriate column at right to indicate process rate method.	Measurement	Estimation	Calculation
Raw Materials - Input					
Naphtha Feed		536,700 lb/hr		X	
Reactor Steam		92,100 lb/hr		X	
Inerts and H2O from HOC Regenerator		12,860 lb/hr		X	
Vapor Recovery Section Steam		2,200 lb/hr		X	
Air		900 lb/hr		X	
Fuels - Input					
Refinery Fuel Gas		478,000 scfh			
Products and By-Products - Output					
Coke for Catalyst Regeneration		4,200 lb/hr		X	
Off Gas		43,400 lb/hr		X	
C3 Product		97,400 lb/hr		X	
C4 Product		65,700 lb/hr		X	
Naphtha Product		316,200 lb/hr		X	
LCO Product		24,400 lb/hr		X	
Sour Water		91,000 lb/hr		X	
Steam to HOC		9,200 lb/hr		X	
Solid Wastes - Output					
Liquid Wastes - Output					
Airborne Waste (Solid) - Output		See Table 1-1			
Airborne Wastes (Gaseous) - Output		See Table 1-1			

[1] Specify the process rate of the facility using conventional engineering units (e.g., bbl/d, lb/yr, SCFM), and indicate the units next to each number. Standard Conditions: are 68°F 14.7 psia (30 Texas Administrative Code, Section 101.1(99).

NOTE:
Above material balance is representative of expected operations, but is not intended to represent specific operating limitations or constraints. Total plant throughput and amounts of products can vary depending on the composition of the feed material and such variations are intended to be authorized as long as compliance with permit allowable emission rates is maintained.

Cooling Towers of Texas
'The One Source for all of Your Cooling Tower Needs'

INVOICE

Invoice Number:CT-1378-9
Invoice Date: Jan 24, 2013

1310 West Main Street
La Porte, TX 77571
US

281-484-2665

FEIN # 20-1180560

Bill To:	**Ship to:**
Valero Refining-Texas,LP P.O. Box 690990 San Antonio, TX 78269	Valero Corporate Services 1122 CANTWELL LN CORPUS CHRIST, TX 78407

Customer PO	Payment Terms	Due Date
4502370944	Net 30 Days	2/23/13

Quantity	Item	Description	Unit Price	Amount
	00000010	Freight at cost plus 5% per contract corp.12.fa.00020 WORK ORDER#7112245001		[redacted]

Subtotal	$ [redacted]
Sales Tax	
TOTAL	**$** [redacted]

For questions regarding this invoice please contact Angie Coleman via e-mail angie@ctoftx.com or by phone at 281-484-2665.

BRENTWOOD INDUSTRIES

BRENTWOOD INDUSTRIES, INC.
610 Morgantown Road
Reading, PA 19611 USA
Phone: (610) 374-5109
Fax: (610) 376-6022

RECEIVED
DEC 10 2012
BY: [signature]

INVOICE

INVOICE NO.:	HOPE HI0000002600
PAGE NO.:	1 of 1
INVOICE DATE:	12/4/2012
SALES PERSON:	10003
INVOICE TYPE:	

BILL TO
5739

COOLING TOWERS OF TEXAS
1310 W MAIN ST
LA PORTE TX 77571-4813
USA

SHIP TO
VALERO BILL GREEHEY REFINERY
1122 CANTWELL LN
CORPUS CHRISTI TX 78407-1706
USA

Currency: USD US DOLLAR Fax: 281-484-2371 Rep Code:

JOB NO.	CUSTOMER PO	PKGS	PPD	WEIGHT	SHIPPED VIA	TERMS
	CT-1378-1	768	N	8,000.00	EMWAY INC / BROCK	NET 30 DAYS

P/S Line	Qty Ordered	Qty Shipped	Qty Back Ordered	Unit Price	Extended Price
3	768.00000	768.00000	0.00000		

Delivery Order: HD00000000000000000000000014849
Date Shipped: 12/4/2012

Customer Item:
Item: AWCT09632
Description: XF150MAX-15-5.25X12X72-RPVC-DG
U/M: EA
PO: CT-1378-1
DO Line: 1
TAG: VALERO PO# 4502370944
ATTN: JOHN STEWART
Order Number: H000015567 - 3

Initial		DATE		Initial	pdc	DATE	12/11/12
GL			AMT				
GL			AMT				
GL			AMT				
GL			AMT				

REMIT PAYMENTS TO:
Brentwood Industries, Inc.
Account No. 8019347676
P.O. Box 827837
Philadelphia, PA 19182-7837 USA

Unless otherwise specified under contract, all sales of Brentwood products and services are subject to the terms and conditions found at brentwoodindustries.com and related web pages referred to at that site. The terms and conditions (including warranties) may vary by division or service. Printed copies of applicable warranties and other terms and conditions may be obtained on request from the respective Brentwood division.

SALES AMOUNT:	
MISC CHARGES:	0.00
FREIGHT:	[redacted]
SALES TAX:	0.00
PREPAID AMOUNT	0.00
TOTAL: USD	

BRENTWOOD
INDUSTRIES

BRENTWOOD INDUSTRIES, INC.
610 Morgantown Road
Reading, PA 19611 USA
Phone: (610) 374-5109
Fax: (610) 376-6022

INVOICE

INVOICE NO.: HOPE HI0000002616
PAGE NO.: 2 of 2
INVOICE DATE: 12/6/2012
SALES PERSON: 10003
INVOICE TYPE:

BILL TO
5739

COOLING TOWERS OF TEXAS
1310 W MAIN ST
LA PORTE TX 77571-4813
USA

SHIP TO

VALERO BILL GREEHEY REFINERY
1122 CANTWELL LN
CORPUS CHRISTI TX 78407-1706
USA

Currency: USD US DOLLAR Fax: 281-484-2371 Rep Code:

JOB NO.	CUSTOMER PO	PKGS	PPD	WEIGHT	SHIPPED VIA	TERMS
	CT-1378-1	783	N	16,000.00	STUART/BROCK ~ CDC TRANS	NET 30 DAYS

P/S Line	Qty Ordered	Qty Shipped	Qty Back Ordered	Unit Price	Extended Price

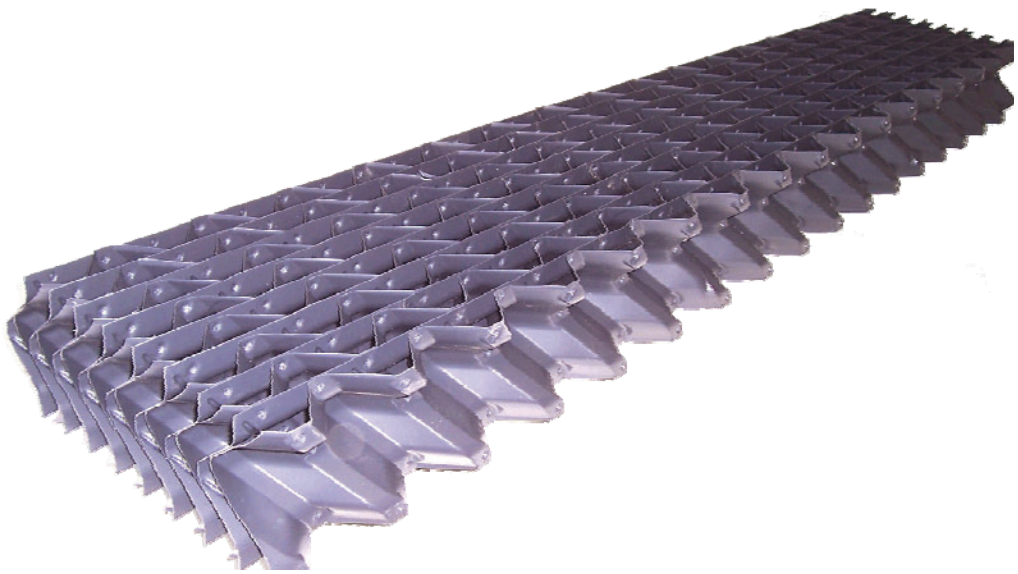
Description: PALLETIZING CHARGES
U/M: EA
PO: CT-1378-1
DO Line: 1
Order Number: H000015567 - 6

REMIT PAYMENTS TO:
Brentwood Industries, Inc.
Account No. 8019347676
P.O. Box 827837
Philadelphia, PA 19182-7837 USA

SALES AMOUNT:	
MISC CHARGES:	0.00
FREIGHT:	[redacted]
SALES TAX:	0.00
PREPAID AMOUNT	0.00
TOTAL: USD	

ACCU-PAC®
SURFACE MEDIA

XF-150MAx High-Efficiency Crossflow Drift Eliminator



Brentwood Industries is pleased to introduce the XF-150Max, a high-efficiency, cellular drift eliminator ***specifically designed for crossflow tower applications***. Its design maximizes drift reduction by providing an upward flow path and discharge angle of 40º-55º from the horizontal depending on installation angle. It can also be installed vertically and be fully effective. The upward flow path and molded-in drainage channels keep drift emissions minimized by directing the collected drift back to the wet section of the tower, even when impacted with water spray. It also incorporates our patented MA (mechanical assembly) technology which provides a number of benefits, including environmental. With its fully nesting design, Dri Seals, and careful installation, a properly designed crossflow cooling tower can achieve 0.001% drift emissions or less per the CTI STD-140 test method. In retrofit projects, older cooling towers will also see a vast improvement of drift emissions. Made from rigid, UV protected PVC that meets CTI STD-136, the XF-150MAx is offered in two material gauges; 15 mil (0.38mm) standard gauge and 20 mil (0.51mm) heavy duty gauge.

Example Specification

Drift eliminators shall be of the cellular type, Brentwood XF-150MAx or approved equal and be designed specifically for crossflow cooling towers. The modules shall be made from self-extinguishing, rigid PVC that meets CTI STD-136 with UV protection and be assembled without adhesives or solvents. It shall have a flame spread rating of 15 or less (per ASTM E-84) and be designed to nest to prevent drift-bypass between modules. The air passageways shall cause the air to make at least three directional changes and provide an upward discharge flow path angle of at least 40º. Water management drainage channels shall be integral to the design.

In the standard 10º from vertical crossflow configuration, the modules shall be able to be supported on up to 96” centers with minimal deflection (up to 120” spans with optional heavy duty material). The drift eliminator modules shall measure 5.25” deep, up to 18” wide, and up to 144” long.

BRENTWOOD INDUSTRIES

Monitoring Data for CAS 79-01

Date	Test Time	Primary Canister Benzene (ppmv)
1/8/2020	7:29 AM	0
1/22/2020	8:12 AM	0
2/4/2020	9:14 AM	0
2/21/2020	9:55 AM	0
3/3/2020	9:27 AM	0
3/17/2020	9:42 AM	0
3/31/2020	7:39 AM	0
4/14/2020	8:43 AM	0.23
4/28/2020	7:13 AM	0
5/13/2020	7:31 AM	0
5/26/2020	7:05 AM	0
6/9/2020	9:17 AM	0
6/24/2020	9:03 AM	0
7/7/2020	10:28 AM	0
7/20/2020	10:48 AM	0
8/4/2020	2:47 PM	0.41
8/18/2020	2:54 PM	0
9/1/2020	11:15 AM	0
9/15/2020	10:15 AM	2.91
9/29/2020	9:19 AM	3.8
10/13/2020	10:15 AM	0
10/28/2020	8:02 AM	0.13
11/10/2020	8:21 AM	0
11/24/2020	9:34 AM	0
12/8/2020	10:33 AM	12.6
12/9/2020	7:26 AM	0.35
12/22/2020	7:24 AM	0
1/21/2021	11:30 AM	29.3
1/22/2021	11:45 AM	0
2/2/2021	10:54 AM	0
2/18/2021	9:36 AM	0
3/2/2021	7:58 AM	0
3/16/2021	9:07 AM	0
3/29/2021	8:34 AM	0.25
4/14/2021	8:33 AM	0.59
4/28/2021	7:45 AM	0
5/12/2021	7:45 AM	0
5/25/2021	8:02 AM	0
6/8/2021	7:54 AM	0.32
6/25/2021	11:04 AM	0
7/6/2021	8:06 AM	1.14

Monitoring Data for CAS 79-01

Date	Test Time	Primary Canister Benzene (ppmv)
7/19/2021	3:33 PM	0
8/2/2021	3:21 PM	0
8/17/2021	8:36 AM	0
9/1/2021	7:34 AM	0.72
9/14/2021	8:03 AM	3.02
9/27/2021	2:26 PM	0
10/12/2021	2:07 PM	0
10/26/2021	10:18 AM	2.58
11/9/2021	8:36 AM	0
11/22/2021	9:09 AM	0
12/9/2021	9:11 AM	0

I. Applicant Information	
I acknowledge that I am submitting an authorized TCEQ application workbook and any necessary attachments. Except for inputting the requested data and adjusting row height and column width, I have not changed the TCEQ application workbook in any way, including but not limited to changing formulas, formatting, content, or protections.	I agree

A. Company Information

Company or Legal Name:	Valero Refining - Texas, L.P.

Permits are issued to either the facility owner or operator, commonly referred to as the applicant or permit holder. List the legal name of the company, corporation, partnership, or person who is applying for the permit. We will verify the legal name with the Texas Secretary of State at (512) 463-5555 or at the link below:

https://www.sos.state.tx.us

Texas Secretary of State Charter/Registration Number (if given):	

B. Company Official Contact Information: must not be a consultant

Prefix (Mr., Ms., Dr., etc.):	Mr.
First Name:	Joe
Last Name:	Almaraz
Title:	Director Environmental / Safety Affairs
Mailing Address:	P.O. Box 9370
Address Line 2:	
City:	Corpus Christi
State:	Texas
ZIP Code:	78469
Telephone Number:	361-289-3328
Fax Number:	361-289-3126
Email Address:	Joe.Almaraz@valero.com

C. Technical Contact Information: This person must have the authority to make binding agreements and representations on behalf of the applicant and may be a consultant. **Additional technical contact(s) can be provided in a cover letter.**

Prefix (Mr., Ms., Dr., etc.):	Ms.
First Name:	Meagan
Last Name:	Marquard
Title:	Superintendent Environmental
Company or Legal Name:	Valero Refining - Texas, L.P.
Mailing Address:	P.O. Box 9370
Address Line 2:	
City:	Corpus Christi
State:	Texas
ZIP Code:	78469
Telephone Number:	361-299-8913
Fax Number:	361-289-3126
Email Address:	Meagan.Marquard@valero.com

D. Assigned Numbers

The CN and RN below are assigned when a Core Data Form is initially submitted to the Central Registry. The RN is also assigned if the agency has conducted an investigation or if the agency has issued an enforcement action. If these numbers have not yet been assigned, leave these questions blank and include a Core Data Form with your application submittal. See Section VI.B. below for additional information.

Enter the CN. The CN is a unique number given to each business, governmental body, association, individual, or other entity that owns, operates, is responsible for, or is affiliated with a regulated entity.	CN600127468

Enter the RN. The RN is a unique agency assigned number given to each person, organization, place, or thing that is of environmental interest to us and where regulated activities will occur. The RN replaces existing air account numbers. The RN for portable units is assigned to the unit itself, and that same RN should be used when applying for authorization at a different location.	RN100214386

II. Delinquent Fees and Penalties

Does the applicant have unpaid delinquent fees and/or penalties owed to the TCEQ? This form will not be processed until all delinquent fees and/or penalties owed to the TCEQ or the Office of the Attorney General on behalf of the TCEQ are paid in accordance with the Delinquent Fee and Penalty Protocol. For more information regarding Delinquent Fees and Penalties, go to the TCEQ Web site at the link below:	No

https://www.tceq.texas.gov/agency/financial/fees/delin

III. Permit Information

A. Permit and Action Type (multiple may be selected, leave no blanks)

Additional information regarding the different NSR authorizations can be found at the link below:
https://www.tceq.texas.gov/permitting/air/guidance/authorize.html

Select from the drop-down the type of action being requested for each permit type. **If that permit type does not apply, you MUST select "Not applicable".**

Provide all assigned permit numbers relevant for the project. Leave blank if the permit number has not yet been assigned.

Permit Type	**Action Type Requested (do not leave blank)**	**Permit Number (if assigned)**
Minor NSR (can be a Title V major source): *Not applicable, Initial, Amendment, Renewal, Renewal Certification, Renewal/Amendment, Relocation/Alteration, Change of Location, Alteration, Extension to Start of Construction*	Amendment	38754
Special Permit: *Not applicable, Amendment, Renewal, Renewal Certification, Renewal/Amendment, Alteration, Extension to Start of Construction*	Not applicable	
De Minimis: *Not applicable, Initial*	Not applicable	
Flexible: *Not applicable, Initial, Amendment, Renewal, Renewal Certification, Renewal/Amendment, Alteration, Extension to Start of Construction*	Not applicable	
PSD: *Not applicable, Initial, Major Modification*	Major Modification	PSDTX324M14
Nonattainment: *Not applicable, Initial, Major Modification*	Not applicable	
HAP Major Source [FCAA § 112(g)]: *Not applicable, Initial, Major Modification*	Not applicable	
PAL: *Not applicable, Initial, Amendment, Renewal, Renewal/Amendment, Alteration*	Not applicable	
GHG PSD: *Not applicable, Initial, Major Modification, Voluntary Update*	Initial	TBD

GHG projects: List the non-GHG applications (pending or being submitted) that are associated with the project. Note: All preconstruction authorizations (including authorization for emissions of greenhouse gases, if applicable) must be obtained prior to start of construction.	

B. MSS Activities

How are/will MSS activities for sources associated with this project be authorized?	This permit

C. Consolidating NSR Permits

Will this permit be consolidated into another NSR permit with this action?	No
Will NSR permits be consolidated into this permit with this action?	No

D. Incorporation of Standard Permits, Standard Exemptions, and/or Permits By Rule (PBR)

To ensure protectiveness, previously issued authorizations (standard permits, standard exemptions, or PBRs) including those for MSS, are incorporated into a permit either by consolidation or by reference.

- Authorizations entirely incorporated by consolidation will be voided when the project is complete, and the sources and allowable emissions will be added to the NSR permit's MAERT.
- Authorizations incorporated by reference will be referenced with the final action for this project but will not be voided. Sources will continue to be authorized in the current manner.

At the time of renewal and/or amendment, consolidation (in some cases) may be voluntary and referencing is mandatory. More guidance regarding incorporation can be found in 30 TAC § 116.116(d)(2), 30 TAC § 116.615(3) and in this memo (link below):

https://www.tceq.texas.gov/assets/public/permitting/air/memos/pbr_spc06.pdf

Are there any standard permits, standard exemptions, or PBRs to be incorporated by reference?	No
Are there any PBR, standard exemptions, or standard permits associated to be incorporated by consolidation? **Note:** Emission calculations, a BACT analysis, and an impacts analysis must be attached to this application at the time of submittal for any authorization to be incorporated by consolidation.	No

E. Associated Federal Operating Permits	
Is this facility located at a site required to obtain a **site operating permit (SOP)** or **general operating permit (GOP)?**	Yes
Is a **SOP** or **GOP** review pending for this source, area, or site?	No
If required to obtain a **SOP** or **GOP**, list all associated permit number(s). If no associated permit number has been assigned yet, enter "TBD":	O1458

IV. Facility Location and General Information	
A. Location	
County: Enter the county where the facility is physically located.	Nueces
TCEQ Region	Region 14
County attainment status as of Sept. 23, 2019	attainment or unclassified for all pollutants
Street Address:	5900 Up River Road
City: If the address is not located in a city, then enter the city or town closest to the facility, even if it is not in the same county as the facility.	Corpus Christi
ZIP Code: Include the ZIP Code of the physical facility site, not the ZIP Code of the applicant's mailing address.	78407
Site Location Description: If there is no street address, provide written driving directions to the site. Identify the location by distance and direction from well-known landmarks such as major highway intersections.	Not applicable
Use USGS maps, county maps prepared by the Texas Department of Transportation, or an online software application such as Google Earth to find the latitude and longitude.	
Latitude (in degrees, minutes, and nearest second (DDD:MM:SS)) for the street address or the destination point of the driving directions. Latitude is the angular distance of a location north of the equator and will always be between 25 and 37 degrees north (N) in Texas.	027:49:14
Longitude (in degrees, minutes, and nearest second (DDD:MM:SS)) for the street address or the destination point of the driving directions. Longitude is the angular distance of a location west of the prime meridian and will always be between 93 and 107 degrees west (W) in Texas.	097:29:18
Is this a project for a lead smelter, concrete crushing facility, and/or a hazardous waste management facility?	No
B. General Information	
Site Name:	Valero Corpus Christi Refinery West Plant

Date: 12/17/2021
Permit #: 38754
Company: Valero Refining - Texas, L.P.

Area Name: Must indicate the general type of operation, process, equipment or facility. Include numerical designations, if appropriate. Examples are Sulfuric Acid Plant and No. 5 Steam Boiler. Vague names such as Chemical Plant are not acceptable.	West Plant
Are there any schools located within 3,000 feet of the site boundary?	No
C. Portable Facility	
Permanent or portable facility?	Permanent
D. Industry Type	
Principal Company Product/Business:	Petroleum Refining
A list of SIC codes can be found at the link below: https://www.naics.com/sic-codes-industry-drilldown/	
Principal SIC code:	2911
NAICS codes and conversions between NAICS and SIC Codes are available at the link below: https://www.census.gov/eos/www/naics/	
Principal NAICS code:	324110
E. State Senator and Representative for this site	
This information can be found at the link below (note, the website is not compatible to Internet Explorer): https://wrm.capitol.texas.gov/	
State Senator:	Juan "Chuy" Hinojosa
District:	Texas Senate District 20
State Representative:	Abel Herrero
District:	Texas House District 34

V. Project Information	
A. Description	
Provide a **brief** description of the project that is requested (describe the what, not the how and why). Limited to 500 characters.	Valero plans to undertake changes to the West Plant Heavy Oil Cracker (HOC), a fluidized catalytic cracking (FCC) unit. Due to the integrated nature of refinery operations, the project ("HOC Reconfiguration Project") will necessitate construction of a new utility boiler, a new cooling tower, and a new Gas Plant.
B. Project Timing	
Authorization must be obtained for many projects before beginning construction. Construction is broadly interpreted as anything other than site clearance or site preparation. Enter the date as "Month Date, Year" (e.g. July 4, 1776).	
Projected Start of Construction:	October 1, 2022
Projected Start of Operation:	January 1, 2024
C. Enforcement Projects	
Is this application in response to, or related to, an agency investigation, notice of violation, or enforcement action?	No
D. Operating Schedule	
Will sources in this project be authorized to operate 8760 hours per year?	Yes

VI. Application Materials	
All representations regarding construction plans and operation procedures contained in the permit application shall be conditions upon which the permit is issued. (30 TAC § 116.116)	
A. Confidential Application Materials	
Is confidential information submitted with this application?	No
B. Is the Core Data Form (Form 10400) attached (link to the form below)?	N/A
C. Is a current area map attached?	Yes
Is the area map a current map with a true north arrow, an accurate graduated scale, the entire plant property, the location of the property relative to prominent geographical features including, but not limited to, highways, roads, streams, and significant landmarks such as buildings, residences, schools, parks, hospitals, day care centers, and churches?	Yes
Does the map show a 3,000-foot radius from the property boundary?	Yes
D. Is a plot plan attached?	Yes
Does your plot plan clearly show a north arrow, an accurate scale, all property lines, all emission points, buildings, tanks, process vessels, other process equipment, and two bench mark locations?	Yes
Does your plot plan identify all emission points on the affected property, including all emission points authorized by other air authorizations, construction permits, PBRs, special permits, and standard permits?	Yes
Did you include a table of emission points indicating the authorization type and authorization identifier, such as a permit number, registration number, or rule citation under which each emission point is currently authorized?	Yes
E. Is a process flow diagram attached?	Yes
Is the process flow diagram sufficiently descriptive so the permit reviewer can determine the raw materials to be used in the process; all major processing steps and major equipment items; individual emission points associated with each process step; the location and identification of all emission abatement devices; and the location and identification of all waste streams (including wastewater streams that may have associated air emissions)?	Yes
F. Is a process description attached?	Yes
Does the process description emphasize where the emissions are generated, why the emissions must be generated, what air pollution controls are used (including process design features that minimize emissions), and where the emissions enter the atmosphere?	Yes
Does the process description also explain how the facility or facilities will be operating when the maximum possible emissions are produced?	Yes
G. Is a detailed list of requested actions included in the application? This list can be included in the project description.	Yes
H. Are detailed calculations attached? Calculations must be provided for each source with new or changing emission rates. For example, a new source, changing emission factors, decreasing emissions, consolidated sources, etc. Calculations do not need to be submitted for sources without any proposed emission rate changes. Note: the preferred format is an electronic workbook (such as Excel) with all formulas viewable for review.	Yes
Are emission rates and associated calculations for planned MSS facilities and related activities attached?	Yes
I. Is a material balance (Table 2, Form 10155) attached?	Yes

Table 2 (Form 10155), entitled Material Balance: A material balance representation may be required for all applications to confirm technical emissions information. Typically this is required for refining and chemical manufacturing processes involving reactions, separations, and blending. It may also be requested by the permit reviewer for other applications. Table 2 should represent the total material balance; that is, all streams into the system and all streams out. Additional sheets may be attached if necessary. Complex material balances may be presented on spreadsheets or indicated using process flow diagrams. All materials in the process should be addressed whether or not they directly result in the emission of an air contaminant. All production rates must be based on maximum operating conditions.	
J. Is a list of MSS activities attached?	Yes
Are the MSS activities listed and discussed separately, each complete with the authorization mechanism or emission rates, frequency, duration, and supporting information if authorized by this permit?	Yes
K. Is a discussion of state regulatory requirements attached, addressing 30 TAC Chapters 101, 111, 112, 113, 115, and 117?	Yes
For all applicable chapters, does the discussion include how the facility will comply with the requirements of the chapter?	Yes
For all not applicable chapters, does the discussion include why the chapter is not applicable?	Yes
L. Are all other required tables, calculations, and descriptions attached?	Yes

VII. Signature

The owner or operator of the facility must apply for authority to construct. The appropriate company official (owner, plant manager, president, vice president, or environmental director) must sign all copies of the application. The applicant's consultant cannot sign the application. **Important Note: Unless submitting through STEERS, signatures must be original in ink, not reproduced by photocopy, fax, or other means, and must be received before any permit is issued.**

The signature below confirms that I have knowledge of the facts included in this application and that these facts are true and correct to the best of my knowledge and belief. I further state that to the best of my knowledge and belief, the project for which application is made will not in any way violate any provision of the Texas Water Code (TWC), Chapter 7; the Texas Health and Safety Code, Chapter 382; the Texas Clean Air Act (TCAA); the air quality rules of the Texas Commission on Environmental Quality; or any local governmental ordinance or resolution enacted pursuant to the TCAA. I further state that I understand my signature indicates that this application meets all applicable nonattainment, prevention of significant deterioration, or major source of hazardous air pollutant permitting requirements. The signature further signifies awareness that intentionally or knowingly making or causing to be made false material statements or representations in the application is a criminal offense subject to criminal penalties.

Name:	Joe Almaraz
Signature:	
Original signature is required unless submitted through STEERS.	
Date:	September 30, 2021

I. Additional Questions for Specific NSR Minor Permit Actions

[redacted]

[redacted]

[redacted]

[redacted]

VIII. Federal Regulatory Questions	
Indicate if any of the following requirements apply to the proposed facility. Note that some federal regulations apply to minor sources. Enter all applicable Subparts.	
A. Title 40 CFR Part 60	
Do NSPS subpart(s) apply to a facility in this application?	Yes
List applicable subparts you will demonstrate compliance with (e.g. Subpart M)	Subparts A, J, Ja, K, Ka, Kb, VV, XX, GGG, NNN, QQQ, RRR
B. Title 40 CFR Part 61	

Do NESHAP subpart(s) apply to a facility in this application?	Yes
List applicable subparts you will demonstrate compliance with (e.g. Subpart BB)	Subparts A, M, FF
C. Title 40 CFR Part 63	
Do MACT subpart(s) apply to a facility in this application?	Yes
List applicable subparts you will demonstrate compliance with (e.g. Subpart VVVV)	Subparts A, F, G, H, R, Y, CC, UUU, DDDDD, GGGGG

IX. Emissions Review

A. Impacts Analysis

Any change that may result in an increase in off-property concentrations of air contaminants requires an air quality impacts demonstration, which may include a qualitative analysis, the MERA, and/or modeling. Information regarding the air quality impacts demonstration must be provided with the application and show compliance with all state and federal requirements. Detailed requirements for the information necessary to make the demonstration are listed on the Impacts sheet.

Are there any increases in short-term and/or long-term allowable emission rates?	Yes
Can all the emission rate increases be attributed to speciation of currently authorized PM emissions and/or revisions of AP-42 or TCEQ guidance?	No
Are there any new or modified control devices or emission sources?	Yes
Are there any changes to emission point discharge parameters? Consider all parameters on the Stack Parameters sheet, including location.	No
Will any PBR registrations, standard permit, or standard exemptions be incorporated by consolidation?	No
Does this project require an impacts analysis?	Yes
Will off property impacts for any of the pollutants require Tier III Toxicology Effects Evaluation as defined in Appendix D of MERA?	No

B. Disaster Review

If the proposed facility will handle sufficient quantities of certain chemicals which, if released accidentally, would cause off-property impacts that could be immediately dangerous to life and health, a disaster review analysis may be required as part of the application. Contact the appropriate NSR permitting section for assistance at (512) 239-1250. Additional Guidance can be found at the link below:

https://www.tceq.texas.gov/assets/public/permitting/air/Guidance/NewSourceReview/disrev-factsheet.pdf

Does this application involve any air contaminants for which a disaster review is required?	No

C. Air Pollutant Watch List

Certain areas of the state have concentrations of specific pollutants that are of concern. The TCEQ has designated these portions of the state as watch list areas. Location of a facility in a watch list area could result in additional restrictions on emissions of the affected air pollutant(s) or additional permit requirements. The location of the areas and pollutants of interest can be found at the link below:

https://www.tceq.texas.gov/toxicology/apwl/apwl.html

Is the proposed facility located in a watch list area?	No

D. Mass Emissions Cap and Trade	
Is this facility located at a site within the Houston/Galveston nonattainment area (Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, and Waller Counties)?	No

X. Additional Requirements	
A. Bulk Fuel Terminals	
Is this project for a bulk fuel terminal?	No
B. Plant Fuel Gas Facilities	
Does this site utilize plant fuel gas?	Yes

Texas Commission on Environmental Quality
Form PI-1 General Application
Unit Types - Emission Rates

Date: 12/17/2021
Permit #: 38754
Company: Valero Refining - Texas, L.P.

Action Requested (only 1 action per FIN)	Include these emissions in annual (tpy) summary?	Facility ID Number (FIN)	Emission Point Number (EPN)	Source Name	Pollutant	Current Short-Term (lb/hr)	Current Long-Term (tpy)	Consolidated Current Short-Term (lb/hr)	Consolidated Current Long-Term (tpy)	Proposed Short-Term (lb/hr)	Proposed Long-Term (tpy)	Short-Term Difference (lb/hr)	Long-Term Difference (tpy)	Unit Type (Used for reviewing BACT and Monitoring Requirements)
New/Modified	Yes	Various	MSS Caps	MSS Caps	CO	2948.62	53.9			2948.62	94.64	0	40.74	MSS Activities
					H2S	6.59	0.22			6.59	0.22	0	0	
					NH3	4.41	0.17			4.41	0.17	0	0	
					NOx	532.06	11.05			532.06	18.03	0	6.98	
					PM	80.53	1.41			80.53	2.96	0	1.55	
					PM10	80.53	1.31			80.53	2.86	0	1.55	
					PM2.5	80.53	1.29			80.53	2.84	0	1.55	
					SO2	1019	37.33			1019	38.99	0	1.66	
					VOC	729.3	44.83			729.3	45.22	0	0.3901	
					Exempt Solvents	1.76	0.6			1.76	0.6	0	0	
Not New/Modified	Yes	01-H-01	1	Heater - Crude Heater (01-H-01)	CO	8.1	20.13			8.1	20.13	0	0	Heater
					NH3	0.05	0.17			0.05	0.17	0	0	
					NOx	9.72	19.24			9.72	19.24	0	0	
					PM	1.21	4			1.21	4	0	0	
					PM10	1.21	4			1.21	4	0	0	
					PM2.5	1.21	4			1.21	4	0	0	
					SO2	2.5	5.71			2.5	5.71	0	0	
					VOC	0.87	2.9			0.87	2.9	0	0	
Not New/Modified	Yes	01-H-02	131	Heater - Crude Preflash (01-H-02)	CO	0.62	2.71			0.62	2.71	0	0	Heater
					NH3	<0.01	0.02			<0.01	0.02	0	0	
					NOx	1.77	6.29			1.77	6.29	0	0	
					PM	0.13	0.49			0.13	0.49	0	0	
					PM10	0.13	0.49			0.13	0.49	0	0	
					PM2.5	0.13	0.49			0.13	0.49	0	0	
					SO2	0.27	0.64			0.27	0.64	0	0	
					VOC	0.1	0.35			0.1	0.35	0	0	
Not New/Modified	Yes	01-H-03	132	Heater - Crude Stabilizer (01-H-03)	CO	0.17	0.72			0.17	0.72	0	0	Heater
					NH3	<0.01	<0.01			<0.01	<0.01	0	0	
					NOx	0.48	2.06			0.48	2.06	0	0	
					PM	0.04	0.15			0.04	0.15	0	0	
					PM10	0.04	0.15			0.04	0.15	0	0	
					PM2.5	0.04	0.15			0.04	0.15	0	0	
					SO2	0.07	0.22			0.07	0.22	0	0	
					VOC	0.03	0.11			0.03	0.11	0	0	
Not New/Modified	Yes	02-H-01	74	Vacuum Heater	CO	4.99	16.77			4.99	16.77	0	0	Heater
					NH3	0.03	0.14			0.03	0.14	0	0	
					NOx	5.98	26.21			5.98	26.21	0	0	
					PM	0.74	3.26			0.74	3.26	0	0	
					PM10	0.74	3.26			0.74	3.26	0	0	
					PM2.5	0.74	3.26			0.74	3.26	0	0	
					SO2	1.37	4.13			1.37	4.13	0	0	
					VOC	0.54	2.36			0.54	2.36	0	0	
Not New/Modified	Yes	11-H-01	114	Heater - Desalter Heater (11-H-01) -	CO	3.54	15.52			3.54	15.52	0	0	Heater
					NH3	0.03	0.14			0.03	0.14	0	0	
					NOx	3.96	17.34			3.96	17.34	0	0	
					PM	0.74	3.23			0.74	3.23	0	0	
					PM10	0.74	3.23			0.74	3.23	0	0	
					PM2.5	0.74	3.23			0.74	3.23	0	0	
					SO2	1.52	4.6			1.52	4.6	0	0	
					VOC	0.53	2.34			0.53	2.34	0	0	
					H2S	0.02	0.05			0.02	0.05	0	0	
Not New/Modified	Yes	12-H-1A/B	115	HDS Heaters	CO	8.08	32.91			8.08	32.91	0	0	Heater
					NH3	0.05	0.22			0.05	0.22	0	0	
					NOx	9.7	42.07			9.7	42.07	0	0	
					PM	1.2	5.22			1.2	5.22	0	0	
					PM10	1.2	5.22			1.2	5.22	0	0	
					PM2.5	1.2	5.22			1.2	5.22	0	0	
					SO2	2.49	7.45			2.49	7.45	0	0	
					VOC	0.87	3.78			0.87	3.78	0	0	
Not New/Modified	Yes	12-H02	116	Heater - HDS Pre-Heater (12-H-02)	CO	0.31	1.1			0.31	1.1	0	0	Heater
					NH3	<0.01	0.02			<0.01	0.02	0	0	
					NOx	2.36	8.28			2.36	8.28	0	0	
					PM	0.15	0.51			0.15	0.51	0	0	
					PM10	0.15	0.51			0.15	0.51	0	0	

VAL_000334

Action Requested (only 1 action per FIN)	Include these emissions in annual (tpy) summary?	Facility ID Number (FIN)	Emission Point Number (EPN)	Source Name	Pollutant	Current Short-Term (lb/hr)	Current Long-Term (tpy)	Consolidated Current Short-Term (lb/hr)	Consolidated Current Long-Term (tpy)	Proposed Short-Term (lb/hr)	Proposed Long-Term (tpy)	Short-Term Difference (lb/hr)	Long-Term Difference (tpy)	Unit Type (Used for reviewing BACT and Monitoring Requirements)
					PM2.5	0.15	0.51			0.15	0.51	0	0	
					SO2	0.3	0.73			0.3	0.73	0	0	
					VOC	0.11	0.37			0.11	0.37	0	0	
Not New/Modified	Yes	13-H-01B	118	Hydrogen Reformer Heater	CO	58.51	220.73			58.51	220.73	0	0	Heater
					NH3	0.37	1.52			0.37	1.52	0	0	
					NOx	70.21	284.4			70.21	284.4	0	0	
					PM	8.72	35.8			8.72	35.8	0	0	
					PM10	8.72	35.8			8.72	35.8	0	0	
					PM2.5	8.72	35.8			8.72	35.8	0	0	
					SO2	44.53	122.64			44.53	122.64	0	0	
					VOC	9.95	25.91			9.95	25.91	0	0	
Not New/Modified	Yes	30-B-02	153	Heater - HR Boiler (30-B-02)	CO	8.46	28.94			8.46	28.94	0	0	Heater
					NH3	0.09	0.33			0.09	0.33	0	0	
					NOx	22.56	82.34			22.56	82.34	0	0	
					PM	2.1	5.51			2.1	5.51	0	0	
					PM10	2.1	5.51			2.1	5.51	0	0	
					PM2.5	2.1	5.51			2.1	5.51	0	0	
					SO2	4.34	10.66			4.34	10.66	0	0	
					VOC	1.52	3.99			1.52	3.99	0	0	
Not New/Modified	Yes	30-B-04	30-B-04	Boiler 30-B-04	CO	19.84	48.14			19.84	48.14	0	0	Boiler: Liquid and Gas Fuel, > 40 MMBtu/hr
					NH3	2.41	5.86			2.41	5.86	0	0	
					NOx	8.25	20.02			8.25	20.02	0	0	
					PM	4.1	9.95			4.1	9.95	0	0	
					PM10	4.1	9.95			4.1	9.95	0	0	
					PM2.5	4.1	9.95			4.1	9.95	0	0	
					SO2	8.65	14.47			8.65	14.47	0	0	
					VOC	2.97	7.2			2.97	7.2	0	0	
Not New/Modified	Yes	30-B-04	30-B-04MSS	Boiler 30-B-04	CO	198.55	3.57			198.55	3.57	0	0	Boiler: Liquid and Gas Fuel, > 40 MMBtu/hr
					NOx	55	0.99			55	0.99	0	0	
Not New/Modified	Yes	31-H-01	117	Heater - Alky Frac. Reb. (31-H-01)	CO	2.51	8.83			2.51	8.83	0	0	Heater
					NH3	0.05	0.17			0.05	0.17	0	0	
					NOx	5.64	19.86			5.64	19.86	0	0	
					PM	1.17	4.11			1.17	4.11	0	0	
					PM10	1.17	4.11			1.17	4.11	0	0	
					PM2.5	1.17	4.11			1.17	4.11	0	0	
					SO2	2.41	5.86			2.41	5.86	0	0	
					VOC	0.85	2.97			0.85	2.97	0	0	
Not New/Modified	Yes	36-H-01	120	Heater - Butamer Heater (36-H-01)	CO	0.27	0.98			0.27	0.98	0	0	Heater
					NH3	<0.01	0.02			<0.01	0.02	0	0	
					NOx	2	4.3			2	4.3	0	0	
					PM	0.12	0.26			0.12	0.26	0	0	
					PM10	0.12	0.26			0.12	0.26	0	0	
					PM2.5	0.12	0.26			0.12	0.26	0	0	
					SO2	0.26	0.41			0.26	0.41	0	0	
					VOC	0.09	0.19			0.09	0.19	0	0	
Not New/Modified	Yes	38-H-01	162	Oleflex Heater	CO	19.45	69.49			19.45	69.49	0	0	Heater
					NH3	0.12	0.49			0.12	0.49	0	0	
					NOx	23.34	65.75			23.34	65.75	0	0	
					PM	2.9	11.62			2.9	11.62	0	0	
					PM10	2.9	11.62			2.9	11.62	0	0	
					PM2.5	2.9	11.62			2.9	11.62	0	0	
					SO2	5.99	16.57			5.99	16.57	0	0	
					VOC	2.1	8.41			2.1	8.41	0	0	
Not New/Modified	Yes	46-H-01	119	Heater - Sulften Heater (46-H-01)	CO	0.35	1.49			0.35	1.49	0	0	Heater
					NH3	0.01	0.03			0.01	0.03	0	0	
					NOx	2.62	5.21			2.62	5.21	0	0	
					PM	0.16	0.32			0.16	0.32	0	0	
					PM10	0.16	0.32			0.16	0.32	0	0	
					PM2.5	0.16	0.32			0.16	0.32	0	0	
					SO2	0.34	0.63			0.34	0.63	0	0	
					VOC	0.12	0.24			0.12	0.24	0	0	
Not New/Modified	Yes	47-H-04	150	HCU Heater	CO	6.1	24.38			6.1	24.38	0	0	Heater
					NH3	0.06	0.26			0.06	0.26	0	0	
					NOx	12.19	48.76			12.19	48.76	0	0	
					PM	1.51	6.06			1.51	6.06	0	0	

Texas Commission on Environmental Quality
Form PI-1 General Application
Unit Types - Emission Rates

Action Requested (only 1 action per FIN)	Include these emissions in annual (tpy) summary?	Facility ID Number (FIN)	Emission Point Number (EPN)	Source Name	Pollutant	Current Short-Term (lb/hr)	Current Long-Term (tpy)	Consolidated Current Short-Term (lb/hr)	Consolidated Current Long-Term (tpy)	Proposed Short-Term (lb/hr)	Proposed Long-Term (tpy)	Short-Term Difference (lb/hr)	Long-Term Difference (tpy)	Unit Type (Used for reviewing BACT and Monitoring Requirements)
					PM10	1.51	6.06			1.51	6.06	0	0	
					PM2.5	1.51	6.06			1.51	6.06	0	0	
					SO2	3.13	8.63			3.13	8.63	0	0	
					VOC	1.1	4.38			1.1	4.38	0	0	
Not New/Modified	Yes	48-H-01	151	Heater - NHU Heater (48-H-01)	CO	1.06	3.82			1.06	3.82	0	0	Heater
					NH3	0.01	0.04			0.01	0.04	0	0	
					NOx	3.52	12.72			3.52	12.72	0	0	
					PM	0.26	0.95			0.26	0.95	0	0	
					PM10	0.26	0.95			0.26	0.95	0	0	
					PM2.5	0.26	0.95			0.26	0.95	0	0	
					SO2	0.54	1.35			0.54	1.35	0	0	
					VOC	0.19	0.69			0.19	0.69	0	0	
Not New/Modified	Yes	49-H-03	152	CRU Heater	CO	16.85	57.02			16.85	57.02	0	0	Heater
					NH3	0.18	0.6			0.18	0.6	0	0	
					NOx	39.31	133.06			39.31	133.06	0	0	
					PM	4.18	14.16			4.18	14.16	0	0	
					PM10	4.18	14.16			4.18	14.16	0	0	
					PM2.5	4.18	14.16			4.18	14.16	0	0	
					SO2	9.8	22.69			9.8	22.69	0	0	
					VOC	3.03	10.25			3.03	10.25	0	0	
Not New/Modified	Yes	49-H-71	172	Heater - RSU Heater (49-H-71)	CO	3.3	12.72			3.3	12.72	0	0	Heater
					NH3	0.02	0.08			0.02	0.08	0	0	
					NOx	3.96	15.26			3.96	15.26	0	0	
					PM	0.49	1.9			0.49	1.9	0	0	
					PM10	0.49	1.9			0.49	1.9	0	0	
					PM2.5	0.49	1.9			0.49	1.9	0	0	
					SO2	1.02	2.7			1.02	2.7	0	0	
					VOC	0.36	1.37			0.36	1.37	0	0	
Not New/Modified	Yes	49-H-90	49-H-90	Heater - C7 Splitter Reb. (49-H-90)	CO	5.32	16.82			5.32	16.82	0	0	Heater
					NH3	0.03	0.13			0.03	0.13	0	0	
					NOx	4.25	15.46			4.25	15.46	0	0	
					PM	0.79	3.01			0.79	3.01	0	0	
					PM10	0.79	3.01			0.79	3.01	0	0	
					PM2.5	0.79	3.01			0.79	3.01	0	0	
					SO2	1.64	4.29			1.64	4.29	0	0	
					VOC	0.57	2.18			0.57	2.18	0	0	
Not New/Modified	Yes	52-H-01	195	Heater - GDU Charge Heater (52-H-01)	CO	13.65	34.29			13.65	34.29	0	0	Heater
					NH3	0.05	0.2			0.05	0.2	0	0	
					NOx	5.8	14.69			5.8	14.69	0	0	
					PM	1.23	4.61			1.23	4.61	0	0	
					PM10	1.23	4.61			1.23	4.61	0	0	
					PM2.5	1.23	4.61			1.23	4.61	0	0	
					SO2	2.55	6.57			2.55	6.57	0	0	
					VOC	0.89	3.34			0.89	3.34	0	0	
Not New/Modified	Yes	CRUDE UNIT	1F	Crude Unit	VOC							0	0	Fugitives: Piping and Equipment Leak
Not New/Modified	Yes	VACUUMUNIT	2F	Vacuum Unit	H2S	0.02	0.08			0.02	0.08	0	0	Fugitives: Piping and Equipment Leak
					VOC							0	0	
Not New/Modified	Yes	LEU-F	4F	LEU Unit	VOC							0	0	Fugitives: Piping and Equipment Leak
Not New/Modified	Yes	11F-HDS	11F	Desalter Unit	VOC							0	0	Fugitives: Piping and Equipment Leak
Not New/Modified	Yes	HDS-FUG	12F	HDS Unit	H2S	0.14	0.62			0.14	0.62	0	0	Fugitives: Piping and Equipment Leak
					VOC							0	0	
Not New/Modified	Yes	SMR-FUG	13F	H2 Reformer	VOC							0	0	Fugitives: Piping and Equipment Leak
Not New/Modified	Yes	HRLEU-FUG	18F	LEU -2	VOC							0	0	Fugitives: Piping and Equipment Leak
Not New/Modified	Yes	LRU	20F	LRU	VOC							0	0	Fugitives: Piping and Equipment Leak
New/Modified	Yes	HOC-FUG	21/22F	HOC	H2S	0.03	0.12			0.03	0.14	0	*0.02*	Fugitives: Piping and Equipment Leak
					VOC							0	0	
Not New/Modified	Yes	30B03F	30F	Boiler House	VOC							0	0	Fugitives: Piping and Equipment Leak
Not New/Modified	Yes	07-F	07F	#07 BUP Flare	VOC							0	0	Control: Flare
Not New/Modified	Yes	ALKY-FUG	31F	Alky Unit	H2S	0.1	0.43			0.1	0.43	0	0	Fugitives: Piping and Equipment Leak
					HF	0.52	2.29			0.52	2.29	0	0	
					VOC							0	0	
Not New/Modified	Yes	BUTAMER	36F	Butamer Unit	VOC							0	0	Fugitives: Piping and Equipment Leak
Not New/Modified	Yes	MTBE-FUG	37F	Iso-Octene	VOC							0	0	Fugitives: Piping and Equipment Leak
Not New/Modified	Yes	OLEFLEX-FU	38F	Oleflex Unit	VOC							0	0	Fugitives: Piping and Equipment Leak
Not New/Modified	Yes	SRU-F	46-24F	SULF-10 Fugitives	H2S	0.1	0.43			0.1	0.43	0	0	Fugitives: Piping and Equipment Leak
					VOC							0	0	

Date: 12/17/2021
Permit #: 38754
Company: Valero Refining - Texas, L.P.

Action Requested (only 1 action per FIN)	Include these emissions in annual (tpy) summary?	Facility ID Number (FIN)	Emission Point Number (EPN)	Source Name	Pollutant	Current Short-Term (lb/hr)	Current Long-Term (tpy)	Consolidated Current Short-Term (lb/hr)	Consolidated Current Long-Term (tpy)	Proposed Short-Term (lb/hr)	Proposed Long-Term (tpy)	Short-Term Difference (lb/hr)	Long-Term Difference (tpy)	Unit Type (Used for reviewing BACT and Monitoring Requirements)
Not New/Modified	Yes	SRU-FUG	41F	SRU Unit Fugitives	H2S	0.02	0.09			0.02	0.09	0	0	Fugitives: Piping and Equipment Leak
					VOC							0	0	
Not New/Modified	Yes	HCU-FUG	47F	HCU Unit	H2S	0.15	0.67			0.15	0.67	0	0	Fugitives: Piping and Equipment Leak
					VOC							0	0	
Not New/Modified	Yes	47PSA	47PSA	PSA Unit	VOC							0	0	Fugitives: Piping and Equipment Leak
Not New/Modified	Yes	NHT-FUG	48F	NHT Unit	H2S	0.01	0.06			0.01	0.06	0	0	Fugitives: Piping and Equipment Leak
					VOC							0	0	
Not New/Modified	Yes	CRU-FUG	49F	CRU Unit	VOC							0	0	Fugitives: Piping and Equipment Leak
Not New/Modified	Yes	49-XFU	175	XFU/RFU/C7Split Unit	VOC							0	0	Fugitives: Piping and Equipment Leak
Not New/Modified	Yes	GDU-FUG	52F	GDU Unit	VOC							0	0	Fugitives: Piping and Equipment Leak
Not New/Modified	Yes	DOCKS-F	DOCKS	DK-Docks	VOC							0	0	Fugitives: Piping and Equipment Leak
Not New/Modified	Yes	08-F	08F	#08FLR/Day Tanks	VOC							0	0	Fugitives: Piping and Equipment Leak
Not New/Modified	Yes	LPG STORAGE	LPG STGF	LPG STORAGE	VOC							0	0	Fugitives: Piping and Equipment Leak
Not New/Modified	Yes	MVRUF	MVRUF	MVRU	VOC							0	0	Fugitives: Piping and Equipment Leak
Not New/Modified	Yes	#TM-Terminal	TERM-F	#TM-Terminal	VOC							0	0	Fugitives: Piping and Equipment Leak
Not New/Modified	Yes	PIPING-FUG	TRKRACKFUG	TRUCK RACK	VOC							0	0	Fugitives: Piping and Equipment Leak
Not New/Modified	Yes	WWTP-FUG	83F	Wastewater Treatment Plant	VOC							0	0	Fugitives: Piping and Equipment Leak
Not New/Modified	Yes	SHU-FUG	54F	Selective Hydrogenation Unit	VOC							0	0	Fugitives: Piping and Equipment Leak
New/Modified	Yes	SWS-FUG	42F	Sour Water Stripper	H2S	<0.01	0.02			<0.01	0.02	0	0	Fugitives: Piping and Equipment Leak
					VOC							0	0	
Not New/Modified	Yes	38-SCRUB	168	Oleflex CCR	Cl2	<0.01	0.04			<0.01	0.04	0	0	Control: Absorber
					H2SO4	<0.01	0.01			<0.01	0.01	0	0	
					HCl	0.06	0.28			0.06	0.28	0	0	
					SO2	0.04	0.19			0.04	0.19	0	0	
Not New/Modified	Yes	73-TK-9	69	Tank - 9	VOC	3.1	0.49			3.1	0.49	0	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia
Not New/Modified	Yes	HOC-CT	122	Cooling Tower - HOC	PM	17.71	65.86			3.54	13.17	-14.17	-52.69	Cooling Tower
					PM10	16.82	62.58			3.36	12.52	-13.46	-50.06	
					PM2.5	2.63	9.78			0.53	1.96	-2.1	-7.82	
					VOC	5.67	21.09			5.67	21.09	0	0	
Not New/Modified	Yes	Alky-CT	123	Cooling Tower - Alky	PM	0.71	2			0.71	2	0	0	Cooling Tower
					PM10	0.7	1.98			0.7	1.98	0	0	
					PM2.5	0.19	0.55			0.19	0.55	0	0	
					VOC	1.26	3.55			1.26	3.55	0	0	
Not New/Modified	Yes	BUP-CT	167-CT	Cooling Tower - BUP	PM	4.52	19.26			4.52	19.26	0	0	Cooling Tower
					PM10	4.3	18.33			4.3	18.33	0	0	
					PM2.5	0.67	2.88			0.67	2.88	0	0	
					VOC	1.47	6.27			1.47	6.27	0	0	
Not New/Modified	Yes	Crude-CT	1CT	Cooling Tower - Crude	PM	0.34	1.13			0.34	1.13	0	0	Cooling Tower
					PM10	0.34	1.11			0.34	1.11	0	0	
					PM2.5	0.06	0.21			0.06	0.21	0	0	
					VOC	0.17	0.55			0.17	0.55	0	0	
Not New/Modified	Yes	ENG-16P04	16-P-04	Engine - 16-P-04	CO	2.2	0.06			2.2	0.06	0	0	Engine: Emergency, Diesel
					NOx	8	0.21			8	0.21	0	0	
					PM	0.73	0.02			0.73	0.02	0	0	
					PM10	0.73	0.02			0.73	0.02	0	0	
					PM2.5	0.73	0.02			0.73	0.02	0	0	
					SO2	0.68	0.02			0.68	0.02	0	0	
					VOC	0.83	0.02			0.83	0.02	0	0	
Not New/Modified	Yes	ENG-16P07	16-P-07	Engine - 16-P-07	CO	2.67	0.04			2.67	0.04	0	0	Engine: Emergency, Diesel
					NOx	9.69	0.15			9.69	0.15	0	0	
					PM	0.88	0.01			0.88	0.01	0	0	
					PM10	0.88	0.01			0.88	0.01	0	0	
					PM2.5	0.88	0.01			0.88	0.01	0	0	
					SO2	0.82	0.01			0.82	0.01	0	0	
					VOC	1.01	0.02			1.01	0.02	0	0	
Not New/Modified	Yes	16-P-11	16-P-11	Engine - 16-P-11	CO	0.8	0.02			0.8	0.02	0	0	Engine: Emergency, Diesel
					NOx	3.32	0.09			3.32	0.09	0	0	
					PM	0.11	<0.01			0.11	<0.01	0	0	
					PM10	0.11	<0.01			0.11	<0.01	0	0	
					PM2.5	0.11	<0.01			0.11	<0.01	0	0	
					SO2	0.1	<0.01			0.1	<0.01	0	0	
					VOC	0.12	<0.01			0.12	<0.01	0	0	
Not New/Modified	Yes	16-P-12	16-P-12	Engine - 16-P-12	CO	0.8	0.02			0.8	0.02	0	0	Engine: Emergency, Diesel
					NOx	3.32	0.09			3.32	0.09	0	0	
					PM	0.11	<0.01			0.11	<0.01	0	0	

Texas Commission on Environmental Quality
Form PI-1 General Application
Unit Types - Emission Rates

Action Requested (only 1 action per FIN)	Include these emissions in annual (tpy) summary?	Facility ID Number (FIN)	Emission Point Number (EPN)	Source Name	Pollutant	Current Short-Term (lb/hr)	Current Long-Term (tpy)	Consolidated Current Short-Term (lb/hr)	Consolidated Current Long-Term (tpy)	Proposed Short-Term (lb/hr)	Proposed Long-Term (tpy)	Short-Term Difference (lb/hr)	Long-Term Difference (tpy)	Unit Type (Used for reviewing BACT and Monitoring Requirements)
					PM10	0.11	<0.01			0.11	<0.01	0	0	
					PM2.5	0.11	<0.01			0.11	<0.01	0	0	
					SO2	0.1	<0.01			0.1	<0.01	0	0	
					VOC	0.12	<0.01			0.12	<0.01	0	0	
Not New/Modified	Yes	16-P-13	16-P-13	Engine - 16-P-13	CO	0.8	0.02			0.8	0.02	0	0	Engine: Emergency, Diesel
					NOx	3.32	0.09			3.32	0.09	0	0	
					PM	0.11	<0.01			0.11	<0.01	0	0	
					PM10	0.11	<0.01			0.11	<0.01	0	0	
					PM2.5	0.11	<0.01			0.11	<0.01	0	0	
					SO2	0.1	<0.01			0.1	<0.01	0	0	
					VOC	0.12	<0.01			0.12	<0.01	0	0	
Not New/Modified	Yes	16-P-14	16-P-14	Engine - 16-P-14	CO	0.8	0.02			0.8	0.02	0	0	Engine: Emergency, Diesel
					NOx	3.32	0.09			3.32	0.09	0	0	
					PM	0.11	<0.01			0.11	<0.01	0	0	
					PM10	0.11	<0.01			0.11	<0.01	0	0	
					PM2.5	0.11	<0.01			0.11	<0.01	0	0	
					SO2	0.1	<0.01			0.1	<0.01	0	0	
					VOC	0.12	<0.01			0.12	<0.01	0	0	
Not New/Modified	No	MFL-1	126	Main Flare	CO	See FLARECAP	See FLARECAP			See FLARECAP	See FLARECAP	#VALUE!	#VALUE!	Control: Flare
					H2S	See FLARECAP	See FLARECAP			See FLARECAP	See FLARECAP	#VALUE!	#VALUE!	
					NOx	See FLARECAP	See FLARECAP			See FLARECAP	See FLARECAP	#VALUE!	#VALUE!	
					SO2	See FLARECAP	See FLARECAP			See FLARECAP	See FLARECAP	#VALUE!	#VALUE!	
					VOC	See FLARECAP	See FLARECAP			See FLARECAP	See FLARECAP	#VALUE!	#VALUE!	
Not New/Modified	No	GF-1	158	Ground Flare	CO	See FLARECAP	See FLARECAP			See FLARECAP	See FLARECAP	#VALUE!	#VALUE!	Control: Flare
					H2S	See FLARECAP	See FLARECAP			See FLARECAP	See FLARECAP	#VALUE!	#VALUE!	
					NOx	See FLARECAP	See FLARECAP			See FLARECAP	See FLARECAP	#VALUE!	#VALUE!	
					SO2	See FLARECAP	See FLARECAP			See FLARECAP	See FLARECAP	#VALUE!	#VALUE!	
					VOC	See FLARECAP	See FLARECAP			See FLARECAP	See FLARECAP	#VALUE!	#VALUE!	
Not New/Modified	No	MTBE FL-2	127	BUP Flare	CO	See FLARECAP	See FLARECAP			See FLARECAP	See FLARECAP	#VALUE!	#VALUE!	Control: Flare
					H2S	See FLARECAP	See FLARECAP			See FLARECAP	See FLARECAP	#VALUE!	#VALUE!	
					NOx	See FLARECAP	See FLARECAP			See FLARECAP	See FLARECAP	#VALUE!	#VALUE!	
					SO2	See FLARECAP	See FLARECAP			See FLARECAP	See FLARECAP	#VALUE!	#VALUE!	
					VOC	See FLARECAP	See FLARECAP			See FLARECAP	See FLARECAP	#VALUE!	#VALUE!	
Not New/Modified	No	135	135	Acid Gas Flare (pilot only)	CO	See FLARECAP	See FLARECAP			See FLARECAP	See FLARECAP	#VALUE!	#VALUE!	Control: Flare
					H2S	See FLARECAP	See FLARECAP			See FLARECAP	See FLARECAP	#VALUE!	#VALUE!	
					NOx	See FLARECAP	See FLARECAP			See FLARECAP	See FLARECAP	#VALUE!	#VALUE!	
					SO2	See FLARECAP	See FLARECAP			See FLARECAP	See FLARECAP	#VALUE!	#VALUE!	
					VOC	See FLARECAP	See FLARECAP			See FLARECAP	See FLARECAP	#VALUE!	#VALUE!	
Not New/Modified	Yes	Various	FLARECAP	Flares Subcap	CO	113.27	121.03			113.27	121.03	0	0	Other
Not New/Modified	Yes	Various	FLARECAP		H2S	0.04	0.11			0.04	0.11	0	0	
Not New/Modified	Yes	Various	FLARECAP		NOx	23.04	20.77			23.04	20.77	0	0	
Not New/Modified	Yes	Various	FLARECAP		SO2	3.55	10.43			3.55	10.43	0	0	
Not New/Modified	Yes	Various	FLARECAP		VOC	291.17	63.51			291.17	63.51	0	0	
Not New/Modified	Yes	BARGEDOCKS	31	Loading - Heavy Oil	VOC	14.96	4.72			14.96	4.72	0	0	Loading: Marine Vessel
Not New/Modified	Yes	SHIP FUG	SHIP FUG	Loading - Ships Fugitives	VOC	237.46	91.74			237.46	91.74	0	0	Loading: Marine Vessel
Not New/Modified	Yes	VRU	VRU	Loading - MVRU	VOC	61.33	23.13			61.33	23.13	0	0	Control: Adsorption System: Regenerative
Not New/Modified	Yes	LOADINGFUG	TRUCKFUG	Loading - Truck Fugitives	VOC	11.86	15.87			11.86	15.87	0	0	Loading: Truck

Texas Commission on Environmental Quality
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Not New/Modified	Yes	T-RACK	TRUCKCOMB	Loading - Truck Combustor	CO	15.28	22.76			15.28	22.76	0	0	Control: Vapor Combustor
					NOx	7.64	11.38			7.64	11.38	0	0	
					SO2	0.02	0.03			0.02	0.03	0	0	
					VOC	8.18	13.61			8.18	13.61	0	0	
					PM	0.23	0.34			0.23	0.34	0	0	
					PM10	0.23	0.34			0.23	0.34	0	0	
					PM2.5	0.23	0.34			0.23	0.34	0	0	
Not New/Modified	Yes	AE-49601A/B	AE-49601A/B	AE-49601A/B Analyzer Vent	VOC	0.01	0.01			0.01	0.01	0	0	Other
Not New/Modified	Yes	AE-49900A/B	AE-49900A/B	AE-49900A/B Analyzer Vent	VOC	0.01	0.01			0.01	0.01	0	0	Other
Not New/Modified	Yes	AE-49901A/B	AE-49901A/B	AE-49901A/B Analyzer Vent	VOC	0.01	0.01			0.01	0.01	0	0	Other
New/Modified	Yes	24-ST-01	121	HOC Belco Scrubber	CO	889.96	1470.33			958.4	1559.15	68.44	88.8201	Fluid Catalytic Cracking Unit
					HCN	80.47	320.4			80.47	320.4	0	0	
					H2SO4	49	214.62			49	199.3	0	-15.32	
					NH3	0	0			4.84	17.88	4.84	17.88	
					NOx	356.2	473.81			384.12	473.81	27.92	0	
					PM	120.32	527			140	569.4	19.68	42.4	
					PM10	120.32	527			140	569.4	19.68	42.4	
					PM2.5	120.32	527			140	569.4	19.68	42.4	
					SO2	203.53	420.09			219.22	420.12	15.69	0.0301	
					VOC	28.02	115.53			30.18	122.74	2.16	7.21	
					CO2						2451673	0	2451673	
					CH4						72.08	0	72.08	
					N2O						14.42	0	14.42	
					CO2 Equivalent						2457772	0	2457772	
Not New/Modified	Yes	SCOT/SRU	121	SRU Incinerators Cap	CO	220.75	678.85			220.75	678.85	0	0	SRU: Refinery
					H2S	5.82	18.73			5.82	18.73	0	0	
					NOx	54.64	239.31			54.64	239.31	0	0	
					PM	24.72	98.38			24.72	98.38	0	0	
					PM10	24.72	98.38			24.72	98.38	0	0	
					PM2.5	24.72	98.38			24.72	98.38	0	0	
					SO2	191.32	837.99			191.32	837.99	0	0	
					VOC	0.96	3.46			0.96	3.46	0	0	
Not New/Modified	Yes	SCOT/SRU	121	Temporary SRU Stack	CO	10.04	7.23			10.04	7.23	0	0	SRU: Refinery
					H2S	0.047	0.03			0.047	0.03	0	0	
					NOx	1.233	0.72			1.233	0.72	0	0	
					PM	1.205	0.87			1.205	0.87	0	0	
					PM10	1.205	0.87			1.205	0.87	0	0	
					PM2.5	1.205	0.87			1.205	0.87	0	0	
					SO2	13.816	9.95			13.816	9.95	0	0	
New/Modified	Yes	Various	FUG-CAP	Fugitives Subcap	VOC	101.17	443.11			107.87	472.44	6.7	29.33	Fugitives: Piping and Equipment Leak
					H2S	0	0			0.01	0.06	0.01	0.06	
					NH3	0	0			0.01	0.06	0.01	0.06	
					CH4						3.59	0	3.59	
					CO2 Equivalent						90	0	90	
Not New/Modified	Yes	49-SCRUB	155	CRU CCR	HCl	0.07	0.29			0.07	0.29	0	0	Control: Absorber
Not New/Modified	Yes	13-H-01B	118	SMR Condenser Vent	VOC	3.64	15.94			3.64	15.94	0	0	Process Vent
Not New/Modified	Yes	MAGNACAT	21 BH	MAGNACAT Unit	PM	0.18	0.6			0.18	0.6	0	0	Control: Bag Filter/Baghouse
					PM10	0.18	0.6			0.18	0.6	0	0	
					PM2.5	0.18	0.6			0.18	0.6	0	0	
Not New/Modified	Yes	83-TK-25	187	Tank 25	H2S	0.02	0.04			0.02	0.04	0	0	Storage Tank (4): Floating roof with TVP <11.0 psia
					NH3	<0.01	<0.01			<0.01	<0.01	0	0	
					VOC	1.43	5.33			1.43	5.33	0	0	
Not New/Modified	Yes	ENG-83P136A	83-P-136A	Engine 83-P-136A-EN	CO	2.48	0.06			2.48	0.06	0	0	Engine: Emergency, Diesel
					NOx	7.43	0.19			7.43	0.19	0	0	
					PM	0.38	<0.01			0.38	<0.01	0	0	
					PM10	0.38	<0.01			0.38	<0.01	0	0	
					PM2.5	0.38	<0.01			0.38	<0.01	0	0	
					SO2	0.88	0.02			0.88	0.02	0	0	
					VOC	7.43	0.19			7.43	0.19	0	0	
Not New/Modified	Yes	ENG-83P136B	83-P-136B	Engine 83-P-136B-EN	CO	2.48	0.06			2.48	0.06	0	0	Engine: Emergency, Diesel

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					NOx	7.43	0.19			7.43	0.19	0	0	
					PM	0.38	<0.01			0.38	<0.01	0	0	
					PM10	0.38	<0.01			0.38	<0.01	0	0	
					PM2.5	0.38	<0.01			0.38	<0.01	0	0	
					SO2	0.88	0.02			0.88	0.02	0	0	
					VOC	7.43	0.19			7.43	0.19	0	0	
Not New/Modified	Yes	WWTP-OWS	WWTP-OWS	WW collection system	VOC	8.62	37.77			8.62	37.77	0	0	Wastewater Facilities
Not New/Modified	Yes	83-TK-26	186	Tank 26	VOC	0.12	0.45			0.12	0.45	0	0	Storage Tank (4): Floating roof with TVP <11.0 psia
Not New/Modified	Yes	83-TK-159	184	Tank 159	VOC	0.15	0.39			0.15	0.39	0	0	Storage Tank (4): Floating roof with TVP <11.0 psia
Not New/Modified	Yes	83-TK-160	185	Tank 160	VOC	0.15	0.39			0.15	0.39	0	0	Storage Tank (4): Floating roof with TVP <11.0 psia
Not New/Modified	Yes	83-V-97	83-V-97	Tank 97	VOC	0.18	0.4			0.18	0.4	0	0	Storage Tank (4): Floating roof with TVP <11.0 psia
Not New/Modified	Yes	83-V-58	83-V-58	Tank 58	VOC	0.11	0.44			0.11	0.44	0	0	Storage Tank (4): Floating roof with TVP <11.0 psia
Not New/Modified	Yes	83-V-59	83-V-59	Tank 59	VOC	0.11	0.44			0.11	0.44	0	0	Storage Tank (4): Floating roof with TVP <11.0 psia
Not New/Modified	Yes	83-TK-162	183a	Tank 162	VOC	0.39	1.77			0.39	1.77	0	0	Storage Tank (4): Floating roof with TVP <11.0 psia
Not New/Modified	Yes	83-TK-155	182	Tank 155	VOC	0.39	1.77			0.39	1.77	0	0	Storage Tank (4): Floating roof with TVP <11.0 psia
Not New/Modified	Yes	APISEP	124	API/DGF Combustor	CO	1.65	7.22			1.65	7.22	0	0	Control: Vapor Combustor
					NOx	0.45	1.76			0.45	1.76	0	0	
					SO2	0.03	0.13			0.03	0.13	0	0	
					VOC	2.94	12.88			2.94	12.88	0	0	
Not New/Modified	Yes	83-TK-23	62	Equalization Tank	VOC	0.81	3.51			0.81	3.51	0	0	Storage Tank (4): Floating roof with TVP <11.0 psia
Not New/Modified	Yes	83-TK27	83-TK27	Bio Oxidation Reactor Tank	VOC	0.51	2.22			0.51	2.22	0	0	Wastewater Facilities
Not New/Modified	Yes	WWTP-AERB	WWTP-AERB	Aeration Basin	VOC	0.25	1.09			0.25	1.09	0	0	Wastewater Facilities
Not New/Modified	Yes	WWTP-CLRF	WWTP-CLRF	Clarifier	VOC	<0.01	0.04			<0.01	0.04	0	0	Wastewater Facilities
Not New/Modified	Yes	WWTP-SLB	WWTP-SLB	Saline Basin	VOC	<0.01	<0.01			<0.01	<0.01	0	0	Wastewater Facilities
Not New/Modified	Yes	CAS01-01	01-01	Crude/Vacuum Unit Pump Alley	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable
Not New/Modified	Yes	CAS01-02	01-02	North Side of Vacuum Unit	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable
Not New/Modified	Yes	CAS01-03	01-03	North Side of Vacuum Unit	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable
Not New/Modified	Yes	CAS01-04	01-04	Northwest Side of Vacuum Unit - Main Sump	VOC	<0.01	0.03			<0.01	0.03	0	0	Control: Adsorption System: Disposable
Not New/Modified	Yes	CAS03-01	03-01	N of Tanks 156/161	VOC	0.02	0.08			0.02	0.08	0	0	Control: Adsorption System: Disposable
Not New/Modified	Yes	CAS98-02	98-02	WP MSAT Rail Rack	VOC	0.02	0.08			0.02	0.08	0	0	Control: Adsorption System: Disposable
Not New/Modified	Yes	CAS11-01	11-01	Desalter Pump Alley	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable
Not New/Modified	Yes	CAS41-01	41-01	North of 43-TK-08 (Amine Tank)	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable
Not New/Modified	Yes	CAS41-02	41-02	W of 41-V-05 (Acid Gas K.O. Drum)	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable
Not New/Modified	Yes	CAS49-01	49-01	Northwest of XFU	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable
Not New/Modified	Yes	CAS49-02	49-02	North Side of NHT (Unit 48)	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable
Not New/Modified	Yes	CAS49-03	49-03	NHT (Unit 48) Pump Alley	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable
Not New/Modified	Yes	CAS50-01	50-01	East of Tank 62	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable
Not New/Modified	Yes	CAS52-01	52-01	NW of GDU MCC Room	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable
Not New/Modified	Yes	CAS70-01	70-01	East of Tank 55	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable
Not New/Modified	Yes	CAS70-02	70-02	Northwest of Tank 106	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable
Not New/Modified	Yes	CAS70-03	70-03	West of Tank 94 (S&D Main Sump)	VOC	<0.01	0.03			<0.01	0.03	0	0	Control: Adsorption System: Disposable
Not New/Modified	Yes	CAS72-01	72-01	East of Tank 111	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable
Not New/Modified	Yes	CAS73-01	73-01	North of Tank 152 (Terminal 2A)	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable
Not New/Modified	Yes	CAS73-02	73-02	Between TK 8 & TK 164 (Terminal 2)	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable

Texas Commission on Environmental Quality
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Date: 12/17/2021
Permit #: 38754
Company: Valero Refining - Texas, L.P.

Action Requested (only 1 action per FIN)	Include these emissions in annual (tpy) summary?	Facility ID Number (FIN)	Emission Point Number (EPN)	Source Name	Pollutant	Current Short-Term (lb/hr)	Current Long-Term (tpy)	Consolidated Current Short-Term (lb/hr)	Consolidated Current Long-Term (tpy)	Proposed Short-Term (lb/hr)	Proposed Long-Term (tpy)	Short-Term Difference (lb/hr)	Long-Term Difference (tpy)	Unit Type (Used for reviewing BACT and Monitoring Requirements)
Not New/Modified	Yes	CAS83-01	83-01	WWT (Hydroblast Pad)	VOC	0.02	0.07			0.02	0.07	0	0	Control: Adsorption System: Disposable
Not New/Modified	Yes	CAS83-02	83-02	WWT (Desalter Lift Station)	VOC	0.01	0.05			0.01	0.05	0	0	Control: Adsorption System: Disposable
Not New/Modified	Yes	CAS83-03	83-03	WWT (East of KOH Treater)	VOC	0.02	0.07			0.02	0.07	0	0	Control: Adsorption System: Disposable
Not New/Modified	Yes	CAS83-04	83-04	WWT (Northeast of Tank 159)	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable
Not New/Modified	Yes	CAS83-05	83-05	WWT (North Lift Station)	VOC	<0.01	0.03			<0.01	0.03	0	0	Control: Adsorption System: Disposable
Not New/Modified	Yes	CAS83-06	83-06	WWT (North of V-68)	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable
Not New/Modified	Yes	CAS83-07	83-07	WWT (South of V-55)	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable
Not New/Modified	Yes	CAS83-09	83-09	WWT (BSRP)	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable
Not New/Modified	Yes	83-10	83-10	WWT 83-V-99 (Diversion Box)	VOC	0.02	0.07			0.02	0.07	0	0	Control: Adsorption System: Disposable
Not New/Modified	Yes	83-12	83-12	WWT 83-V-28 (SE of Catalyst Pad)	VOC	0.02	0.07			0.02	0.07	0	0	Control: Adsorption System: Disposable
Not New/Modified	Yes	CAS98-01	V-201	WP MSAT Rail Rack	VOC	0.51	2.23			0.51	2.23	0	0	Control: Adsorption System: Disposable
Not New/Modified	Yes	APISEP	124a	WP WWT API Combustor Backup	VOC	0.02	0.08			0.02	0.08	0	0	Control: Adsorption System: Disposable
Not New/Modified	Yes	16-V-11	16-V-11	FWP 16-P-11 Diesel Tank	VOC	0.03	<0.01			0.03	<0.01	0	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia
Not New/Modified	Yes	16-V-12	16-V-12	FWP 16-P-12 Diesel Tank	VOC	0.03	<0.01			0.03	<0.01	0	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia
Not New/Modified	Yes	16-V-13	16-V-13	FWP 16-P-13 Diesel Tank	VOC	0.03	<0.01			0.03	<0.01	0	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia
Not New/Modified	Yes	16-V-14	16-V-14	FWP 16-P-14 Diesel Tank	VOC	0.03	<0.01			0.03	<0.01	0	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia
Not New/Modified	Yes	FWP-FUG	FWP-FUG	Firewater Pump Engine Fugitives	VOC	0.06	0.26			0.06	0.26	0	0	Fugitives: Piping and Equipment Leak
New/Modified	Yes	30-B-05	30-B-05	Boiler 30-B-05	CO	0	0			33.48	70.84	33.48	70.84	Boiler: Liquid and Gas Fuel, > 40 MMBtu/hr
					NH3	0	0			2.18	8.68	2.18	8.68	
					NOx	0	0			7.16	30.14	7.16	30.14	
					PM	0	0			3.56	14.16	3.56	14.16	
					PM10	0	0			3.56	14.16	3.56	14.16	
					PM2.5	0	0			3.56	14.16	3.56	14.16	
					SO2	0	0			7.7	21.15	7.7	21.15	
					VOC	0	0			2.57	10.25	2.57	10.25	
					CO2	0	0				222364	0	222364	
					CH4	0	0				4.19	0	4.19	
					N2O	0	0				0.42	0	0.42	
					CO2 Equivalent	0	0				222594	0	222594	
New/Modified	Yes	30-B-05	30-B-05	Boiler 30-B-05 (MSS)	CO	0	0			167.39	0	167.39	0	Boiler: Liquid and Gas Fuel, > 40 MMBtu/hr
					NOx	0	0			71.61	0	71.61	0	
New/Modified	Yes	HOC-PP-CT	HOC-PP-CT		PM	0	0			0.78	3.42	0.78	3.42	Cooling Tower
					PM10	0	0			0.18	0.81	0.18	0.81	
					PM2.5	0	0			<0.01	0.005	0.01	0.005	
					VOC	0	0			1.09	4.78	1.09	4.78	
New/Modified	Yes	CAS-HOCPP	CAS-HOCPP		VOC	0	0			<0.01	0.02	0.01	0.02	Control: Adsorption System: Disposable
New/Modified	Yes	MEROX	121/ 30-B-05		VOC	0	0			0.24	1.05	0.24	1.05	Process Vent
					SO2	0	0			3.86	16.91	3.86	16.91	
					H2S	0	0			<0.01	<0.01	0.01	0.01	
												0	0	
												0	0	
												0	0	
												0	0	
												0	0	
												0	0	
												0	0	
												0	0	
												0	0	
												0	0	
												0	0	
												0	0	
												0	0	
												0	0	
												0	0	

Texas Commission on Environmental Quality
Form PI-1 General Application
Unit Types - Emission Rates

Date: _12/17/2021_
Permit #: _38754_
Company: _Valero Refining - Texas, L.P._

Action Requested (only 1 action per FIN)	Include these emissions in annual (tpy) summary?	Facility ID Number (FIN)	Emission Point Number (EPN)	Source Name	Pollutant	Current Short-Term (lb/hr)	Current Long-Term (tpy)	Consolidated Current Short-Term (lb/hr)	Consolidated Current Long-Term (tpy)	Proposed Short-Term (lb/hr)	Proposed Long-Term (tpy)	Short-Term Difference (lb/hr)	Long-Term Difference (tpy)	Unit Type (Used for reviewing BACT and Monitoring Requirements)
												0	0	
												0	0	
												0	0	
												0	0	
												0	0	
												0	0	
												0	0	
												0	0	
												0	0	
												0	0	
												0	0	
												0	0	
												0	0	
												0	0	
												0	0	

Texas Commission on Environmental Quality
Form PI-1 General Application
Stack Parameters

Date: 12/17/2021
Permit #: 38754
Company: Valero Refining - Texas, L.P.

Emission Point Discharge Parameters												
EPN	Included in EMEW?	UTM Coordinates Zone	East (Meters)	North (Meters)	Building Height (ft)	Height Above Ground (ft)	Stack Exit Diameter (ft)	Velocity (FPS)	Temperature (°F)	Fugitives - Length (ft)	Fugitives - Width (ft)	Fugitives - Axis Degrees
MSS Caps	Yes											
1	Yes											
131	Yes											
132	Yes											
74	Yes											
114	Yes											
115	Yes											
116	Yes											
118	Yes											
153	Yes											
30-B-04	Yes											
30-B-04MSS	Yes											
117	Yes											
120	Yes											
162	Yes											
119	Yes											
150	Yes											
151	Yes											
152	Yes											
172	Yes											
49-H-90	Yes											
195	Yes											
1F	Yes											
2F	Yes											
4F	Yes											
11F	Yes											
12F	Yes											
13F	Yes											
18F	Yes											
20F	Yes											
21/22F	Yes											
30F	Yes											
07F	Yes											
31F	Yes											
36F	Yes											
37F	Yes											
38F	Yes											
46-24F	Yes											
41F	Yes											
47F	Yes											
47PSA	Yes											
48F	Yes											
49F	Yes											
175	Yes											

Texas Commission on Environmental Quality
Form PI-1 General Application
Stack Parameters

Date: 12/17/2021
Permit #: 38754
Company: Valero Refining - Texas, L.P.

EPN	Included in EMEW?	UTM Coordinates Zone	East (Meters)	North (Meters)	Building Height (ft)	Height Above Ground (ft)	Stack Exit Diameter (ft)	Velocity (FPS)	Temperature (°F)	Fugitives - Length (ft)	Fugitives - Width (ft)	Fugitives - Axis Degrees
52F	Yes											
DOCKS	Yes											
08F	Yes											
LPG STGF	Yes											
MVRUF	Yes											
TERM-F	Yes											
TRKRACKFUG	Yes											
83F	Yes											
54F	Yes											
42F	Yes											
168	Yes											
69	Yes											
122	Yes											
123	Yes											
167-CT	Yes											
1CT	Yes											
16-P-04	Yes											
16-P-07	Yes											
16-P-11	Yes											
16-P-12	Yes											
16-P-13	Yes											
16-P-14	Yes											
126	Yes											
158	Yes											
127	Yes											
135	Yes											
FLARECAP	Yes											
31	Yes											
SHIP FUG	Yes											
VRU	Yes											
TRUCKFUG	Yes											
TRUCKCOMB	Yes											
AE-49601A/B	Yes											
AE-49900A/B	Yes											
AE-49901A/B	Yes											
121	Yes											
FUG-CAP	Yes											
155	Yes											
21 BH	Yes											
187	Yes											
83-P-136A	Yes											
83-P-136B	Yes											
WWTP-OWS	Yes											
186	Yes											
184	Yes											

Texas Commission on Environmental Quality
Form PI-1 General Application
Stack Parameters

Date: _12/17/2021_
Permit #: _38754_
Company: _Valero Refining - Texas, L.P._

EPN	Included in EMEW?	UTM Coordinates Zone	East (Meters)	North (Meters)	Building Height (ft)	Height Above Ground (ft)	Stack Exit Diameter (ft)	Velocity (FPS)	Temperature (°F)	Fugitives - Length (ft)	Fugitives - Width (ft)	Fugitives - Axis Degrees
185	Yes											
83-V-97	Yes											
83-V-58	Yes											
83-V-59	Yes											
183a	Yes											
182	Yes											
124	Yes											
62	Yes											
83-TK27	Yes											
WWTP-AERB	Yes											
WWTP-CLRF	Yes											

Texas Commission on Environmental Quality
Form PI-1 General Application
Public Notice

Date: 12/17/2021
Permit #: 38754
Company: Valero Refining - Texas, L.P.

I. Public Notice Applicability

A. Application Type

Is this an application for a new or major modification of a PSD (including GHG), Nonattainment, or HAP permit?	Yes
Is this an application for a minor permit amendment?	Yes
Is there any change in character of emissions in this application (such as a new VOC or PM species)?	No
Is there a new air contaminant in this application (such as a newly emitted or newly quantified criteria pollutant)?	No

B. Project Increases and Public Notice Thresholds (for Initial and Amendment Projects)

For public notice applicability, the agency does not include consolidation or incorporation of any previously authorized facility or activity (PBR, standard permits, etc.), changes to permitted allowable emission rates when exclusively due to changes to standardized emission factors, or reductions in emissions which are not enforceable through the amended permit. Thus, the total emissions increase would be the sum of emissions increases under the amended permit and the emissions decreases under the amended permit for each air contaminant.

The table below will generate emission increases based on the values represented on the "Unit Types - Emission Rates" sheet. Use the "yes" and "no" options in column B of the "Unit Types - Emission Rates" worksheet to indicate if a unit's proposed change of emissions should be included in these totals.

Notes:
1. Emissions of PM, PM10, and/or PM2.5 may have been previously quantified and authorized as PM, PM10,and/or PM2.5. These emissions will be speciated based on current guidance and policy to demonstrate compliance with current standards and public notice requirements may change during the permit review.

This row is optional. If you do not think the table below accurately represents public notice applicability increases for your project, provide discussion here (1000 characters).	
Do the facilities handle, load, unload, dry, manufacture, or process grain, seed, legumes, or vegetable fibers (agricultural facilities)?	No

Texas Commission on Environmental Quality
Form PI-1 General Application
Public Notice

Date: 12/17/2021
Permit #: 38754
Company: Valero Refining - Texas, L.P.

Pollutant	Current Long-Term (tpy)	Consolidated Emissions (tpy)	Proposed Long-Term (tpy)	Project Change in Allowable (tpy)	PN Threshold	Notice required?
VOC	1023.71	0.00	1076.74	53.03	5	Yes
PM	832.06	0.00	840.90	8.84	5	Yes*
PM_{10}	827.71	0.00	836.57	8.86	5	Yes*
$PM_{2.5}$	757.11	0.00	807.41	50.30	5	Yes*
NO_x	1604.21	0.00	1641.33	37.12	5	Yes
CO	2982.70	0.00	3183.10	200.40	50	Yes
SO_2	1557.20	0.00	1596.95	39.75	10	Yes
Pb	0.00	0.00	0.00	0.00	0.6	No
H2S	21.7	0	21.79	0.09	5	No
NH3	10.63	0	37.25	26.62	5	Yes
Exempt Solvents	0.6	0	0.6	0	5	No
HF	2.29	0	2.29	0	5	No
Cl2	0.04	0	0.04	0	5	No
H2SO4	214.63	0	199.31	-15.32	5	No
HCl	0.57	0	0.57	0	5	No
HCN	320.4	0	320.4	0	5	No
CO2	0	0	2674037	2674037	5	Yes
CH4	0	0	79.86	79.86	5	Yes
N2O	0	0	14.84	14.84	5	Yes
CO2 Equivalent	0	0	2680456	2680456	**	Yes

* Notice is required for PM, PM10, and PM2.5 if one of these pollutants is above the threshold.

** Notice of a GHG action is determined by action type. Initial and major modification always require notice. Voluntary updates require a consolidated notice if there is a change to BACT. Project emission increases of CO2e (CO2 equivalent) are not relevant for determining public notice of GHG permit actions.

D. Is public notice required for this project as represented in this PI-1? If no, proceed to Section III Small Business Classification. Note: public notice applicability for this project may change throughout the technical review.	Yes
E. Are any HAPs to be authorized/re-authorized with this project? The category "HAPs" must be specifically listed in the public notice if the project authorizes (reauthorizes for renewals) any HAP pollutants.	No

II. Public Notice Information

Complete this section if public notice is required (determined in the above section) or if you are not sure if public notice is required.

A. Contact Information

Enter the contact information for the **person responsible for publishing.** This is a designated representative who is responsible for ensuring public notice is properly published in the appropriate newspaper and signs are posted at the facility site. This person will be contacted directly when the TCEQ is ready to authorize public notice for the application.

Prefix (Mr., Ms., Dr., etc.):	Ms.
First Name:	Meagan
Last Name:	Marquard
Title:	Superintendent Environmental
Company Name:	Valero Refining - Texas, L.P.

Mailing Address:	PO Box 9370
Address Line 2:	
City:	Corpus Christi
State:	TX
ZIP Code:	78469
Telephone Number:	361-299-8913
Fax Number:	361-289-3126
Email Address:	Meagan.Marquard@valero.com

Enter the contact information for the **Technical Contact.** This is the designated representative who will be listed in the public notice as a contact for additional information.

Prefix (Mr., Ms., Dr., etc.):	Ms.
First Name:	Meagan
Last Name:	Marquard
Title:	Superintendent Environmental
Company Name:	Valero Refining - Texas, L.P.
Mailing Address:	PO Box 9370
Address Line 2:	
City:	Corpus Christi
State:	TX
ZIP Code:	78469
Telephone Number:	361-299-8913
Fax Number:	361-289-3126
Email Address:	Meagan.Marquard@valero.com

B. Public place

Place a copy of the full application (including the entire completed PI-1 and all attachments) at a public place in the county where the facilities are or will be located. You must state where in the county the application will be available for public review and comment. The location must be a public place and described in the notice. A public place is a location which is owned and operated by public funds (such as libraries, county courthouses, city halls) and cannot be a commercial enterprise. You are required to pre-arrange this availability with the public place indicated below. The application must remain available from the first day of publication through the designated comment period.

If this is an application for a PSD, nonattainment, or FCAA §112(g) permit, the public place must have internet access available for the public as required in 30 TAC § 39.411(f)(3).

If the application is submitted to the agency with information marked as Confidential, you are required to indicate which specific portions of the application are not being made available to the public. These portions of the application must be accompanied with the following statement: ***Any request for portions of this application that are marked as confidential must be submitted in writing, pursuant to the Public Information Act, to the TCEQ Public Information Coordinator, MC 197, P.O. Box 13087, Austin, Texas 78711-3087.***

Name of Public Place:	Owen R. Hopkins Public Library
Physical Address:	3202 McKenzie Road
Address Line 2:	
City:	Corpus Christi
ZIP Code:	78410
County:	Nueces
Has the public place granted authorization to place the application for public viewing and copying?	Yes
Does the public place have Internet access available for the public?	Yes

C. Alternate Language Publication

In some cases, public notice in an alternate language is required. If an elementary or middle school nearest to the facility is in a school district required by the Texas Education Code to have a bilingual program, a bilingual notice will be required. If there is no bilingual program required in the school nearest the facility, but children who would normally attend those schools are eligible to attend bilingual programs elsewhere in the school district, the bilingual notice will also be required. If it is determined that alternate language notice is required, you are responsible for ensuring that the publication in the alternate language is complete and accurate in that language.

Is a bilingual program required by the Texas Education Code in the School District?	Yes
Are the children who attend either the elementary school or the middle school closest to your facility eligible to be enrolled in a bilingual program provided by the district?	Yes
If yes to either question above, list which language(s) are required by the bilingual program.	Spanish
Enter the second required language, if applicable.	
Enter the third required language, if applicable.	
Enter the fourth required language, if applicable.	

D. PSD and Nonattainment Permits Only

If this is an application for emissions of GHGs, select either "Separate Public Notice" or "Consolidated Public Notice". Note: Separate public notices requires a separate application.	Consolidated Public Notice

We must notify the applicable county judge and presiding officer when a PSD or Nonattainment permit or modification application is received. This information can be obtained at the link below:

https://www.txdirectory.com

Provide the information for the **County Judge** for the location where the facility is or will be located.

The Honorable:	Barbara Canales
Mailing Address:	901 Leopard, Room 303
Address Line 2:	
City:	Corpus Christi
State:	Texas
ZIP Code:	78401

Provide the information for the **Presiding Officer(s)** of the municipality for this facility site. This is frequently the Mayor.

First Name:	Paulette
Last Name:	Guajardo
Title:	Mayor
Mailing Address:	P.O. Box 9277
Address Line 2:	
City:	Corpus Christi
State:	Texas
ZIP Code:	78469
Are the proposed facilities located within 100 km or less of an affected state or Class I Area?	No

III. Small Business Classification	
Complete this section to determine small business classification. If a small business requests a permit, agency rules (30 TAC § 39.603(f)(1)(A)) allow for alternative public notification requirements if all of the following criteria are met. If these requirements are met, public notice does not have to include publication of the prominent (12 square inch) newspaper notice.	
Does the company (including parent companies and subsidiary companies) have fewer than 100 employees or less than $6 million in annual gross receipts?	No
Small business classification:	**No**

Texas Commission on Environmental Quality
Form PI-1 General Application
Federal Applicability

I. County Classification	
Does the project require retrospective review?	No
County (completed for you from your response on the General sheet)	Nueces
This project will be located in an area that is in attainment for ozone as of Sept. 23, 2019. Select from the drop-down list to the right if you would like the project to be reviewed under a different classification.	
Determination:	**This project will be located in an area that is in attainment or unclassified for all pollutants. Nonattainment review is not required.**

II. PSD and GHG PSD Applicability Summary

Is netting required for the PSD analysis for this project? **Yes**

If yes, the project increases listed below should be after netting has been performed. Attach the netting information to the application.

Pollutant	Project Increase (after netting)	Threshold	PSD Review Required?
CO	413.3	100	Yes
NO_x	298.8	40	Yes
PM	241.7	25	Yes
PM_{10}	239.1	15	Yes
$PM_{2.5}$	238.3	10	Yes
SO_2	447.7	40	Yes
Ozone (as VOC)	110.7	40	Yes
Ozone (as NOx)	298.8	40	Yes
Pb	0	0.6	No
H_2S	0.6	10	No
TRS	0.6	10	No
Reduced sulfur compounds (including H_2S)	0.6	10	No
H_2SO_4	168.6	7	Yes
Fluoride (excluding HF)	0	3	No
CO2e	1110869	75000	Yes

Date: _12/17/2021_
Permit #: _38754_
Company: _Valero Refining - Texas, L.P._

Texas Commission on Environmental Quality
Form PI-1 General Application
Fees

I. Expedited Permitting Request	
Are you requesting to expedite this project?	Yes
Does the purpose of the application associated with this request to expedite benefit the economy of this state or an area of this state? If no, this project does not qualify for expedited permitting.	Yes
Surcharge amount due	$ 20,000.00
Surcharge amount paid	$ 20,000.00
Enter the check, money order, ePay Voucher, or other transaction number.	ePay Voucher No. 530715
You must request expedited processing and pay the fee through STEERS when submitting your ePermit application.	

II. General Information - Non-Renewal	
Is this project for new facilities controlled and operated directly by the federal government? (30 TAC § 116.141(b)(1) and 30 TAC § 116.163(a))	No
A fee of $75,000 shall be required if no estimate of capital project cost is included with the permit application. (30 TAC § 116.141(d)) Select "yes" here to use this option.	Yes
Select Application Type	Major Application

VAL_000353

In signing the "General" sheet with this fee worksheet attached, I certify that the total estimated capital cost of the project as defined in 30 TAC §116.141 is equal to or less than the above figure. I further state that I have read and understand Texas Water Code § 7.179, which defines Criminal Offenses for certain violations, including intentionally or knowingly making, or causing to be made, false material statements or representations.

Your estimated capital cost:	Maximum fee appies.
Permit Application Fee:	**$75,000.00**

VII. Total Permit Fees	
Note: fees can be paid together with one payment or as two separate payments.	
Non-Renewal Fee	$75,000.00
Total	$75,000.00

VIII. Payment Information	
A. Payment One (required)	
Was the fee paid online?	Yes
Enter the fee amount:	$ 75,000.00
Enter the check, money order, ePay Voucher, or other transaction number (enter "STEERS" if submitting and paying through STEERS):	ePay Voucher No. 530714 STEERS
Enter the Company name as it appears on the check:	

C. Total Paid	**$75,000.00**

IX. Professional Engineer Seal Requirement	
Is the estimated capital cost of the project above $2 million?	Yes
Is this project subject to an exemption contained in the Texas Engineering Practice Act (TEPA)? (30 TAC § 116.110(f))	No
Is the application required to be submitted under the seal of a Texas licensed P.E.? Note: an electronic PE seal is acceptable.	Yes

Texas Commission on Environmental Quality
Form PI-1 General Application
Impacts

Date: 12/17/2021
Permit #: 38754
Company: Valero Refining - Texas, L.P.

Pollutant	Does this pollutant require PSD review?	How will you demonstrate that this project meets all applicable requirements?	Notes	Additional Notes (optional)
Ozone	Yes	Protocol (required for all PSD projects, excluding GHG PSD)	Attach a protocol meeting all requirements listed on the TCEQ website.	
VOC	No	MERA steps 0-2 AND Modeling (screen or refined)	Attach both an "Electronic Modeling Evaluation Workbook" (EMEW) AND a detailed description of which MERA step was met. Include speciated emission rates with the total VOC and/or PM species corresponding to the short-term and long-term differences represented on the Unit Types-Emission Rates sheet.	
CO	Yes	Protocol (required for all PSD projects, excluding GHG PSD)	Attach a protocol meeting all requirements listed on the TCEQ website.	
H2S	No	Modeling: screen or refined	Attach a completed "Electronic Modeling Evaluation Workbook" (EMEW).	
NH3	No	Modeling: screen or refined	Attach a completed "Electronic Modeling Evaluation Workbook" (EMEW).	
NOx	Yes	Protocol (required for all PSD projects, excluding GHG PSD)	Attach a protocol meeting all requirements listed on the TCEQ website.	
PM	Yes	Protocol (required for all PSD projects, excluding GHG PSD)	Attach a protocol meeting all requirements listed on the TCEQ website.	

Date: _12/17/2021_
Permit #: _38754_
Company: _Valero Refining - Texas, L.P._

Pollutant	Does this pollutant require PSD review?	How will you demonstrate that this project meets all applicable requirements?	Notes	Additional Notes (optional)
PM10	Yes	Protocol (required for all PSD projects, excluding GHG PSD)	Attach a protocol meeting all requirements listed on the TCEQ website.	
PM2.5	Yes	Protocol (required for all PSD projects, excluding GHG PSD)	Attach a protocol meeting all requirements listed on the TCEQ website.	
SO2	Yes	Protocol (required for all PSD projects, excluding GHG PSD)	Attach a protocol meeting all requirements listed on the TCEQ website.	
Exempt Solvents	No	Protocol (required for all PSD projects, excluding GHG PSD)	Attach a protocol meeting all requirements listed on the TCEQ website.	
HF	No	Not applicable	This pollutant is not a part of this project or does not require an impacts analysis.	
Cl2	No	Not applicable	This pollutant is not a part of this project or does not require an impacts analysis.	
H2SO4	Yes	Protocol (required for all PSD projects, excluding GHG PSD)	Attach a protocol meeting all requirements listed on the TCEQ website.	

Pollutant	Does this pollutant require PSD review?	How will you demonstrate that this project meets all applicable requirements?	Notes	Additional Notes (optional)
HCl	No	Not applicable	This pollutant is not a part of this project or does not require an impacts analysis.	
HCN	No	Not applicable	This pollutant is not a part of this project or does not require an impacts analysis.	
CO2				
CH4				
N2O				
CO2 Equivalent				

Texas Commission on Environmental Quality
Form PI-1 General Application
BACT

Date: _12/17/2021_
Permit #: _38754_
Company: _Valero Refining - Texas, L.P._

Action Requested	FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
New/Modified	Various	MSS Activities	CO	See Additional Notes:	Yes	See Application Section 6
			H2S	See Additional Notes:	Yes	See Application Section 6
			NH3	See Additional Notes:	Yes	See Application Section 6
			NOx	See Additional Notes:	Yes	See Application Section 6
			PM	The emission reduction techniques for PM10 and PM2.5 will follow the technique for PM. See Additional Notes:	Yes	See Application Section 6
			SO2	See Additional Notes:	Yes	See Application Section 6
			VOC	See Additional Notes:	Yes	See Application Section 6
			Exempt Solvents	See Additional Notes:	Yes	See Application Section 6
			MSS	Not required since this is a MSS unit type.	Yes	
New/Modified	HOC-FUG	Fugitives: Piping and Equipment Leak	H2S	AVO inspection twice per shift. Appropriate credit for AVO program.	Yes	
			VOC	Specify which is applicable: 1. Uncontrolled VOC emissions < 10 tpy: none 2. 10 tpy < uncontrolled VOC emissions < 25 tpy: 28M leak detection and repair program. 75% credit for 28M. 3. Uncontrolled VOC emissions > 25 tpy: 28VHP leak detection and repair program. 97% credit for valves, 85% for pumps and compressors. 4. VOC vp < 0.002 psia: no inspection required, no fugitive emissions expected. For emissions of approved odorous compounds (chlorine, ammonia, hydrogen sulfide, hydrogen cyanide and mercaptans only): AVO inspection twice per shift. Appropriate credit for AVO program.	Yes	See Application Section 6
			MSS	Same as normal operation BACT requirements.	Yes	
New/Modified	SWS-FUG	Fugitives: Piping and Equipment Leak	H2S	AVO inspection twice per shift. Appropriate credit for AVO program.	Yes	
			VOC	Specify which is applicable: 1. Uncontrolled VOC emissions < 10 tpy: none 2. 10 tpy < uncontrolled VOC emissions < 25 tpy: 28M leak detection and repair program. 75% credit for 28M. 3. Uncontrolled VOC emissions > 25 tpy: 28VHP leak detection and repair program. 97% credit for valves, 85% for pumps and compressors. 4. VOC vp < 0.002 psia: no inspection required, no fugitive emissions expected. For emissions of approved odorous compounds (chlorine, ammonia, hydrogen sulfide, hydrogen cyanide and mercaptans only): AVO inspection twice per shift. Appropriate credit for AVO program.	Yes	See Application Section 6

Texas Commission on Environmental Quality
Form PI-1 General Application
BACT

Date: _12/17/2021_
Permit #: _38754_
Company: _Valero Refining - Texas, L.P._

Action Requested	FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
			MSS	Same as normal operation BACT requirements.	Yes	
New/Modified	24-ST-01	Fluid Catalytic Cracking Unit	CO	500 ppmv maximum hourly concentration.	Yes	
			HCN	See additional notes:	Yes	See Application Section 6
			H2SO4	See Additional Notes:	Yes	See Application Section 6
			NH3	See Additional Notes:	Yes	See Application Section 6
			NOx	Short term limit: 200 ppmv, one hour average corrected to 0% oxygen. Annual emission limit: 100 ppmv, corrected to 0% oxygen.	Yes	
			PM	The emission reduction techniques for PM10 and PM2.5 will follow the technique for PM. Includes condensable PM. 1 lb/1000 lbs. of coke burned off. Opacity is limited to 15-20% over a 6-minute average period.	Yes	
			SO2	Short term limit: 300 ppmv, one hour average, corrected to 0% oxygen. Annual emission limit: 100 ppmv, corrected to 0% oxygen.	Yes	
			VOC	<10 ppmv exit concentration.	Yes	
			CO2	See additional notes:		See Application Section 6
			CH4	See additional notes:		See Application Section 6
			N2O	See additional notes:		See Application Section 6
			CO2 Equivalent	See additional notes:		See Application Section 6
			MSS	Same as normal operation BACT requirements.	Yes	
New/Modified	30-B-05	Boiler: Liquid and Gas Fuel, > 40 MMBtu/hr	CO	50 ppmv at 3% O2 achieved by good combustion practices, oxidation catalyst, and/or maintenance of the boiler. Specify technique(s).	Yes	See Application Section 6
			NH3	10 ppmvd at 3% O2 achieved by controlling the NH3 injection system to minimize NH3 slip.	Yes	See Application Section 6
			NOx	Specify fuel type(s) to be fired. When firing natural gas: 0.01 lb/MMBtu achieved by When firing plant fuel gas: 0.015 lb/MMBtu achieved Note: plant fuel gas may contain up to 75% natural gas. Specifics: <50% H2; > 920 Btu/dscf. Emission limits typically achieved using dry-low NOx combustors, limiting fuel consumption, SCR, and/or water or steam injection. Specify technique(s). Fuel oil firing limited to 760 hours/yr.	Yes	See Application Section 6
			PM	The emission reduction techniques for PM10 and PM2.5 will follow the technique for PM. Less than 5% opacity. Good combustion practices.	Yes	See Application Section 6
			SO2	Firing low sulfur fuel and good combustion practices.	Yes	See Application Section 6
			VOC	Good combustion practices.	Yes	See Application Section 6
			CO2	See additional notes:		See Application Section 6
			CH4	See additional notes:		See Application Section 6
			N2O	See additional notes:		See Application Section 6
			CO2 Equivalent	See additional notes:		See Application Section 6
			MSS	Minimizing the duration of these activities and operating the facility in accordance with best management practices and good air pollution control practices	Yes	

Texas Commission on Environmental Quality
Form PI-1 General Application
BACT

Date: 12/17/2021
Permit #: 38754
Company: Valero Refining - Texas, L.P.

Action Requested	FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
New/Modified	HOC-PP-CT	Cooling Tower	PM	The emission reduction techniques for PM10 and PM2.5 will follow the technique for PM. Drift < 0.001% achieved by drift eliminators	Yes	See Application Section 6
			VOC	Non-contact design. Monthly monitoring of VOC in water per Appendix P or approved equivalent (assume all VOC stripped out). Repair identified leaks as soon as possible, but before next scheduled shutdown, or shutdown triggered by 0.08 ppmw cooling water VOC concentration.	Yes	See Application Section 6
			MSS	Same as normal operation BACT requirements.	Yes	
New/Modified	CAS-HOCPP	Control: Adsorption System: Disposable	VOC	Minimum of two carbon canisters in series; continuous emissions monitor (CEM) and recorder before the last canister, but periodic monitoring before the last canister may be acceptable for single compound or low use rate systems. Breakthrough concentration 20-100 ppm based on vendor representations for specific compounds.	Yes	See Application Section 6
			MSS	Same as normal operation BACT requirements.	Yes	
New/Modified	MEROX	Process Vent	VOC	Non-halogenated VOCs: flare, any oxidizer, adsorber, absorber/scrubber, etc. Specify technique. Must meet that control device's approved efficiency. Halogenated VOC: Thermal oxidation followed by absorber/scrubber carbon adsorption. Specify technique. Must meet that control device's approved efficiency.	Yes	See Application Section 6
			SO2	See Additional Notes:	Yes	See Application Section 6
			H2S	See Additional Notes:	Yes	See Application Section 6
			MSS	Same as normal operation BACT requirements.	Yes	

Date: _12/17/2021_
Permit #: _38754_
Company: _Valero Refining - Texas, L.P._

FIN	Unit Type	Pollutant	Minimum Monitoring Requirements	Confirm	Additional Notes for Monitoring	Proposed Measurement Technique (only complete for pollutants with a project increase above the PSD threshold)	Additional Notes for Measuring:
Various	MSS Activities	CO	Requirement dependent on application representation. Vapor concentration measurement prior to opening to atmosphere may be required and/or emission potential may be recalculated. Each measurement and/or number of events monthly must be monitored. Must monitor open ended lines for leaks if open more than 72 hours without cap, blind flange or plug. Where add on control is used for purge, monitoring consistent with device used and flow and firing rates monitored or potential calculated.	Yes		Record keeping	
		H2S	See Additional Notes:	Yes	There is no change to existing MSS emission limits for this project	Record keeping	
		NH3	See Additional Notes:	Yes	There is no change to existing MSS emission limits for this project	Record keeping	
		NOx	Where add on control is used for purge, monitoring consistent with device used and flow and firing rates monitored or potential calculated.	Yes		Record keeping	
		PM	The emission monitoring techniques for PM10 and PM2.5 will follow the technique for PM. Blasting material and usage. Paint spray type and usage. Combustion firing rates. Differential pressure across PM control devices.	Yes		Record keeping	
		SO2	Where add on control is used for purge, monitoring consistent with device used and flow and firing rates monitored or potential calculated.	Yes		Record keeping	
		VOC	Requirement dependent on application representation. Vapor concentration measurement prior to opening to atmosphere may be required and/or emission potential may be recalculated. Each measurement and/or number of events monthly must be monitored. Must monitor open ended lines for leaks if open more than 72 hours without cap, blind flange or plug. Where add on control is used for purge, monitoring consistent with device used and flow and firing rates monitored or potential calculated.	Yes		Record keeping	
		Exempt Solvents	See Additional Notes:	Yes	There is no change to existing MSS emission limits for this project	Record keeping	
HOC-FUG	Fugitives: Piping and Equipment Leak	H2S	Look for leaks twice per shift using audio, visual or olfactory (AVO) senses to observe leaks. Record results and corrective action taken.	Yes		Record keeping	
		VOC	Use EPA Method 21 to monitor for leaks from seals on pumps, compressors, agitator and valve seals on piping components in light liquid and gas VOC service quarterly. Gas or hydraulic check new and a replaced connectors prior to returning to service, or monitor with Method 21 within 15 days of returning to service. Leak detection and repair (LDAR) Program 28M has a leak definition where repair action is required at 10,000 ppmv. LDAR Program 28 VHP has a leak definition where repair action is required at 500 ppmv for valves and connectors and 2000 ppmv for pumps, compressors and agitators. Check connectors weekly using audio, visual or olfactory (AVO) senses to observe leaks. Record results and corrective action taken.	Yes		Record keeping	
SWS-FUG	Fugitives: Piping and Equipment Leak	H2S	Look for leaks twice per shift using audio, visual or olfactory (AVO) senses to observe leaks. Record results and corrective action taken.	Yes		Record keeping	
		VOC	Use EPA Method 21 to monitor for leaks from seals on pumps, compressors, agitator and valve seals on piping components in light liquid and gas VOC service quarterly. Gas or hydraulic check new and a replaced connectors prior to returning to service, or monitor with Method 21 within 15 days of returning to service. Leak detection and repair (LDAR) Program 28M has a leak definition where repair action is required at 10,000 ppmv. LDAR Program 28 VHP has a leak definition where repair action is required at 500 ppmv for valves and connectors and 2000 ppmv for pumps, compressors and agitators. Check connectors weekly using audio, visual or olfactory (AVO) senses to observe leaks. Record results and corrective action taken.	Yes		Record keeping	

24-ST-01	Fluid Catalytic Cracking Unit	CO	CEMS for CO and O2, Flow monitoring or calculation	Yes		CEMS	
		HCN	See additional notes:	Yes	Emission factor used for permit limit apllied to actual calculated coke burn rate.	COMS	Calculated coke burn calculated using Equation 6 from 40 CFR § 60.104a(d)(4)(iii)
		H2SO4	CEMS for SO2 and O2, Flow monitoring or calculation	Yes	Emission factor used for permit limit apllied to actual calculated coke burn rate.	COMS	Calculated coke burn calculated using Equation 6 from 40 CFR § 60.104a(d)(4)(iii)
		NH3	See Additional Notes:	Yes	Emission factor used for permit limit apllied to actual calculated coke burn rate.	COMS	Calculated coke burn calculated using Equation 6 from 40 CFR § 60.104a(d)(4)(iii)
		NOx	CEMS for NOx and O2, Flow monitoring or calculation	Yes		CEMS	
		PM	The emission monitoring techniques for PM10 and PM2.5 will follow the technique for PM. Continuous Opacity Monitor, or differential pressure across wet scrubber with daily opacity readings	Yes	Emission factor used for permit limit apllied to actual calculated coke burn rate.	COMS	Calculated coke burn calculated using Equation 6 from 40 CFR § 60.104a(d)(4)(iii)
		SO2	CEMS for SO2 and O2, Flow monitoring or calculation	Yes		CEMS	
		VOC	CPMS for Coke Burn, CEMS for CO and O2	Yes		CEMS	
		CO2	See additional notes:	Yes	CO2 , CO, and O2 CEMS used along with Equation Y-6 and Y-7a from 40 CFR Part 98 Subpart Y are used to calcute CO2 emissions.	CEMS	
		CH4	See additional notes:	Yes	Calculated using Equation Y-9 from 40 CFR Part 98 Subpart Y.	CEMS	
		N2O	See additional notes:	Yes	Calculated using Equation Y-10 from 40 CFR Part 98 Subpart Y.	CEMS	
		CO2 Equivalent	See additional notes:	Yes	Calucated using method described in 40 CFR Part 98.	CEMS	
30-B-05	Boiler: Liquid and Gas Fuel, > 40 MMBtu/hr	CO	totalizing fuel flow meter record monthly fuel analysis for heating value every six month visible emission/opacity observations >100 MMBtu/hr: continuous flow meter average hourly, CO and O2 CEMS	Yes		CEMS	
		NH3	SCR and NSCR: ammonia CEMS or NOx monitor across the catalyst continuous flow meter average hourly, O2 CEMS	Yes		CEMS	
		NOx	totalizing fuel flow meter record monthly fuel analysis for heating value every six month CEMS. Data collected four times per hour and averaged hourly. >100 MMBtu/hr: continuous flow meter average hourly, NOx and O2 CEMS	Yes		CEMS	
		PM	The emission monitoring techniques for PM10 and PM2.5 will follow the technique for PM. totalizing fuel flow meter record monthly, fuel analysis for heating value every six month, visible emission/opacity observations daily for major sources and quarterly for minor sources. >100 MMBtu/hr: continuous flow meter average hourly, CO and O2 CEMS	Yes		Other:	CEMS and COMS
		SO2	totalizing fuel flow meter record monthly fuel analysis for heating value and total sulfur every six month visible emission/opacity observations Refinery: Continuous H2S monitoring of fuel gas	Yes		COMS	
		VOC	totalizing fuel flow meter record monthly fuel analysis for heating value every six month CEMS. Data collected four times per hour and averaged hourly. >100 MMBtu/hr: continuous flow meter average hourly, CO and O2 CEMS	Yes		COMS	
		CO2	See additional notes:	Yes	Monthly thermal efficiency calculation	COMS	
		CH4	See additional notes:	Yes	Monthly thermal efficiency calculation	COMS	
		N2O	See additional notes:	Yes	Monthly thermal efficiency calculation	COMS	
		CO2 Equivalent	See additional notes:	Yes	Monthly thermal efficiency calculation	COMS	

HOC-PP-CT	Cooling Tower	PM	The emission monitoring techniques for PM10 and PM2.5 will follow the technique for PM. Cooling water circulation rate measured hourly unless maximum circulation rate assumed. Large (>50,000 gpm circulation rate): Total Dissolved Solids (TDS) in the cooling water daily then reduced to weekly and quarterly with daily conductivity measurement that is correlated. Small (<50,000 gpm circulation rate): Total Dissolved Solids (TDS) in the cooling water measured weekly.	Yes		Record keeping	
		VOC	VOC concentration in the cooling water by TCEQ stripping method or approved equivalent monthly. Cooling water circulation rate measured hourly unless maximum circulation rate assumed.	Yes		Record keeping	
CAS-HOCPP	Control: Adsorption System: Disposable	VOC	VOC concentration measured at a frequency equivalent to between 20 and 30 percent of the minimum potential saturation time. Visual inspection for carbon build up around the stack weekly.	Yes		Record keeping	
MEROX	Process Vent	VOC	Production rate or flow as appropriate Monitoring consistent with Control Device	Yes		Record keeping	
		SO2	See Additional Notes:	Yes	Same as VOC	Record keeping	
		H2S	See Additional Notes:	Yes	Same as VOC	Record keeping	

Texas Commission on Environmental Quality
Form PI-1 General Application
Materials

Date: 12/17/2021
Permit #: 38754
Company: Valero Refining - Texas, L.P.

Item	How submitted	Date submitted
A. Administrative Information		
Form PI-1 General Application	STEERS	09/30/2021
Hard copy of the General sheet with original (ink) signature	Not applicable	
Professional Engineer Seal	STEERS	09/30/2021
B. General Information		
Copy of current permit (both Special Conditions and MAERT)		
Core Data Form	Not applicable	
Area map	STEERS	09/30/2021
Plot plan	STEERS	09/30/2021
Process description	STEERS	09/30/2021
Process flow diagram	STEERS	09/30/2021
List of MSS activities	STEERS	09/30/2021
State regulatory requirements discussion	STEERS	09/30/2021
C. Federal Applicability		
Summary and project emission increase determination - Tables 1F and 2F	STEERS	09/30/2021
Netting analysis (if required) - Tables 3F and 4F as needed	STEERS	09/30/2021
D. Technical Information		
BACT discussion, if additional details are attached	STEERS	09/30/2021
Monitoring information, if additional details are attached	STEERS	09/30/2021
Material Balance (if applicable)	STEERS	09/30/2021
Calculations	STEERS	09/30/2021
E. Impacts Analysis		
Qualitative impacts analysis		
MERA analysis	Not applicable	
EMEW: SCREEN3	Not applicable	
EMEW: NonSCREEN3	STEERS	09/30/2021
PSD modeling protocol	STEERS	09/30/2021
F. Additional Attachments		

Texas Commission on Environmental Quality
Form PI-1 General Application Summary

Date: 12/17/2021
Permit #: 38754
Company: Valero Refining - Texas, L.P.

Project Summary

This sheet is a summary of representations made in this PI-1. No additional information is required by the applicant.

Project Description

Valero plans to undertake changes to the West Plant Heavy Oil Cracker (HOC), a fluidized catalytic cracking (FCC) unit. Due to the integrated nature of refinery operations, the project ("HOC Reconfiguration Project") will necessitate construction of a new utility boiler, a new cooling tower, and a new Gas Plant.

Contact Data

Company	Valero Refining - Texas, L.P.
Responsible official	Mr. Joe Almaraz
Phone	361-289-3328
Email	Joe.Almaraz@valero.com
Technical contact	Ms. Meagan Marquard
Phone	361-299-8913
Email	Meagan.Marquard@valero.com

Permit and Action Type Requested

Permit Type	Action Type	Permit Number
Minor NSR	Amendment	38754
Special Permit	Not applicable	
De Minimis	Not applicable	
Flexible	Not applicable	
PSD	Major Modification	PSDTX324M14
Nonattainment	Not applicable	
HAP Major Source [FCAA § 112(g)]	Not applicable	
PAL	Not applicable	
GHG PSD	Initial	TBD

Fees

Non-Renewal fee	$75,000.00
Renewal fee	
Total Fee	$75,000.00

Miscellaneous

TCEQ Region	Region 14
RN	RN100214386
CN	CN600127468
Title V site?	Yes
Industry group	Chemical / Energy
Public notice required?	Yes

Air Pollutant Watch List

Is this facility located in an APWL area AND this application includes that pollutant?	No
APWL pollutants	

Disaster Review

Any air contaminants for which a disaster review is required?	No
Disaster review pollutants	

Application contains **confidential** information?	No

Project Timing

Projected Start of Construction	10/1/2022
Projected Start of Operation	1/1/2024

Project Emission Summary (tpy)

Pollutant	Current (tpy)	Consolidated Emissions (tpy)	Proposed (tpy)	Project Change in Allowable (tpy)
VOC	1023.71	0.00	1076.74	53.03
PM	832.06	0.00	840.90	8.84
PM_{10}	827.71	0.00	836.57	8.86
$PM_{2.5}$	757.11	0.00	807.41	50.30
NO_x	1604.21	0.00	1641.33	37.12
CO	2982.70	0.00	3183.10	200.40
SO_2	1557.20	0.00	1596.95	39.75
Pb	0.00	0.00	0.00	0.00
H2S	21.70	0.00	21.79	0.09
NH3	10.63	0.00	37.25	26.62
Exempt Solvents	0.60	0.00	0.60	0.00
HF	2.29	0.00	2.29	0.00
Cl2	0.04	0.00	0.04	0.00
H2SO4	214.63	0.00	199.31	-15.32
HCl	0.57	0.00	0.57	0.00
HCN	320.40	0.00	320.40	0.00
CO2	0.00	0.00	2674037.00	2674037.00
CH4	0.00	0.00	79.86	79.86
N2O	0.00	0.00	14.84	14.84
CO2 Equivalent	0.00	0.00	2680456.00	2680456.00

Federal Applicability

County	Nueces
County classification (as of 9/23/2019)	attainment or unclassified for all pollutants
Ozone classification requested for this project	attainment or unclassified for all pollutants
Pollutants requiring PSD review	CO, NOx, PM, PM10, PM2.5, SO2, Ozone (as VOC),
Pollutants requiring NA review	

Impacts

No impacts required	HF, Cl2, HCl, HCN,
Qualitative analysis	
MERA analysis	VOC,
Modeling	VOC, H2S, NH3,
PSD Protocol	Ozone, CO, NOx, PM, PM10, PM2.5, SO2, Exempt Sol

From:	Joe Kupper
To:	Cara Hill
Cc:	Arnosky, David; Almaraz, Aimee; Jeff Saitas; Kelly Ruble; R6AirPermitsTX@epa.gov; Marquard, Meagan; Beth Echels
Subject:	RE: C29 - 38754 Valero (Amendment, 333877)
Date:	Monday, January 24, 2022 4:49:00 PM
Attachments:	Valero Permit 38754 Air Quality Analysis Jan 2022.pdf image001.png

---

Cara,

Attached is the Air Quality Analysis for the PSD amendment to Permit 38754, Project 333877. The electronic files referenced in the report will be uploaded to the TCEQ ftp site and shared with you.

Please let me know if you have any questions.

Thanks, Joe

Joe Kupper, P.E.
Principal Consultant

9737 Great Hills Trail, Suite 340 Austin, TX 78759
P 512.693.4186 M 512.940.5516
Email: jkupper@disorboconsult.com

A picture containing icon Description automatically generated

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From: Marquard, Meagan <Meagan.Marquard@valero.com>
Sent: Friday, December 17, 2021 9:17 AM
To: Cara Hill <Cara.Hill@Tceq.Texas.Gov>
Cc: Arnosky, David <David.Arnosky@valero.com>; Joe Kupper <jkupper@disorboconsult.com>; Almaraz, Aimee <Aimee.Almaraz@valero.com>; Jeff Saitas <jsaitas@westcapitol.com>; Kelly Ruble <kelly.ruble@tceq.texas.gov>; R6AirPermitsTX@epa.gov
Subject: RE: C29 - 38754 Valero (Amendment, 333877)

Good Morning Ms. Hill –

Attached, please find the additional information requested in your letter dated December 8, 2021, regarding the permit application for the Valero Refining – Texas L.P. Heavy Oil Cracker (HOC) Unit Reconfiguration Project at the Corpus Christi West Plant.

Please let me know if you have questions or require additional information. Thank you!

Meagan Marquard
Environmental Superintendent
Valero - Bill Greehey Refineries
Office: (361) 299-8913
Mobile: (520) 249-5349

From: Cara Hill <Cara.Hill@Tceq.Texas.Gov>
Sent: Wednesday, December 08, 2021 3:24 PM
To: Marquard, Meagan <Meagan.Marquard@valero.com>
Subject: C29 - 38754 Valero (Amendment, 333877)

Hi Meagan,

I've attached the NOD for the HOC Reconfiguration Project. Please let me know if you have questions or would like to discuss anything.

Thanks,
Cara Hill
TCEQ Air Permits
512-239-5123
How is our customer service? www.tceq.texas.gov/customersurvey

Air Quality Analysis

TCEQ Air Quality Permit Nos. 38754, PSDTX324M14

HOC Reconfiguration Project

Valero

Valero Refining – Texas, LP

Bill Greehey Refinery – West Plant
Corpus Christi, Nueces County, Texas
CN 600127468
RN 100214386

January 2022

STATE OF TEXAS
JOE M. KUPPER
79749
LICENSED
PROFESSIONAL ENGINEER

01/24/2022

Joe M. Kupper, P.E.

DiSorbo Consulting, LLC

TBPE# 15665

DiSorbo
Environmental Consulting Firm

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Appendices

Section 1
Project Information

1.1 Introduction

This Air Quality Analysis (AQA) modeling report has been completed to document the modeling conducted in support of the following permit application to the Texas Commission on Environmental Quality (TCEQ) Air Dispersion Modeling Team (ADMT).

Applicant:	**Valero Refining Texas, LP**
Facility:	**Bill Greehey Refinery - West Plant**
Permit Application Number:	**38754 and PSD-TX-324M15**
Regulated Entity Number:	**RN100214386**
Nearest City and County:	**Corpus Christi, Nueces County**
Applicant's Modeler:	**Joe Kupper, P.E.** **DiSorbo Consulting, LLC** **512-693-4186**

The AQA demonstrates compliance with the applicable air quality standards. This document summarizes the modeling methodologies, the data used, and the results. The modeling methodologies used in this analysis are consistent with current TCEQ and U.S. Environmental Protection Agency (EPA) guidelines. In addition to this AQA report for the pollutants subject to PSD review, an Electronic Modeling Evaluation Workbook (EMEW) has been uploaded to the TCEQ ftp site for the pollutants subject to minor new source review.

1.2 Project Overview

Valero Refining Texas, LP (Valero) operates the Bill Greehey Refineries located in Corpus Christi, Nueces County. The Bill Greehey Refineries consist of two plants, the East Plant and the West Plant. Operation of the West Plant is currently authorized under Permit Nos. 38754, PSDTX324M14, and various Permit by Rule (PBR) and Standard Permit authorizations. Permit 38754 ("the permit") is a Subchapter B construction permit.

Valero plans to undertake changes to the West Plant Heavy Oil Cracker (HOC), a type of fluidized catalytic cracking (FCC) unit. Due to the integrated nature of refinery operations, the project ("HOC Reconfiguration Project") will necessitate certain operational changes at other existing process units and will entail the construction of a new utility steam boiler, a new cooling tower, a new gas plant, a new sour water stripper, a new liquefied petroleum gas (LPG) Merox Treating Unit, a new Selective Hydrogenation Unit (SHU), a new C3/C4 Splitter Tower, and two new butane/butylene bullet tanks.

Maintenance, startup and shutdown (MSS) activities for all process units at the West Plant are currently authorized by permit, and existing MSS activities will not be affected by the project. MSS activities associated with the new equipment (e.g., new boiler, new gas plant) will be authorized as part of this application.

1.3 Type of Permit Review

The project is located in an attainment area for at least one pollutant. The West Plant is a named source (Petroleum Refinery) with a Potential to Emit (PTE) of 100 tpy or greater for at least one pollutant. Based on the applicability analysis, the HOC Improvement Project constitutes a major modification for purposes of PSD review. Based on the netting analysis, a PSD analysis is triggered for the proposed emissions of nitrogen oxides (NO_X), carbon monoxide (CO), volatile organic compounds (VOC), particulate matter (PM), including particulate matter less than 2.5 microns ($PM_{2.5}$), and particulate matter less than 10 microns (PM_{10}), and sulfur dioxide (SO_2), and sulfuric acid (H_2SO_4). Minor NSR requirements apply for hydrogen sulfide (H_2S), hydrogen cyanide (HCN) and ammonia (NH_3).

1.4 Constituents Evaluated

A NAAQS and PSD increment analysis was conducted for emissions of nitrogen dioxide (NO_2), CO, PM_{10}, and $PM_{2.5}$, and SO_2. A State Property Line analysis was conducted for emissions of SO_2, H_2SO_4, and hydrogen sulfide (H_2S). In addition, a health effects evaluation was conducted for the VOC and inorganic emissions following the modeling and effects review applicability (MERA) guidance document[1].

[1] https://www.tceq.texas.gov/assets/public/permitting/air/Guidance/NewSourceReview/mera.pdf

The constituents evaluated and the values that the modeling results were compared against are summarized on Table 1-1.

The significant impact levels (SILs), also called *de minimis* impact levels, are values generally set by EPA or TCEQ. If maximum off-property constituent concentrations are below these levels, the project does not cause a significant air quality impact, and no further modeling is performed. The terms *de minimis* and SIL may be used interchangeably throughout this document.

The 24-hour and annual $PM_{2.5}$ SILs of 1.2 $\mu g/m^3$ and 0.2 $\mu g/m^3$, respectively, were used in the Significance Analysis. Justification for use of the $PM_{2.5}$ SILs is provided in the EPA Memorandum[2] from Peter Tsirigotis: *Guidance on Significant Impact Levels for Ozone and Fine Particles in the Prevention of Significant Deterioration Permitting Program,* April 17, 2018, and relied upon for this AQA.

The SIL used for the 1-hour NO_2 NAAQS demonstration is based on the EPA's Interim guidance memorandum "General Guidance for Implementing the 1-hour NO_2 National Ambient Air Quality Standard in Prevention of Significant Deterioration Permits, Including an Interim *1-hour NO_2 Significant Impact Level"*, by Anna Marie Wood (June 28, 2010). The value is equal to 4% of the full NAAQS. The technical discussions in the memo are being referenced as justifications for using the SIL in the modeling.

The SIL used for the 1-hour SO_2 NAAQS demonstration is based on the EPA's Interim guidance memorandum "General Guidance for Implementing the 1-hour SO_2 National Ambient Air Quality Standard in Prevention of Significant Deterioration Permits, Including an Interim *1-hour SO_2 Significant Impact Level"*, by Anna Marie Wood (August 23, 2010). The value is equal to 4% of the full NAAQS. The technical discussions in the memo are being referenced as justifications for using the SIL in the modeling.

While there are no SILs for the State Property Line standards for SO_2, H_2S, and H_2SO_4, the TCEQ has generally accepted that 2% of the standard represents an insignificant air quality impact. The applicant used 2% of the full State Property Line standards as the *de minimis* levels to determine if the project has a significant impact warranting further modeling.

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[2] https://www.epa.gov/sites/production/files/2018-04/documents/sils_policy_guidance_document_final_signed_4-17-18.pdf

Concentrations of secondarily formed particulate and ozone were evaluated using the Modeling for Emissions Precursors (MERP) method described in Section 4.6.

Table 1-1

Constituents Modeled

HOC Reconfiguration Project

Valero Refining - Texas - West Plant Refinery, Corpus Christi

Constituent Name	CAS No.	Averaging Period	SIL (Deminimis)	SMC	PSD Increment	NAAQS/ SPL Standard	ESL
			µg/m³	*µg/m³*	*µg/m³*	*µg/m³*	*µg/m³*
Nitrogen Dioxide (NO_2)	10102-44-0	1-Hour	7.5	--	--	188	--
		Annual	1	14	25	100	--
Carbon Monoxide (CO)	630-08-0	1-Hour	2,000	--	--	40,000	--
		8-Hour	500	575	--	10,000	--
Particulate Matter less than 10 microns (PM_{10})	na	24-Hour	5	10	30	150	--
		Annual	1	--	17	*[1]*	--
$PM_{2.5}$	na	24-Hour	1.2	--	9	35	--
		Annual	0.3	--	4	12	--
Sulfur Dioxide (SO_2)	7446-09-5	30-min	20.4	--	--	1,021	--
		1-Hour	7.8	--	--	196	--
		3-Hour	25	--	--	1,300	--
		24-Hour	5	13	91	*[1]*	--
		Annual	1	--	10	*[1]*	--
Hydrogen Sulfide (H_2S)	7783-06-4	30-min (industrial)	0.4	*[2]*	--	20	--
		30-min (non-industrial)	0.04	*[2]*	--	2	--
Sulfuric Acid (H_2SO_4)	7664-93-9	1-hour	1.0	--	--	50	--
		24-hour	0.3	--	--	15	--
Ammonia (NH3)	7664-41-7	1-hour	--	--	--	--	170
		Annual	--	--	--	--	17
Refinery Light (e.g., Gasoline)	8006-61-9	1-hour	--	--	--	--	3,500
		Annual	--	--	--	--	350

[1] The annual PM_{10} NAAQS has been revoked (https://www.epa.gov/criteria-air-pollutants/naaqs-table), and the 24-hour and annual SO_2 NAAQS have been revoked (see 40 CFR 81.344) for Nueces County; therefore, these values are not shown.

[2] The hydrogen sulfide emissions do not trigger PSD review; therefore, the SMC analysis is not required and the values are not shown.

Section 2
Maps and Plot Plan

The West Plant is located in Corpus Christi, Nueces County, Texas. An area map is included as Figure 2-1 showing the property line. The property boundary shown is also the fence line. The "property line" near the dock were extended out to exclude the safety zone areas. This set up considers the operation safety requirements and is also consistent with previous modeling setup. The area map also includes an underlay of an aerial view retrieved using the Google™ Earth program and a 3,000-foot radius from the site. The Universal Transverse Mercator (UTM) coordinates are based on the North American Datum (NAD) of 1983.

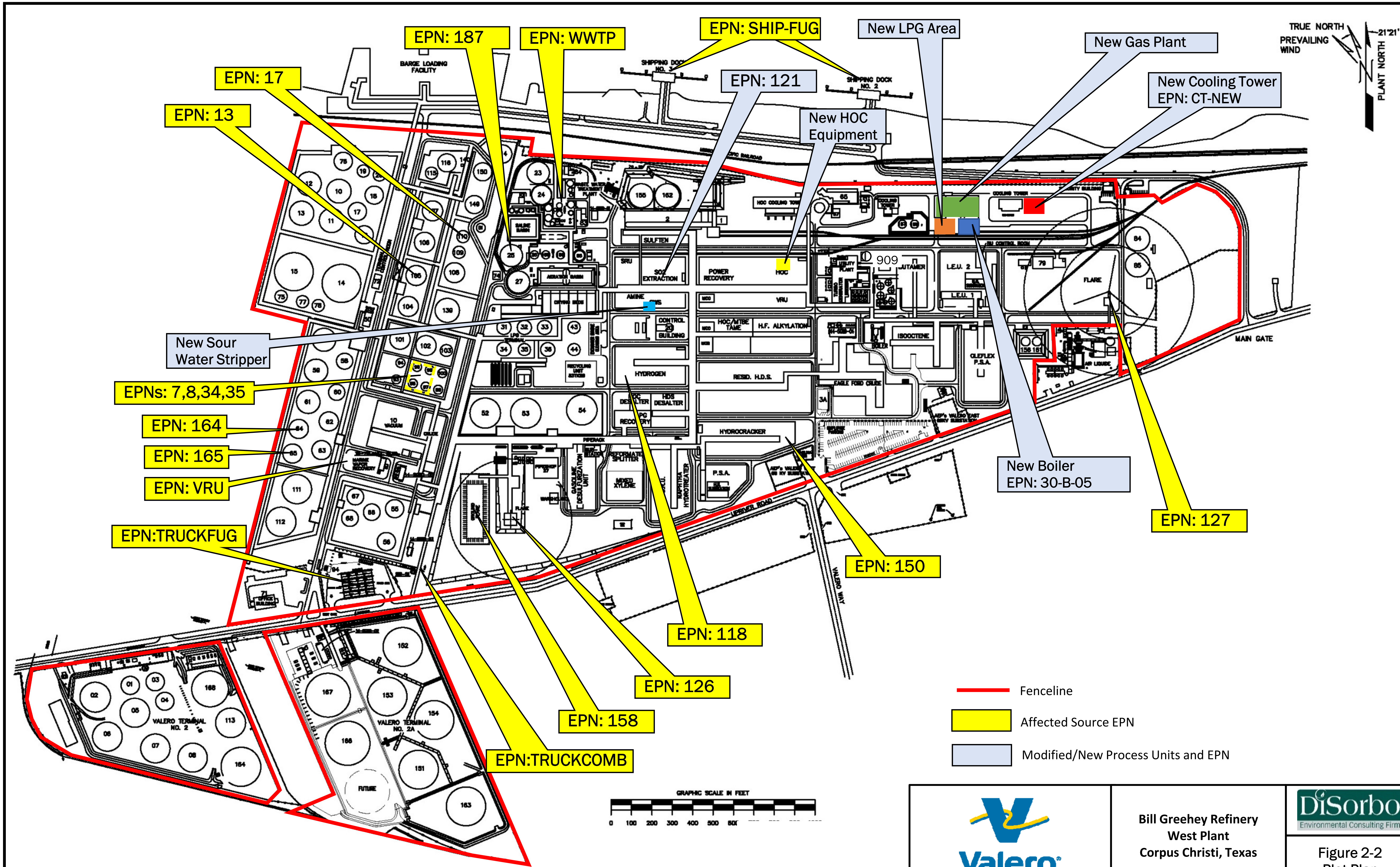
Figure 2-2 is a plot plan depicting the locations of the sources and building structures.

Given the large size of this site, an electronic plot plan, named "Valero West Plan Electronic Plot Plan.kmz", is provided to assist with the modeling audit process. The plot plan includes the sources, downwash structures, and boundaries used in the modeling. The files have been uploaded to the TCEQ ftp site.

Bill Greehey Refinery
West Plant
Corpus Christi, Texas

DiSorbo
Environmental Consulting Firm

Figure 2-1
Area Map



Valero

Bill Greehey Refinery
West Plant
Corpus Christi, Texas

DiSorbo
Environmental Consulting Firm

Figure 2-2
Plot Plan

VAL_000380

Section 3
Air Quality Monitoring Data

Ambient monitoring data is used in the PSD pre-application analysis to provide an evaluation of the existing ambient air quality in the area that the major source or major modification would affect. Ambient monitors were selected in areas with equal or greater point and non-point source emissions than the site.

Ambient monitoring data is also used in the NAAQS analysis to represent the contribution of area and mobile source emissions that are not included in the modeling as well as point sources that may or may not be included in the modeling.

The CO, PM_{10}, and 3-hour SO_2 impacts are below the SILs; therefore, no ambient monitoring data are required. Data are presented for NO_2, $PM_{2.5}$, 1-hour and 24-hour SO_2, and ozone. The criteria pollutant monitoring data discussed below was obtained from the TCEQ web site (https://www.tceq.texas.gov/cgi-bin/compliance/monops/yearly_summary.pl) and the EPA AirData website (https://www.epa.gov/outdoor-air-quality-data/download-daily-data). Ozone monitoring data was obtained from the TCEQ web site (https://www.tceq.texas.gov/cgi-bin/compliance/monops/8hr_4highest.pl). Table 3-1 lists the proposed ambient monitors selected for background concentration estimates for use in the NAAQS and Pre-application Analyses. Table 3- 2 provides additional justification for each of the monitor selections including nearby population and emissions. Table 3-3 shows the ozone monitoring data.

3.1 Pre-application Analysis

The EPA requires an analysis of the existing air quality in the area that would be affected by the project. EPA has developed significant monitoring concentrations (SMCs), that establish the levels at which a facility may need to conduct pre-construction ambient air quality monitoring for pollutants subject to PSD review. If the air quality dispersion modeling analyses show that maximum modeled ground-level concentrations from the project emissions increases in the Significance Analysis (i.e., project impacts) do not exceed the SMCs, pre-construction monitoring may be avoided. The only project impact above an SMC is the 24-hour SO_2 concentration. Ambient monitoring data from the nearby Corpus Christi West ambient monitor are proposed for use in lieu of conducting new pre-construction ambient monitoring. Table 3-1 summarizes this data, shows that it is complete and below the NAAQS, and Table 3-2 provides the justification for this data's use as representative of the site (i.e., the emissions are almost identical, since the monitor is so close to the project site).

The SMCs for $PM_{2.5}$ have been vacated[3], so pre-construction monitoring requirements must be addressed for $PM_{2.5}$ regardless of initial concentrations produced by the project. Ambient monitoring data from the nearby Donna Park ambient monitor are proposed to use in lieu of conducting new pre-construction ambient monitoring. Table 3-1 summarizes this data and Table 3-2 provides the justification for this data's use as representative of the site (i.e., the emissions are very similar, since the monitor is so close to the project site).

The remaining constituents have project impacts that are below the SMCs; therefore, pre-construction monitoring is not required.

3.2 NO_2 Ambient Monitoring Data

There are no ambient NO_2 monitors located in Nueces County; therefore, an ambient monitor from Lake Jackson (EPA Site ID 480391016) in Brazoria County was used as representative of the ambient air quality near the site. The 2019 data is incomplete. Therefore, the 2017, 2018 and 2020 data were used to develop the background value. Since the nearby industrial sources were explicitly modeled, the Lake Jackson monitor is valid to use although the total emissions near the monitor are less that the emissions near the site. Table 3-1 summarizes the monitoring data and Table 3-2 shows that the total emissions from point and non-point sources.

3.3 $PM_{2.5}$ Ambient Monitoring Data

For the $PM_{2.5}$ analysis, the Dona Park monitor (EPA Site ID 483550034) in Nueces County was selected because it is located very near the site (approximately 0.8 kilometer southeast) and has the same topography, meteorology and surrounding industrial emissions sources, which sufficiently demonstrates a representative monitor of the ambient air quality near the site. In addition, the nearby sources are explicitly included in the model (i.e., double counted), so this analysis is very conservative. Table 3-1 summarizes the monitoring data and Table 3-2 shows that the emissions from point and non-point sources comparison.

[3] https://www.cadc.uscourts.gov/internet/opinions.nsf/3964717CAD7BDA0085257AFB0055425F/$file/10-1413-1416378.pdf

3.4 SO_2 Ambient Monitoring Data

For the SO_2 analysis, the nearby Corpus Christi West monitor (EPA Site ID 483550025) was used to represent the background concentration near the site. This monitor was selected because it is located very near the site (less than 5 kilometers east) and has the same topography, meteorology and surrounding industrial emissions sources, which sufficiently demonstrates a representative monitor of the ambient air quality near the site. In addition, the nearby sources are explicitly included in the model (i.e., double counted), so this analysis is very conservative. Table 3-1 summarizes the monitoring data and Table 3-2 shows that the emissions from point and non-point sources comparison.

3.5 Ozone Ambient Monitoring Data

For ozone, the VOC and/or NO_X emission increases are greater than 100 tpy; therefore, an ozone analysis is required. The first step in this analysis is to gather ambient monitoring data.

To satisfy pre-construction monitoring requirements, an evaluation of every ozone monitor in Nueces County was conducted to demonstrate that the area is in compliance with the ozone standard. There are two currently active monitors in Nueces County. The Corpus Christi West monitor is the nearest ozone monitor to the site, less than 5 km from the closest property line. The Corpus Christi West monitor's close proximity to the site justifies its use as a representative ozone background concentration for the site. Table 3-3 shows the 2018 through 2020 fourth highest eight-hour ozone concentrations, as well as the three-year average for both ozone monitors located in Nueces County.

On October 1, 2015, EPA revised the NAAQS for ground-level ozone to 70 parts per billion (ppb). The highest three-year average for the representative Corpus Christi West monitor is 61 ppb, which is also the highest three-year average of all monitors in the area. This concentration is less than the NAAQS of 70 ppb; therefore, the area is in compliance with the current ozone NAAQS. Valero requests that this monitoring data be accepted in lieu of conducting pre-construction monitoring for ozone.

The ozone monitoring data was obtained from the TCEQ's CAMS Ozone Specific Reports (https://www.tceq.texas.gov/cgi-bin/compliance/monops/8hr_4highest.pl).

Table 3-1
Monitoring Data Summary
HOC Reconfiguration Project
Valero Refining - Texas - West Plant Refinery, Corpus Christi

Compound	Analysis	Local Site Name	AQS Code	Avg Period	Value Rank	Year	Observation Percent	Concentration (ppb)	Concentration ($\mu g/m^3$)	3-Year Average Concentration ($\mu g/m^3$)	Maximum Concentration ($\mu g/m^3$)
Nitrogen Dioxide (NO_2)	Pre-Application Analysis and NAAQS Background	Lake Jackson[1]	480391016	1-Hr	98% Maximum Daily 1-hr	2017	92%	19	35.5	33.9	
						2018	96%	18	34.2		
						2020	95%	17	32.0		
				Annual	Annual Average	2020	95%	2	4.5		4.5
Particulate Matter less than 2.5 microns ($PM_{2.5}$)	Pre-Application Analysis and NAAQS Background	Dona Park[2]	483550034	24-Hr	98th Percentile	2018	85%		18.1	19.6	
						2019	86%		20.4		
						2020	84%		20.4		
				Annual	Arithmetic Mean	2018	85%		7.8	7.7	
						2019	86%		8.1		
						2020	84%		7.3		
Sulfur Dioxide (SO_2)	Pre-Application Analysis and NAAQS Background	Corpus Christi West	483550025	1-hr	99th Percentile	2018	86%	4.5	11.8	14.5	
						2019	93%	8.9	23.3		
						2020	95%	3.2	8.4		
				24-Hr[1]	2nd Max Value	2020	95%	1.2	3.1		3.1

1. Monitoring data was obtained from TCEQ's CAMS Annual Summary website: https://www.tceq.texas.gov/cgi-bin/compliance/monops/yearly_summary.pl

2. Monitoring data was obtained from EPA AirData website: https://www.epa.gov/outdoor-air-quality-data/monitor-values-report

3. A substitution test has been conducted. The result indicates the use of this monitor is still valid.

Table 3-2

Ambient Monitor Justification

HOC Reconfiguration Project

Valero Refining - Texas - West Plant Refinery, Corpus Christi

Site Name	County	Population [1]	AQS Code	NO_X			$PM_{2.5}$			SO_2		
				tpy			*tpy*			*tpy*		
				Point Sources 10 km from location [2]	Non-Point Sources in County [3]	Total	Point Sources 10 km from location [2]	Non-Point Sources in County [3]	Total	Point Sources 10 km from location [2]	Non-Point Sources in County [3]	Total
<u>Permit Site</u>												
Valero Bill Greehey Refinery	Nueces	362,294	Site	4,662	10,033	14,695	1,061	2,716	3,777	654	224	878
<u>Monitor Locations</u>												
Lake Jackson	Brazoria	374,264	480391016	2,626	7,457	10,083						
Corpus Christi West	Nueces	362,294	483550025							653	224	877
Dona Park	Nueces	362,294	483550034				971	2,716	3,687			

[1] Data Source : U.S. Census Bureau (July 1, 2019 Estimate) https://factfinder.census.gov/faces/nav/jsf/pages/community_facts.xhtml

[2] Data Source : 2019statesum.xlsx, https://www.tceq.texas.gov/airquality/point-source-ei/psei.html

[3] Data Source : ftp://newftp.epa.gov/air/nei/2017/tier_summaries/

Table 3-3
Ozone Monitoring Data
HOC Reconfiguration Project
Valero Refining - Texas - West Plant Refinery, Corpus Christi

Ozone Monitor	AQS Code	2018 H-4-H (ppb)	2019 H-4-H (ppb)	2020 H-4-H (ppb)	Average (ppb)
Corpus Christi West	48-355-0025	61	62	61	**61**
Corpus Christi Tuloso	48-355-0026	60	58	64	**60**

NOTES:

1. *Data Source : https://www.tceq.texas.gov/cgi-bin/compliance/monops/8hr_4highest.pl*
2. *The average is truncated (rather than rounded) per 40 CFR Appendix P to Part 50 §2.3(d)(1).*

Section 4
Modeling Emissions Inventory

A copy of the emission changes summary is included in Appendix A. The source and parameter information that were used in the modeling analysis are presented and discussed below.

4.1 Source Parameter Justification

The project source parameters modeled for the significance analysis are shown on Tables 4-1 (flare diameters) and 4-2 (point and volume sources). The intermittent calculations for the project and site-wide sources are shown on Table 4-3. The project emission rates are summarized on Table 4-4. The site-wide source parameters and rates for the NAAQS, and PSD increment analyses are shown on Table 4-5.

Sources with vertical stacks (i.e., furnaces, boiler, VDU, flare, engines, and cooling tower) were modeled as point sources with actual stack parameters.

The flares were modeled with TCEQ recommended parameters with a temperature equal to 1273 K, an exit velocity equal to 20 meters per second, and a release height set to the height of the shroud for the ground flare and actual height for the elevated flares. The project flare effective flare diameters are calculated using the specified TCEQ equation and presented in Table 4-1.

Sources with vertical release stacks were modeled as point sources with actual parameters. In the event that stack parameters were not available, pseudo-point stack parameters were conservatively applied. The pseudo-point source parameters include a stack exit diameter of 0.001 meter, stack velocity of 0.001 meter per second, and exhaust temperature of zero Kelvin, per TCEQ guidance. An emission point with a temperature set to zero Kelvin, instructs the model to vary the temperature of the source with the ambient temperature from the meteorological data. The height of the pseudo-point source corresponds with the actual release height of the emissions.

Emission from fugitives, wastewater treatment, loading operation and tanks were modeled as volume sources with the horizontal and vertical extend of the volume set to the size of the volume of emissions. The release height was set to the average height of release.

4.2 Operating Scenarios

All emissions were conservatively modeled as occurring simultaneously.

4.3 Scaling Factors

The PM_{10} and $PM_{2.5}$ NAAQS have 24-hour average standards. For sources where the highest hourly emission rates of the permit application are not representative of the maximum 24-hour average rates, the modeled emission rates were adjusted to represent a 24-hour average emission rate.

The only emissions that were adjusted were the 24-hour PM_{10} and $PM_{2.5}$ emission rates for the emergency engines and firewater pump engines which were modeled with the assumption that no more than 1-hour of testing would occur in a given 24-hour period for each engine; therefore, a 24-hour average emission rate was calculated by multiplying the maximum hourly emission rate by 1/24.

4.4 NO_X to NO_2 Conversion

Per 40 CFR 51, Appendix W, §4.2.3.4.d, a Tier 2 application of the national default Ambient Ratio Method2 (ARM2) may be used to convert NO_X emission rates to NO_2 emission rates used in the modeling. For the NO_2 modeling, NO_X emission rates were adjusted using this ARM2 approach in the model with the default minimum and maximum ratios of 0.5 and 0.9, respectively.

4.5 Off-Property Sources

The current inventories of maximum allowable emission rates for stationary industrial sources and PSD increment consuming sources were obtained from the TCEQ Air Permits Allowable Database (APAD) for use in the NAAQS analyses and the PSD increment analyses, respectively.

From the September 30, 2014 EPA Memorandum[4], the following is noted: "U.S. EPA, 2010b briefly discusses the inclusion of nearby sources and the representativeness of ambient air quality data, while U.S. EPA, 2011 provides a significantly more detailed discussion. With respect to the number of nearby sources to be included in cumulative modeling, both memorandums cite Section 8.2.3 of Appendix W, which states, "the number of such [nearby] sources is expected to be small except in unusual situations" and point to the "significant concentration gradient in the vicinity of the source"

[4] https://www3.epa.gov/ttn/scram/guidance/clarification/NO2_Clarification_Memo-20140930.pdf

as the primary criterion for selection of these nearby sources. Valero included sources in the cumulative modeling that fall within 50 km from the site, which is very conservative, especially considering that the monitoring data is located very near the site which means the double-counting of emissions is very likely. If future refinements were required, these background concentrations could be refined.

The modeled off-property sources are shown in spreadsheet named "APAD.xlsx" uploaded to the TCEQ ftp site. Stack parameters and emission rates for certain sources are listed in the spreadsheets and were determined with information obtained from the TCEQ permitting files. The electronic files with information from the TCEQ permit files used to make the updates have also been uploaded to the TCEQ ftp site. In addition, missing stack parameters for other sources, where permitting files were not reviewed, conservative assumptions were made as noted in the APAD.xlsx spreadsheet. Emission sources which are identified as either a standby generator, a firewater pump, or MSS scenario have been modeled using the intermittent guidance.

As per TCEQ guidance, recent TCEQ permitting was reviewed to identify data not contained in APAD, such as recently permitted facilities, or shut down facilities. As a result of this review, the sources for RN110750965 have been included in the modeling. Stack parameters and emission rates for these sources are listed in the APAD.xlsx and were determined with information obtained from the TCEQ permitting files.

Except for Model ID 646030 in the 24-hour $PM_{2.5}$ modeling, the same off-property sources used for the NAAQS analysis were used for the PSD Increment modeling. In theory, the PSD Increment sources are a subset of the NAAQS sources because only sources that began emitting or have emission increases after the major source baseline date and the minor source baseline date are considered in the increment analysis; therefore, using the sources from the NAAQS analysis is conservative for the PSD Increment analysis. Model ID 646030, in Permit 4876 for RN10209898, was in existence prior to the $PM_{2.5}$ PSD baseline date and it is assumed that the source operated at maximum short-term rates.

Except as noted for a few sources, the 1-hour SO_2 APAD retrieval emission rates were used for the annual SO_2 PSD Increment modeling. Permit files were reviewed to obtain the annual allowable SO_2 emission rates for the few sources as noted in the APAD.xlsx spreadsheet.

4.6 Secondary PM and Ozone Analysis

$PM_{2.5}$ is either directly emitted from a source (primary emissions) or formed through chemical reactions with SO_2 and NO_X already in the atmosphere (secondary formation). EPA has not developed and/or formally recommended a near field model that includes the necessary chemistry algorithms to estimate secondary $PM_{2.5}$ impacts in an ambient air quality analysis. However, per EPA[5] and TCEQ[6] guidance, secondary formation of $PM_{2.5}$ needs to be addressed in an AQA. The guidance presents specific evaluation steps which are based on the amount of the project emissions.

The EPA has developed a tool and guidance on the use of Modeled Emission Rates for Precursors (MERPs) to address the contribution of secondary ozone and $PM_{2.5}$ impacts. TCEQ guidance document APDG 6232v4, Revised 11/19 is a simplified and state-specific version of EPA's memorandum from EPA dated April 30, 2019, with a subject, "Guidance on the Development of Modeled Emission Rates for Precursors (MERPs) as a Tier 1 Demonstration Tool for Ozone and $PM_{2.5}$ under the PSD Permitting Program." MERPs are used during the preliminary impact determination to demonstrate that projected impacts from a proposed source are less than a SIL value and would not cause or contribute to a violation of a NAAQS or PSD increment for that pollutant.

The MERP values used in the analysis on Table 4-6 are the values for the case listed for Harris County and the category corresponds to the project sources type and emissions. The use of the Harris County values is justified since the comparison of the emission sources in Nueces Counties are more similar to the emission sources in Harris County than any of the other counties provided in the MERP guidance. In addition, Harris County and Nueces Counties are similar in respect to temperatures, humidity, terrain, rural/urban nature of the area.

As shown on Table 4-6, both the 24-hour and annual $PM_{2.5}$ preliminary impacts for the project are greater than 1, which indicates a cumulative analysis for $PM_{2.5}$ is required. The cumulative impact analysis for 24-hour and annual $PM_{2.5}$ is discussed in Section 6.

Ozone is formed in the atmosphere from NO_X and VOC precursors. The MERP values used in the analysis on Table 4-6 are the values for the case listed for Harris County and the category corresponds to the project sources type and emissions. Since the MERPs analysis indicates the

[5] *Guidance for $PM_{2.5}$ Permit Modeling,* US EPA, April 30, 2019.
[6] *Air Quality Modeling Guidelines*, *APDG 6232v4, Revised 11/19.*

preliminary impact is below 1, a cumulative analysis is not required. In addition, the monitored ozone concentration near the site is less than 70 ppb (see Table 3-3) and therefore Tier 2 photochemical modeling is not required.

Table 4-1
Flare Effective Diameter Calculations
HOC Reconfiguration Project
Valero Refining - Texas - West Plant Refinery, Corpus Christi

$$D = \sqrt{\left(10^{-6} q_n\right)} \text{ and } q_n = q\left(1 - 0.048\sqrt{MW}\right)$$

where

q = gross heat release in cal/sec

MW = volume average molecular weight

D = effective stack exit diameter in meters

Flare/EPN	Model ID	MW	Heat Release	Heat Release	q_n	Effective Stack Exit Diameter	Effective Stack Exit Diameter
			BTU/hr	*cal/sec*	*cal/sec*	*meters*	*feet*
Project Modeling							
Main Flare/126	126	56	18,173,856	1,273,000	815,739	0.90	2.96
BUP Flare/127	127	56	18,173,856	1,273,000	815,739	0.90	2.96
Ground Flare/158	158	56	18,173,856	1,273,000	815,739	0.90	2.96
Sitewide Modeling							
126, 127, 158	158	72	4,500,000	315,206	186,824	0.43	1.42
126	MSSFLR	6.2	1,000,000,000	70,045,667	61,673,876	7.85	25.76

Table 4-2
Project Source Parameters
HOC Reconfiguration Project
Valero Refining - Texas - West Plant Refinery, Corpus Christi

Point Sources

EPN	Model ID	Source Description	X	Y	Base Elevation	Stack Height	Temp	Velocity	Diameter
			meters	*meters*	*meters*	*feet*	*F*	*fps*	*feet*
30-B-05	30_B_05	Boiler 30-B-05 (Routine)	649,645	3,077,940	8.9	60	300	47.87	7.83
30-B-05	30_B_05M	Boiler 30-B-05 (MSS)	649,645	3,077,940	8.9	60	300	47.87	7.83
HOC-PP-CT	HOCPPCT	New Cooling Tower	649,719	3,077,951	8.9	40	-469.57	24.00	24.00
121	121HOC	Heavy Oil Cracker (HOC) Belco Scrubber	649,347	3,077,978	9.0	225	185	69.10	14.00
121/30-B-05	MEROX	New MEROX Vent	649,645	3,077,940	8.9	60	300	47.87	7.83
124	124	WWTP Control Device	649,175	3,078,106	9.2	20	1275	7.30	3.70
118	118	Hydrogen Reformer Heater	649,222	3,077,857	8.9	121	350	49.40	11.90
150	150	HCU Heaters	649,415	3,077,685	9.0	131	350	39.50	6.30
121	121SRU	Sulfur Recovery	649,347	3,077,978	9.0	225	185	69.10	14.00
TRUCKCOMB	TRKVCU	Loading - Truck Combustor	648,838	3,077,708	6.7	35	1400	15.00	6.00
121	121MSS	SRU MSS	649,347	3,077,978	9.0	225	185	69.10	14.00
126	126	Main Flare	648,976	3,077,720	9.2	275	1832	65.60	2.96
127	127	BUP Flare	649,943	3,077,713	8.5	275	1832	65.60	2.96
158	158	Ground Flare	648,940	3,077,762	9.2	24	1832	65.60	2.96
114	C_114	Desalter Heater	649,241	3,077,780	9.0	100	350	56.30	3.67
PVCU	C_PVCU	LPG VCU	649,160	3,078,322	2.3	18	1000	22.00	5.90
162	C_162	Oleflex Heaters	649,715	3,077,645	8.9	213	350	17.50	10.00
121	C_121SRU	Sulfur Tanks to SRU	649,347	3,077,978	9.0	225	185	69.10	14.00

Volume Sources

EPN	Model ID	Source Description	X	Y	Base Elevation	Release Height	Sigma Y	Sigma Z
			meters	*meters*	*meters*	*feet*	*feet*	*feet*
21/22F	22_21F	HOC Unit Fugitives	649,484	3,077,928	9.1	15	11.63	13.95
42F	42F	Sour Wtr, Stripper Fugitives	649,289	3,078,010	9.0	15	11.63	13.95
FUG-CAP	FUGCAP	Piping Fugitives	649,628	3,077,970	9.1	15	34.88	13.95
CAS-HOCPP	CASHOCPP	HOC Gas Plant Wastewater Lift Statation	649,628	3,077,970	9.1	5	0.23	2.33

Table 4-3

Intermittent Emission Rates

HOC Reconfiguration Project

Valero Refining - Texas - West Plant Refinery, Corpus Christi

						NOx		SO2	
EPN	Model ID	Source Description	Duration	Frequency	Total Hours	Maximum Hourly Rate	Modeled Emission Rate [1]	Maximum Hourly Rate	Modeled Emission Rate[1]
			hours/event	*events/year*	*hours/year*	*lb/hr*	*lb/hr*	*lb/hr*	*lb/hr*
30-B-05	30_B_05M	Boiler 30-B-05 (MSS)	1	50	50.0	71.6	0.409		
16-P-04	16_P_04	Engine - 16-P-04	1	52	52.0	8.0	0.047	0.68	0.004
16-P-07	16_P_07	Engine - 16-P-07	1	52	52.0	9.7	0.058	0.82	0.005
16-P-11	16_P_11	Engine - 16-P-11	1	52	52.0	3.3	0.020	0.10	0.001
16-P-12	16_P_12	Engine - 16-P-12	1	52	52.0	3.3	0.020	0.10	0.001
16-P-13	16_P_13	Engine - 16-P-13	1	52	52.0	3.3	0.020	0.10	0.001
16-P-14	16_P_14	Engine - 16-P-14	1	52	52.0	3.3	0.020	0.10	0.001
83-P-136A	83P_136A	Engine 83-P-136A-EN	1	52	52.0	7.4	0.044	0.88	0.005
83-P-136B	83P_136B	Engine 83-P-136B-EN	1	52	52.0	7.4	0.044	0.88	0.005
MSS Caps	MSSFLR	Flaring	24	8	192.0	141.0	3.090	996.29	21.836
MSS Caps	MSSTANKS	Tank MSS	36	8	288.0	8.8	0.289		
MSS Caps	MSSSRU	SRU Startup/Shutdown	48	1	48.0	42.1	0.231	344.27	1.886
MSS Caps	MSSHOC	HOC Startup/Shutdown	30	1	30.0	356.8	1.222	85.39	0.292

[1] The "Modeled Emission Rate" is the "Maximum Hourly Rate" times the "Total Hours" divided by 8760.

Table 4-4
Project Emission Rate Changes
HOC Reconfiguration Project
Valero Refining - Texas - West Plant Refinery, Corpus Christi

EPN	Model ID	Source Description	NOx	NOx	CO	PM_{10}	PM_{10}	$PM_{2.5}$	$PM_{2.5}$	SO_2	SO2_PL	SO2_3	SO2_24	SO_2	H2S	H2SO4	UNIT_ST
			lb/hr	*tpy*	*lb/hr*	*lb/hr*	*tpy*	*lb/hr*	*tpy*	*lb/hr*	*lb/hr*	*lb/hr*	*lb/hr*	*tpy*	*lb/hr*	*lb/hr*	
30-B-05	30_B_05	Boiler 30-B-05 (Routine)	7.16	30.14	33.48	3.56	14.16	3.56	14.16	7.70	7.70	7.70	7.70	21.15	---	---	1.00
30-B-05	30_B_05M	Boiler 30-B-05 (MSS)	0.41	---	167.39	---	---	---	---	---	---	---	---	---	---	---	---
HOC-PP-CT	HOCPPCT	New Cooling Tower	---	---	---	0.18	0.81	0.00	0.01	---	---	---	---	---	---	---	1.00
121	121HOC	Heavy Oil Cracker (HOC) Belco Scrubber	39.06	171.09	35.73	47.15	206.51	47.15	206.51	85.18	85.18	85.18	85.18	373.11	---	38.48	1.00
121/30-B-05	MEROX	New MEROX Vent	---	---	---	---	---	---	---	3.86	3.86	3.86	3.86	16.91	0.001	---	1.00
124	124	WWTP Control Device	0.10	0.42	0.40	---	---	---	---	0.01	0.01	0.01	0.01	0.03	---	---	---
118	118	Hydrogen Reformer Heater	1.51	6.60	0.93	0.19	0.83	0.19	0.83	0.02	0.02	0.02	0.02	0.09	---	---	---
150	150	HCU Heaters	7.43	32.55	5.53	0.53	2.33	0.53	2.33	1.79	1.79	1.79	1.79	7.82	---	---	---
121	121SRU	Sulfur Recovery	0.85	3.70	3.86	1.92	8.40	1.92	8.40	1.70	1.70	1.70	1.70	7.45	0.11	---	---
TRUCKCOMB	TRKVCU	Loading - Truck Combustor	2.36	10.36	3.92	0.08	0.36	0.08	0.36	0.01	0.01	0.01	0.01	0.03	---	---	---
121	121MSS	HOC Startup	1.59	6.95	9.27	0.35	1.55	0.35	1.55	0.38	0.38	0.38	0.38	1.66	---	---	---
MSS Caps [1]	126	Main Flare	0.01	0.03	0.03	---	---	---	---	0.0001	0.0001	0.0001	0.0001	0.0004	0.000001	---	1.00
	127	BUP Flare														---	1.00
	158	Ground Flare														---	1.00
114	C_114	Desalter Heater	-0.77	-3.37	3.51	0.15	0.66	0.15	0.66	0.87	0.87	0.87	0.87	3.82	---	---	---
PVCU	C_PVCU	LPG VCU	1.09	4.76	0.93	0.06	0.25	0.06	0.25	0.02	0.02	0.02	0.02	0.08	---	---	---
162	C_162	Oleflex Heaters	8.12	35.58	14.07	0.74	3.26	0.74	3.26	3.54	3.54	3.54	3.54	15.52	---	---	---
121	C_121SRU	Sulfur Tanks to SRU	0.002	0.01	0.002	0.002	0.01	0.002	0.01	0.002	0.002	0.002	0.002	0.01	---	---	---
21/22F	22_21F	HOC Unit Fugitives	---	---	---	---	---	---	---	---	---	---	---	---	0.004	---	---
42F	42F	Sour Wtr, Stripper Fugitives	---	---	---	---	---	---	---	---	---	---	---	---	0.0004	---	---
FUG-CAP	FUGCAP	Piping Fugitives	---	---	---	---	---	---	---	---	---	---	---	---	0.01	---	1.00
CAS-HOCPP	CASHOCPP	HOC Gas Plant Wastewater Lift Statation	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1.00

[1] The maximum unit impact flare (Ground flare; Model ID: 158) was used in the constituent specific modeling.

Table 4-5

Site-wide Parameters and Emission Rates

HOC Reconfiguration Project

Valero Refining - Texas - West Plant Refinery, Corpus Christi

Permit/PBR	EPN	Model ID	Source Description	Note	X	Y	Base Elevation	Stack Height	Temp	Velocity	Diameter	NO_2 (1-hr)	NO_2 (Annual)	$PM_{2.5}$ (24-hr) (NAAQS)	$PM_{2.5}$ (24-hr) (PSD Increment) [4], [5], [6], [7]	$PM_{2.5}$ (Annual) (NAAQS)	$PM_{2.5}$ (Annual) (PSD Increment) [8]	SO_2 (1-hr) (NAAQS)	SO_2 (1-hr) (SPL)	SO_2 (Annual)	H_2SO_4 (1-hr)
					meters	*meters*	*meters*	*feet*	*°F*	*fps*	*feet*	*lb/hr*	*tpy*	*lb/hr*	*lb/hr*	*tpy*	*tpy*	*lb/hr*	*lb/hr*	*tpy*	*lb/hr*
38754	30-B-05	30_B_05	Boiler 30-B-05 (Routine)		649,645	3,077,940	8.89	60	300	47.87	7.8	7.16	30.14	3.56	3.56	14.16	14.16	7.70	7.70	21.15	
38754	30-B-05	30_B_05M	Boiler 30-B-05 (MSS)	[3]	649,645	3,077,940	8.89	60	300	47.87	7.8	0.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
38754	HOC-PP-CT	HOCPPCT	New Cooling Tower		649,719	3,077,951	8.86	40	-469.57	24.00	24.0	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	
38754	121/30-B-05	MEROX	New MEROX Vent		649,645	3,077,940	8.89	60	300	47.87	7.8	0.00	0.00	0.00	0.00	0.00	0.00	3.86	3.86	16.91	
38754	1	1	Heater - Crude Heater (01-H-01)		648,858	3,077,931	4.64	121	350	25.5	6.9	9.72	19.24	1.21	1.21	4.00	4.00	2.50	2.50	5.71	
38754	74	74	Vacuum Heater		648,842	3,077,901	4.59	111	740	33.2	5.6	5.98	26.21	0.74	0.74	3.26	3.26	1.37	1.37	4.13	
38754	114	114	Heater - Desalter Heater (11-H-01)		649,241	3,077,780	8.96	100	350	56.3	3.7	3.96	17.34	0.74	0.74	3.23	3.23	1.52	1.52	4.60	
38754	115	115	HDS Heaters		649,479	3,077,746	8.93	90	350	29.5	6.1	9.70	42.07	1.20	1.20	5.22	5.22	2.49	2.49	7.45	
38754	116	116	Heater - HDS Pre-Heater (12-H-02)		649,315	3,077,772	8.93	50	770	35.3	3.3	2.36	8.28	0.15	0.15	0.51	0.51	0.30	0.30	0.73	
38754	117	117	Heater - Alky Frac. Reb. (31-H-01)		649,489	3,077,810	8.95	90	350	69.0	3.5	5.64	19.86	1.17	1.17	4.11	4.11	2.41	2.41	5.86	
38754	118	118	Hydrogen Reformer Heater		649,222	3,077,857	8.94	121	350	49.40	11.9	70.21	284.40	8.72	8.72	35.80	35.80	44.53	44.53	122.64	
38754	119	119	Heater - Sulften Heater (46-H-01)		649,319	3,078,050	8.99	94	350	8.0	4.2	2.62	5.21	0.16	0.16	0.32	0.32	0.34	0.34	0.63	
38754	120	120	Heater - Butamer Heater (36-H-01)		649,708	3,077,865	8.82	81	350	5.2	4.2	2.00	4.30	0.12	0.12	0.26	0.26	0.26	0.26	0.41	
38754	121	121HOC	HOC Belco Scrubber		649,347	3,077,978	9.02	225	185	69.10	14.0	384.12	473.81	140.00	11.50	569.40	221.90	219.22	219.22	420.12	49.00
38754	121	121SRU	Sulfur Recovery		649,347	3,077,978	9.02	225	185	69.10	14.0	54.64	239.31	24.72	24.72	98.38	98.38	191.32	191.32	837.99	
38754	124	124	WWTP Control Device		649,175	3,078,106	9.18	20	1275	7.30	3.7	0.45	1.76	0.00	0.00	0.00	0.00	0.03	0.03	0.13	
38754	131	131	Heater - Crude Preflash (01-H-02)		648,844	3,077,912	4.61	30	350	29.6	3.5	1.77	6.29	0.13	0.13	0.49	0.49	0.27	0.27	0.64	
38754	132	132	Heater - Crude Stabilizer (01-H-03)		648,838	3,077,913	4.56	77	955	21.1	3.0	0.48	2.06	0.04	0.04	0.15	0.15	0.07	0.07	0.22	
38754	150	150	HCU Heater		649,415	3,077,685	8.97	131	350	39.50	6.3	12.19	12.72	1.51	1.51	0.95	0.95	3.13	3.13	8.63	
38754	151	151	Heater - NHU Heater (48-H-01)		649,238	3,077,637	9.16	116	660	16.0	4.0	3.90	17.08	0.29	0.29	1.27	1.27	0.60	0.60	1.81	
38754	152	152	CRU Heater		649,204	3,077,650	9.09	213	350	26.4	11.0	39.31	133.06	4.18	4.18	14.16	14.16	9.80	9.80	22.69	
38754	153	153	Heater - HR Boiler (30-B-02)		649,548	3,077,865	8.90	50	350	32.5	7.0	22.56	82.34	2.10	1.32	5.51	5.51	4.34	4.34	10.66	
38754	162	162	Oleflex Heater		649,715	3,077,645	8.94	213	350	17.5	10.0	23.34	65.75	2.90	2.90	11.62	11.62	5.99	5.99	16.57	
38754	172	172	Heater - RSU Heater (49-H-71)		649,198	3,077,742	8.99	147	350	42.7	4.25	3.96	15.26	0.49	0.49	1.90	1.90	1.02	1.02	2.70	
38754	195	195	Heater - GDU Charge Heater (52-H- 01)		649,109	3,077,697	9.16	173	531	19.2	9.0	5.80	14.69	1.23	1.23	4.61	4.61	2.55	2.55	6.57	
38754	122	122CT_1	Cooling Tower - HOC	[1]	649,510	3,078,035	9.08	75	-475	30.0	32.0	0.00	0.00	0.066	-0.263	0.245	0.25	0.00	0.00	0.00	
38754	122	122CT_2	Cooling Tower - HOC	[1]	649,519	3,078,031	9.05	75	-475	30.0	32.0	0.00	0.00	0.066	-0.263	0.245	0.25	0.00	0.00	0.00	
38754	122	122CT_3	Cooling Tower - HOC	[1]	649,529	3,078,028	9.04	75	-475	30.0	32.0	0.00	0.00	0.066	-0.263	0.245	0.25	0.00	0.00	0.00	
38754	122	122CT_4	Cooling Tower - HOC	[1]	649,537	3,078,024	9.02	75	-475	30.0	32.0	0.00	0.00	0.066	-0.263	0.245	0.25	0.00	0.00	0.00	
38754	122	122CT_5	Cooling Tower - HOC	[1]	649,547	3,078,021	9.02	75	-475	30.0	32.0	0.00	0.00	0.066	-0.263	0.245	0.25	0.00	0.00	0.00	
38754	122	122CT_6	Cooling Tower - HOC	[1]	649,556	3,078,017	9.07	75	-475	30.0	32.0	0.00	0.00	0.066	-0.263	0.245	0.25	0.00	0.00	0.00	
38754	122	122CT_7	Cooling Tower - HOC	[1]	649,565	3,078,014	9.01	75	-475	30.0	32.0	0.00	0.00	0.066	-0.263	0.245	0.25	0.00	0.00	0.00	
38754	122	122CT_8	Cooling Tower - HOC	[1]	649,574	3,078,010	8.96	75	-475	30.0	32.0	0.00	0.00	0.066	-0.263	0.245	0.25	0.00	0.00	0.00	
38754	123	123CT_1	Cooling Tower - Alky	[1]	649,684	3,077,965	8.73	60	-475	30.0	28.0	0.00	0.00	0.063	0.063	0.18	0.18	0.00	0.00	0.00	
38754	123	123CT_2	Cooling Tower - Alky	[1]	649,693	3,077,960	8.88	60	-475	30.0	28.0	0.00	0.00	0.063	0.063	0.18	0.18	0.00	0.00	0.00	
38754	123	123CT_3	Cooling Tower - Alky	[1]	649,702	3,077,956	8.91	60	-475	30.0	28.0	0.00	0.00	0.063	0.063	0.18	0.18	0.00	0.00	0.00	
38754	16-P-04	16_P_04	Engine - 16-P-04	[2] [9]	649,567	3,077,680	8.96	7	600	0.0033	0.0033	0.0475	0.21	0.030	0.030	0.02	0.02	0.0040	0.047	0.02	
38754	16-P-07	16_P_07	Engine - 16-P-07	[2] [9]	649,595	3,077,662	8.96	7	600	0.0033	0.0033	0.0575	0.15	0.037	0.037	0.01	0.01	0.0049	0.058	0.01	
38754	16-P-11	16_P_11	Engine - 16-P-11	[2] [9]	649,978	3,077,684	8.26	7	894	135.0	0.67	0.0197	0.09	0.005	0.005	0.01	0.01	0.0006	0.020	0.01	

Table 4-5

Site-wide Parameters and Emission Rates

HOC Reconfiguration Project

Valero Refining - Texas - West Plant Refinery, Corpus Christi

Permit/PBR	EPN	Model ID	Source Description	Note	X	Y	Base Elevation	Stack Height	Temp	Velocity	Diameter	NO_2 (1-hr)	NO_2 (Annual)	$PM_{2.5}$ (24-hr) (NAAQS)	$PM_{2.5}$ (24-hr) (PSD Increment) [4], [5], [6], [7]	$PM_{2.5}$ (Annual) (NAAQS)	$PM_{2.5}$ (Annual) (PSD Increment) [8]	SO_2 (1-hr) (NAAQS)	SO_2 (1-hr) (SPL)	SO_2 (Annual)	H_2SO_4 (1-hr)
					meters	*meters*	*meters*	*feet*	*°F*	*fps*	*feet*	*lb/hr*	*tpy*	*lb/hr*	*lb/hr*	*tpy*	*tpy*	*lb/hr*	*lb/hr*	*tpy*	*lb/hr*
38754	16-P-12	16_P_12	Engine - 16-P-12	[2] [9]	649,981	3,077,690	8.26	7	894	135.0	0.67	0.0197	0.09	0.005	0.005	0.01	0.01	0.0006	0.020	0.01	
38754	16-P-13	16_P_13	Engine - 16-P-13	[2] [9]	649,983	3,077,697	8.26	7	894	135.0	0.67	0.0197	0.09	0.005	0.005	0.01	0.01	0.0006	0.020	0.01	
38754	16-P-14	16_P_14	Engine - 16-P-14	[2] [9]	649,985	3,077,703	8.26	7	894	135.0	0.67	0.0197	0.09	0.005	0.005	0.01	0.01	0.0006	0.020	0.01	
38754	167-CT	167CT_1	Cooling Tower - BUP	[1]	649,862	3,077,889	8.37	56	-475	30.0	35.0	0.00	0.00	0.335	0.335	1.44	1.44	0.00	0.00	0.00	
38754	167-CT	167CT_2	Cooling Tower - BUP	[1]	649,878	3,077,883	8.38	56	-475	30.0	35.0	0.00	0.00	0.335	0.335	1.44	1.44	0.00	0.00	0.00	
38754	1CT	1CT_1	Cooling Tower - Crude	[1]	648,941	3,077,915	5.27	30	-475	30.0	6.0	0.00	0.00	0.030	0.030	0.11	0.11	0.00	0.00	0.00	
38754	1CT	1CT_2	Cooling Tower - Crude	[1]	648,946	3,077,911	5.61	30	-475	30.0	6.0	0.00	0.00	0.030	0.030	0.11	0.11	0.00	0.00	0.00	
38754	21 BH	21BH	Magnacat Unit		649,444	3,077,965	9.06	52.8	-475	0.0033	0.0033	0.00	0.00	0.18	0.18	0.60	0.60	0.00	0.00	0.00	
38754	30-B-04	30_B_04	Boiler 30-B-04		649,600	3,077,800	8.87	60	400	57.0	8.0	8.25	20.02	4.10	4.10	9.95	9.95	8.65	8.65	14.47	
38754	49-H-90	49_H_90	Heater - C7 Splitter Reb. (49-H-90)		649,186	3,077,705	9.00	160	350	14.5	5.0	4.25	15.46	0.79	0.79	3.01	3.01	1.64	1.64	4.29	
38754	83-P-136A	83P_136A	Engine 83-P-136A-EN	[2] [9]	649,252	3,078,160	9.26	10	600	0.0030	0.0030	0.0441	0.19	0.016	0.02	0.01	0.01	0.0052	0.044	0.02	
38754	83-P-136B	83P_136B	Engine 83-P-136B-EN	[2] [9]	649,253	3,078,164	9.26	10	600	0.0030	0.0030	0.0441	0.19	0.016	0.02	0.01	0.01	0.0052	0.044	0.02	
38754	TRUCKCOMB	TRKVCU	Loading - Truck Combustor		648,838	3,077,708	6.70	35	1400	15.00	6.0	7.64	11.38	0.23	0.23	0.34	0.34	0.02	0.02	0.03	
38754	126, 127, 158	158	Routine Flare Cap		648,957	3,077,790	9.20	24	1832	65.6	1.42	23.04	20.77	0.00	0.00	0.00	0.00	3.55	3.55	10.43	
38754	MSS CAPS	MSSFLR	Flaring	[2]	648,976	3,077,720	9.18	275	1832	65.62	25.76	3.090	11.07		0.00		0.00	21.836	996.29	19.48	
38754/13	MSS CAPS	MSSTK4	Tank MSS	[3]	648,701	3,077,843	4.86	12.75	1400	23.80	5.10	0.289	0.856	0.153	0.15	0.045	0.05	0.022	0.022	0.01	
38754/13	MSS CAPS	MSSTK7	Tank MSS	[3]	648,832	3,078,016	4.42	12.75	1400	23.80	5.10	0.289	0.856	0.153	0.15	0.045	0.05	0.022	0.022	0.01	
38754/13	MSS CAPS	MSSTK11	Tank MSS	[3]	649,146	3,078,272	4.33	12.75	1400	24.00	5.10	0.289	0.856	0.153	0.15	0.045	0.05	0.022	0.022	0.01	
38754/13	MSS CAPS	MSSTK12	Tank MSS	[3]	649,196	3,078,202	9.11	12.75	1400	23.80	5.10	0.289	0.856	0.153	0.15	0.045	0.05	0.022	0.022	0.01	
38754	MSS CAPS	MSSSRU	SRU Startup/Shutdown	[2]	649,347	3,077,978	9.02	225.00	185.00	69.10	14.00	0.231	2.66	0.64	0.64	0.03	0.03	1.886	344.27	16.44	
38754	MSS CAPS	MSSHOC	HOC Startup/Shutdown	[2]	649,347	3,077,978	9.02	225.00	185.00	69.10	14.00	1.222	5.35	79.52	0.00	1.19	1.19	0.292	85.39	1.28	
38754	MSS CAPS	MSSPB	Painting/Blasting		649,173	3,077,732	8.99	10	-460	0.0033	0.0033			0.36	0.36	0.12	0.12				
38754	MSS CAPS	MSSDECOK	Heater Decoking		648,865	3,077,905	4.7	20	500	141	0.67	0.01	0.03	0.08	0.08	0.01	0.01	1.57	1.57	0.09	
20740	163	163	Boiler 30-B-03		649,626	3,077,895	8.69	126	350	27.2	4.5	22.21	97.28	2.07	0.99	9.06	9.06	4.27	4.27	12.91	
20992	49-H-91	49_H_91	C8 Splitter Reboiler		649,194	3,077,724	8.99	168	350	65.2	6.75	6.13	26.85	1.14	1.14	5.00	5.00	2.36	2.36	10.35	
106965	900	900	Process Heater		649,611	3,077,686	8.96	180	300	13.8	11.6	12.03	10.13	2.21	2.21	7.45	7.45	8.62	8.62	10.76	
106965	901	901	Cooling Tower		649,894	3,077,878	8.41	60	-475	30.0	35.0	0.00	0.00	0.03	0.03	0.12	0.12	0.00	0.00	0.00	
109543	909	909	Vapor Combustion Unit		649,495	3,078,164	2.19	60	1600	50.0	12.0	12.68	37.99	0.63	0.63	1.89	1.89	3.26	3.26	4.04	
146600	TKVCU	TKVCU	West Plant Storage Tank VCU		648,850	3,077,958	4.52	35	1400	30.0	7.7	3.81	16.65	0.19	0.19	0.83	0.83	0.01	0.01	0.06	
38754	168	168	Oleflex CCR		649,743	3,077,685	8.93	100	350	29.6	3.5										0.01
155846	PVCU	C_PVCU	LPG VCU		649,160	3,078,322	6.70	18	1000	22.00	5.9	1.09	4.76	0.06	0.06	0.25	0.25	0.02	0.02	0.08	

1. Total allowable emission rate for the cooling towers was divided equally among the number of cells for the cooling tower.
2. See Table 4-3 for 1-hour NO_2 and SO_2 emission rate calculation using intermittent guidance.
3. See Table 4-3 for 1-hour NO_2 emission rate calculation using intermittent guidance.
4. For the PSD Increment modeling, the short-term PM2.5 emission rate increase for Model ID 121HOC calculated using the maximum coke burn rate for the period of 2008 - 2009 (128.5 MLBH) and the proposed maximum coke burn rate (140 MLBH).
5. For the PSD Increment modeling, the short-term PM2.5 emission rate increase for Model IDs 153 and 163 are calculated by subtracting the 2008/2009 average annual emission rate from the permit allowable emission rate and converting to a pound per hour emission rate.
6. After the PM2.5 baseline date the cooling tower drift eliminators were upgraded to reduce particulate matter emissions; therefore, the emission reduction was modeled for the 24-hour PSD Increment modeling.
7. For the PSD Increment modeling, the short-term PM2.5 emission rate for Model ID MSSHOC was assumed to be zero since the HOC was in operation prior to the PSD Increment baseline date for PM2.5.
8. For the PSD Increment modeling, the annual PM2.5 emission rate for Model ID 121HOC is based on the proposed allowable emission rate minus the average 2008/2009 actual emission rate (569.4 tpy - 347.5tpy)
9. Engine testing occurs 1 hour per day; therefore, the maximum 1-hour emission rate is divided by 24 to obtain the average 24-hour emission rate.

Table 4-6

Secondary Impact Analysis

HOC Reconfiguration Project

Valero Refining - Texas - West Plant Refinery, Corpus Christi

Ozone

Averaging Period	NOx Increase (tpy)		NOx MERP (tpy)				VOC Increase (tpy)		VOC MERP (tpy)				Preliminary Impact
8-Hour	252.34	/	639	=	0.39	+	81.2	/	3817	=	0.02	=	0.42

	Preliminary Impact	
8-Hour	0.42	Result is less than 1 - Cumulative impact is not required

PM2.5 - NAAQS

Averaging Period	Direct PM2.5 Impact (µg/m3)		PM2.5 SIL (µg/m3)		PM2.5		NOx Increase (tpy)		NOx MERP (tpy)		NOx		SO2 Increase (tpy)		SO2 MERP (tpy)		SO2		Preliminary Impact
24-Hour	4.0	/	1.2	=	3.33	+	252.34	/	15274	=	0.02	+	428.23	/	47789	=	0.01	=	3.36
Annual	0.8	/	0.2	=	4.01	+	252.34	/	47789	=	0.005	+	428.23	/	10387	=	0.041	=	4.05

	Preliminary Impact	
24-Hour	3.36	Result is greater than 1 - Cumulative impact is required
Annual	4.05	Result is greater than 1 - Cumulative impact is required

Secondary Value used for Cumulative Analysis

Averaging Period	NOx Increase (tpy)		NOx MERP (tpy)		NOx		SO2 Increase (tpy)		SO2 MERP (tpy)		SO2				PM2.5 SIL (µg/m3)		
24-Hour	252.34	/	15,274	=	0.02	+	428.23	/	47,789	=	0.01	=	0.03	*	1.2	=	0.03
Annual	252.34	/	47,789	=	0.01	+	428.23	/	10,387	=	0.04	=	0.05	*	0.2	=	0.009

Table 4-6

Secondary Impact Analysis

HOC Reconfiguration Project

Valero Refining - Texas - West Plant Refinery, Corpus Christi

PM2.5 - Increment

Averaging Period	Direct PM2.5 Impact (µg/m3)		PM2.5 SIL (µg/m3)		PM2.5		NOx Increase (tpy)		NOx MERP (tpy)		NOx		SO2 Increase (tpy)		SO2 MERP (tpy)		SO2		Preliminary Impact
24-Hour	4.66	/	1.2	=	3.88	+	252.34	/	15274	=	0.02	+	428.23	/	47789	=	0.01	=	3.91
Annual	0.89	/	0.2	=	4.43	+	252.34	/	47789	=	0.01	+	428.23	/	10387	=	0.04	=	4.47

	Preliminary Impact	
24-Hour	3.91	Result is greater than 1 - Cumulative impact is required
Annual	4.47	Result is greater than 1 - Cumulative impact is required

Secondary Value used for Cumulative Analysis

Averaging Period	NOx Increase (tpy)		NOx MERP (tpy)		NOx		SO2 Increase (tpy)		SO2 MERP (tpy)		SO2				PM2.5 SIL (µg/m3)		
24-Hour	252.34	/	15,274	=	0.02	+	428.23	/	47,789	=	0.01	=	0.03	*	1.2	=	0.03
Annual	252.34	/	47,789	=	0.01	+	428.23	/	10,387	=	0.04	=	0.05	*	0.2	=	0.009

MERP Values and Basis

	Ozone		24-Hour PM2.5		Annual PM2.5	
	NOX	VOC	NOX	SO2	NOX	SO2
MERP (tpy):	639	3,817	15,274	1,493	47,789	10,387
Basis:	Harris County 500 tpy High	Harris County 1000 tpy High	Harris County 500 tpy High	Harris County 500 tpy High	Harris County 500 tpy High	Harris County 500 tpy High

Section 5
Modeling and Modeling Techniques

Modeling methodology generally followed the procedures outlined in the applicable EPA and/or TCEQ guidance documents, including the following: *Environmental Protection Agency (EPA) Guidelines on Air Quality Models (GAQM)* and *Draft TCEQ Air Quality Modeling Guidelines (AQMG) APDG 6232v4, Revised 11/19*.

The model parameters specified for the modeled location, such as meteorological data, and receptor grid are discussed below. The remaining modeled parameters were determined by the EPA recommended "regulatory default option."

5.1 Dispersion Model Selection

The selection of the dispersion model is based on EPA guidelines, considerations of the local terrain, and the emission source characteristics. AERMOD is currently the preferred dispersion model recommended by the EPA and TCEQ for complex source configurations and emission units subject to downwash. AERMOD was used for the modeling analysis primarily because it is the most up-to-date near-field dispersion model currently available.

5.2 Modeling Procedures

The air quality dispersion modeling analyses for the criteria pollutants were performed in two major sub-steps: the Preliminary (Significance) Analysis and the Cumulative (Full Impact) Analysis. Per TCEQ and EPA Guidance, the Significance Analysis considers the emissions associated only with the proposed project to determine whether it will have a significant impact upon the surrounding area. The modeled ground-level concentrations were compared to the corresponding Significant Impact Levels (SILs) to determine whether any modeled ground-level concentrations at any receptor locations are greater than the SIL. The results are discussed in Section 6.

If the Significance Analysis predicts modeled ground-level concentrations for a particular pollutant and averaging period that are greater than the applicable SIL, a Full Impact Analysis was performed within the impact area. The Full Impact Analysis includes a NAAQS analysis and a PSD increment analysis, as indicated on Table 1-1.

Per EPA and TCEQ guidance, impacts from the 1-hour NO_2, 1-hour SO_2, 24-hour and annual $PM_{2.5}$ significance analyses were reported as the highest of the five-year average of the maximum modeled concentration predicted each year at each modeled receptor. All other pollutants and averaging periods are reported as the highest first high (H1H) modeled concentration at each receptor. The Significance Analysis determines whether the site is required to conduct further analyses for the modeled pollutant and defines the area of impact (AOI) within which a Full Impact Analysis is required.

The Full Impact Analysis addresses NAAQS and PSD increments, where applicable. The modeling results, discussed in detail in Section 6, indicate that the maximum concentrations of CO and PM_{10} for all applicable averaging periods and 3-hour SO_2 are all below the SILs. Therefore, a Full Impact Analysis was conducted for all applicable other pollutants.

The NAAQS are maximum concentration limits measured in terms of the total concentration of a pollutant in the atmosphere. For the NAAQS analyses, all off-property inventory emissions sources located within a 50 km radius from the site, were modeled along with all on-property sources to demonstrate compliance with the NAAQS. The ROI is the farthest distance from the center of the proposed emission sources to the furthest receptor in the AOI. The development of the off-property inventory sources is described in Section 4.5. Background concentrations were added to the maximum modeled ground-level concentrations for comparison with the NAAQS, as described in Section.

Per EPA guidance, the 1-hour NO_2 NAAQS impact was reported as the five-year average of the 98th percentile of the annual distribution of the maximum daily 1-hour predicted concentrations. Impacts of the annual averaging period of NO_2 were reported as the highest value per receptor of the five years modeled.

For 24-hour $PM_{2.5}$, the maximum three-year average of the 98th percentile of the annual distribution of the maximum 24-hour predicted concentrations (or H8H predicted concentration) determined for each receptor was reported. For annual $PM_{2.5}$, the highest five-year average of the predicted concentrations from all receptors was reported.

For 1-hour SO_2, the maximum five-year average of the 99th percentile of the annual distribution of the maximum daily 1-hour predicted concentrations (or H4H predicted concentration) determined for each receptor was reported. For 3-hour SO_2, the maximum H2H predicted concentration from all receptors was reported.

A PSD increment is the maximum increase in ambient concentrations allowed to occur above a baseline concentration for a pollutant. For the PSD increment analysis, except as noted in Section 4.5, all off property emission sources within a 50 km radius from the site were modeled with Valero sources to demonstrate compliance with Class II PSD increment Standards, which is very conservative since many of these off-property sources are not increment consuming. The development of the off-property inventory sources is described in Section 4.5.

For annual NO_2, the maximum annual average concentration at any receptor for each year modeled was reported.

For 24-hour $PM_{2.5}$, the maximum H2H concentration at any receptor from each year modeled was reported. For annual $PM_{2.5}$, the maximum annual average concentration at any receptor for each year modeled was reported.

For 24-hour SO_2, the maximum H2H concentration at any receptor from each year modeled was reported.

For the SO_2 State Property Line (SPL) analysis, the same meteorological data set used for the SO_2 NAAQS analysis was used for the SPL analysis, which follows TCEQ's current guidance[7] noting that "if five years of meteorological data are used, then use the same five-year meteorological data for all applicable averaging periods for consistency." For the H_2S and H_2SO_4 SPL modeling, one year of meteorological data (2016) was used. The maximum impacts were compared to 2% of the applicable SPLs. Site-wide SPL modeling was required for SO_2 and H_2SO_4 and these results are discussed in Section 6.

5.2.1 Model Setup and Application

The most recent version of AERMOD (version 21112) was applied with the default options for dispersion that depend on local meteorological data, regional upper air data, and the local physical

[7] https://www.tceq.texas.gov/assets/public/permitting/air/Modeling/guidance/airquality-mod-guidelines6232.pdf

characteristics of land use surrounding the primary meteorological site. The Providence/Oris, LLC, BEEST for Windows was used to set up the model inputs and perform the model runs.

5.2.2 Averaging Periods

Pollutant concentrations predicted by AERMOD was averaged over short-term (1-, 3-, 8-, and 24-hour) and annual averaging periods as required by the applicable ambient air quality standard averaging period(s) for each modeled pollutant.

5.2.3 Building Wake Effects

Building wake effects occur when the air flow around buildings influences the dispersion from sources in the model input, resulting in variations to air concentrations. A building wake (downwash) analysis were performed to determine appropriate downwash parameters for the major structures at the facility. The current *Building Profile Input Program with Plume Rise Model Enhancements* (BPIPPRM) downwash pre-processor (Version 04274) was utilized to calculate downwash parameters for the modeling analysis.

All significant downwash structures were included in modeling analysis. The UTM coordinates in NAD83 and structure heights for the downwash structures were input to the model. The downwash structure information, including the BPIPPRM input and output files, have been uploaded to the TCEQ ftp site.

5.2.4 Urban Option

The urban option (URBANOPT) was used in AERMOD to account for enhanced night-time dispersion due to heat island effects associated with the Corpus Christi urban area where the site is located. A population of 162,728 was used for all sources (all sources are at the site). The guidance from Section 5 of the EPA AERMOD Implementation Guide was used to determine the population used in the model. The guidance specifies to determine the population for the urban area using a population density that exceeds 750 people per square kilometer, which is equivalent to 1,943 people per square mile. The population and calculated population density for each zip code in Corpus Christi is shown on Table 5-1. The population sum for the zip codes where the density is greater than 750 people per square kilometer were used as the population for URBANOPT.

VAL_000403

5.2.5 Terrain

The terrain height differences between the modeled source and each receptor can vary. For each source/receptor combination, the relationship may be characterized as flat terrain, simple terrain, intermediate or complex terrain. This variation affects the dispersion and the relative plume height of modeled sources. The terrain surrounding the facility is described as generally flat with some minor elevation changes.

The receptor, source, building base, and controlling hill elevations were determined using data from USGS National Elevation Dataset (NED) files and the AERMAP processing program. The NED file is a NAD83 elevation file with heights measured in meters. AERMAP is a preprocessor program which processes the terrain information to provide inputs to AERMOD. The output from AERMAP provides not only base elevations for the receptors, but also an effective “hill height” that enables AERMOD to make more realistic simple to complex terrain concentration calculations. A copy of the AERMAP files have been uploaded to the TCEQ ftp site.

5.2.6 Receptor Grid

The receptor grid defines the locations at which the concentrations are calculated based on the dispersion of the emissions from the sources in the model input. The receptors begin at the location where ambient air begins. The property boundary for the Valero refinery is also the fence line, except for the area near the docks where excluded area for the safety zone is not considered to be ambient air. The receptor grid which used to determine maximum off-property concentrations is an array of receptors with spacing of 25, 100, 500, and 1000 meters designed following the guidelines found in TCEQ guidance[8]. The modeling receptor grids are designed to sufficiently capture the maximum predicted concentrations and any exceedances at those locations, while helping to minimize model runtime. The UTM coordinates for the receptors are based on NAD83.

For the NAAQS and PSD increment modeling, receptor grids were developed by analyzing concentrations at each receptor from the Significance (AOI) Analysis. Only those receptors from the AOI analysis that had at least one predicted concentration greater than the SILs were included in the NAAQS/PSD increment analyses. For the secondary PM2.5 AOI, the contribution due to secondary formation were added to each receptor when determining the AOI receptors over the SILs.

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[8] *Air Quality Modeling Guidelines*, *APDG 6232v4, Revised 11/19.*

5.2.7 Meteorological Data

The meteorological data used in the modeling analyses includes hourly wind speed, wind direction, temperature, and numerous other parameters. This data is used, along with other inputs, by the model to determine the dispersion of the emissions from sources in the model input. AERMOD requires input from a preprocessor (AERMET) that organizes and processes meteorological data and estimates the necessary boundary layer parameters for dispersion calculations. Several parameters are used to describe the character of the modeled domain, including surface roughness length, albedo, and Bowen ratio. These parameters are incorporated into the surface meteorological data set used by AERMOD.

The meteorological data used in the models includes observed hourly wind speed, wind direction, temperature and numerous other parameters. This data is used, along with other inputs, by the models to determine the dispersion of the emissions from sources in the model input.

TCEQ has developed three separate AERMOD-ready meteorological data sets for each county in the state (TCEQ, 2006). The different data sets correspond to three categories of surface roughness length:

- Category 1 (LOW): For flat areas with surface roughness lengths of 0.001 m - 0.1 m
- Category 2 (MEDIUM): For rural/suburban areas with surface roughness lengths of 0.1 m – 0.7 m
- Category 3 (HIGH): For urban/industrial areas with surface roughness lengths of 0.7 m - 1.5 m

To determine which land use category is appropriate, the AERSURFACE[9] preprocessor was used. As discussed in the EPA's AERSURFACE User's Guide (EPA-454/B-20-008), the surface roughness length is related to the height of obstacles to the wind flow and is, in principle, the height at which the mean horizontal wind speed is zero based on a logarithmic profile. The surface roughness length influences the surface shear stress and is an important factor in determining the magnitude of mechanical turbulence and the stability of the boundary layer. AERSURFACE utilizes land use data available from the 2016 National Land Cover Data (NLCD) and is supplemented with percent tree

[9] https://www.epa.gov/scram/air-quality-dispersion-modeling-related-model-support-programs

canopy and percent impervious (where available). The EPA recommended 1 km radius was used to determine the appropriate surface roughness value. AERSURFACE results are summarized below.

```
** Generated by AERSURFACE, Version 20060                01/17/22 **
**                                                       16:56:02 **

** Title 1: AerSurface run for primary site
** Primary Site (Zo):
**   Center UTM Easting  (meters):   649301.8
**   Center UTM Northing (meters):  3077917.6
**   UTM Zone:  14  Datum: NAD83
** NLCD Version:  2016
** NLCD DataFile: N:\AERSURFACE_20060\2016_R06_TX-East\2016_R06_TX-East_Land_Cover.tif
** MPRV Version:  2016
** MPRV DataFile: N:\AERSURFACE_20060\2016_R06_TX-East\2016_R06_TX-East_Impervious.tif
** CNPY Version:  2016
** CNPY DataFile: N:\AERSURFACE_20060\2016_R06_TX-East\2016_R06_TX-East_Canopy.tif
** Non-Airport Sector IDs: All
** Zo Method: ZORAD
** Zo Radius (m):   1000.0
** Continuous snow cover: N
** Surface moisture: Average;  Arid: N
** Month/Season assignments: Default
** Late autumn after frost and harvest, or winter with no snow: 1  2 12
** Winter with continuous snow on the ground:
** Transitional spring (partial green coverage, short annuals): 3  4  5
** Midsummer with lush vegetation: 6  7  8
** Autumn with unharvested cropland: 9 10 11
  FREQ_SECT  ANNUAL  1
  SECTOR   1    0.00  360.00
**              Sect    Alb     Bo         Zo
  SITE_CHAR    1      1    0.15    0.39    0.122
```

The surface roughness value falls within the Category 2 - “medium” range; therefore, the medium roughness meteorological data is selected for use over the modeling domain. The AERSURFACE files have been uploaded to the TCEQ ftp site.

For Nueces County, the preprocessed (via AERMET) meteorological data sets for 2014, 2015, 2016, 2017 and 2018 were obtained from the TCEQ. Surface and upper air meteorological data were collected from the National Weather Service (NWS) station at the Corpus Christi International Airport (Station Number 12924) for all years were used in the NAAQS and PSD increment analyses. The surface station elevation used in the analysis is 13.4 meters.

Table 5-1

Urban Option Population

HOC Reconfiguration Project

Valero Refining - Texas - West Plant Refinery, Corpus Christi

#	Zip Code	Location	City	Population	People / Sq. Mile	People / Sq. KM
1	78416	27.753049, -97.439277	Corpus Christi, Texas	16,335	5,356	2,068
2	78404	27.767832, -97.399320	Corpus Christi, Texas	17,133	5,331	2,058
3	78411	27.730074, -97.383667	Corpus Christi, Texas	27,806	4,510	1,741
4	78413	27.681421, -97.409250	Corpus Christi, Texas	34,572	3,676	1,419
5	78412	27.688618, -97.352952	Corpus Christi, Texas	34,018	3,022	1,167
6	78405	27.773083, -97.444493	Corpus Christi, Texas	17,344	2,765	1,068
7	78401	27.796143, -97.400311	Corpus Christi, Texas	4,631	2,371	916
8	78408	27.796702, -97.450663	Corpus Christi, Texas	10,889	2,226	859
9	78417	27.728536, -97.443794	Corpus Christi, Texas	3,043	1,412	545
10	78414	27.659640, -97.371209	Corpus Christi, Texas	15,499	1,069	413
11	78407	27.810132, -97.441436	Corpus Christi, Texas	3,984	854	330
12	78410	27.831566, -97.581890	Corpus Christi, Texas	23,633	783	302
13	78415	27.679139, -97.498835	Corpus Christi, Texas	38,414	408	158
14	78418	27.619329, -97.330578	Corpus Christi, Texas	26,529	397	153
15	78409	27.805614, -97.510350	Corpus Christi, Texas	2,777	235	91
16	78406	27.773797, -97.517286	Corpus Christi, Texas	1,767	186	72
17	78402	27.823111, -97.404143	Corpus Christi, Texas	455	103	40

Sum of Zip Codes in Corpus Christi [1]:	162,728

1. *Total population for zip codes with greater than 750 people /km2.*
2. *Data obtained from: http://zipatlas.com/us/tx/zip-code-comparison/population-density.htm*

Table 5-2
Downwash Structures
HOC Reconfiguration Project
Valero Refining - Texas - West Plant Refinery, Corpus Christi

Structure Name	Tier No	Tier Height
		meters
BLDG1	1	9.14
BLDG2	1	3.05
BLDG3	1	4.57
BLDG4	1	4.57
BLDG5	1	3.05
BLDG6	1	3.05
BLDG7	1	4.57
BLDG8	1	6.1
BLDG9	1	3.05
BLDG10	1	4.57
BLDG11	1	3.05
BLDG12	1	7.62
BLDG13	1	6.71
BLDG14	1	34.4
BLDG16	1	7.62
BLDG18	1	12
BLDG29	1	4.57
BLDG109	1	4.57
BLDG110	1	4.57
BLDG136	1	4.57
BLDG142	1	3.05
BLDG154	1	7.62
BLDG159	1	4.57
BLDG161	1	6.1
BLDG50	1	4.57
BLDG55	1	4.57
BLDG83	1	6.1
122CT	1	15.24
BUP_CT	1	13.72
BLDG156	1	12.19
BLDG89	1	7.62
BLDG90	1	3.66
BLDG91	1	4.57
BU_CR	1	15.24
MCC	1	12
Powerhou	1	3.66
Powerhou	2	7.92
Powerhou	3	15.24

Table 5-2
Downwash Structures
HOC Reconfiguration Project
Valero Refining - Texas - West Plant Refinery, Corpus Christi

Structure Name	Tier No	Tier Height
		meters
CT901	1	13.72
13L01V1	1	27.43
13L01V2	1	27.43
13L01V3	1	27.43
38VESE	1	27.43
38VESF	1	13.72
38VESG	1	13.72
38VESH	1	13.72
76-V-03A	1	4.57
76-V-03B	1	4.57
76-V-03C	1	4.57
76-V-03D	1	4.57
83V80	1	6.4
83V83	1	7.62
83V84	1	7.62
83V84B	1	4.57
83V87	1	6.4
col1	1	21
col2	1	21
col3	1	18
col4	1	13
col5	1	21
col6	1	21
col7	1	18
col8	1	13
24TK01	1	12.19
24TK02	1	7.32
43TK08	1	6.1
70a_tk66	1	16.46
70a_tk67	1	16.46
70a_tk68	1	16.46
tank1	1	6.5
tank2	1	6.5
tank3	1	6.5
tank4	1	10
tank5	1	10
TK-1	1	14.63
TK-10	1	14.63

Table 5-2
Downwash Structures
HOC Reconfiguration Project
Valero Refining - Texas - West Plant Refinery, Corpus Christi

Structure Name	Tier No	Tier Height
		meters
TK-100	1	12.19
TK-101	1	12.19
TK-102	1	12.19
TK-103	1	12.19
TK-104	1	12.19
TK-105	1	12.19
TK-106	1	12.19
TK-107	1	11.89
TK-108	1	12.19
TK-109	1	12.19
TK-11	1	16.46
TK-110	1	12.19
TK-111	1	15.24
TK-112	1	15.24
TK-113	1	15.24
TK-114	1	19.81
TK-115	1	15.85
TK-116	1	15.85
TK-12	1	16.46
TK-13	1	16.46
TK-139	1	12.19
TK-14	1	17.37
TK-149	1	16.46
TK-15	1	17.37
TK-150	1	16.46
TK-151	1	17.37
TK-152	1	17.37
TK-153	1	17.37
TK-154	1	17.37
TK-155	1	14.94
TK-156	1	12.19
TK-157	1	10
TK-158	1	10
TK-159	1	14.63
TK-16	1	16.46
TK-160	1	14.63
TK-161	1	12.19
TK-163	1	17.37

Table 5-2
Downwash Structures
HOC Reconfiguration Project
Valero Refining - Texas - West Plant Refinery, Corpus Christi

Structure Name	Tier No	Tier Height
		meters
TK-164	1	16.46
TK-17	1	16.46
TK-18	1	16.46
TK-19	1	16.46
TK-2	1	14.63
TK-20	1	16.46
TK-23	1	12.19
TK-24	1	5.18
TK-25	1	14.94
TK-26	1	14.63
TK-27	1	14.3
TK-3	1	14.63
TK-4	1	14.63
TK-5	1	17.68
TK-51	1	14.33
TK-52	1	15.24
TK-53	1	15.24
TK-54	1	14.94
TK-55	1	15.24
TK-56	1	15.24
TK-57	1	17.37
TK-58	1	17.37
TK-59	1	17.37
TK-6	1	17.68
TK-60	1	15.24
TK-61	1	17.37
TK-62	1	15.85
TK-63	1	15.85
TK-64	1	18.9
TK-65	1	18.9
TK-7	1	17.68
TK-75	1	13.72
TK-76	1	16.46
TK-77	1	12.8
TK-78	1	12.8
TK-8	1	17.68
TK-84	1	6.1
TK-85	1	6.1

Table 5-2

Downwash Structures

HOC Reconfiguration Project

Valero Refining - Texas - West Plant Refinery, Corpus Christi

Structure Name	Tier No	Tier Height
		meters
TK-9	1	7.32
TK-93	1	12.19
TK-94	1	12.19
TK-95	1	12.19
TK-96	1	12.19
TK-97	1	12.19
TK-98	1	12.19
TK-99	1	12.19
TRIFIN-1	1	12.19
TRIFIN-2	1	12.19
TRIFIN-3	1	12.19
TRIFIN-4	1	12.19
TRIFIN-5	1	12.19
TRIFIN-6	1	12.19
TRIFIN-7	1	12.19
TRIFIN-8	1	12.19
TK_59WW	1	8.53
TK_58WW	1	8.53
TK-162	1	14.94
TK16P04	1	1.52
TK16P03	1	1.52
TK16P02	1	1.52
TK16P01	1	1.52
TANK_A	1	6.1

Section 6
Modeling Results

This section provides the results of the PSD Significance and Full Impact Analyses. All electronic modeling files and supporting information have been uploaded to the TCEQ's FTP site. The files are organized with folders that clearly indicate the types of files contained within the folder.

6.1 Significance Analysis

The significance analysis or Area of Impact (AOI) modeling included modeling the on-property (Project) emissions, discussed in Section 4, to determine if predicted concentrations are large enough to warrant additional modeling. Ground level concentrations caused by the project emission sources were compared to significant impact levels (SILs) defined by EPA. If maximum off-property constituent concentrations are below these levels, the "Project" does not cause a significant air quality impact, and no further modeling is performed. For each constituent and averaging time with the predicted ambient concentrations above the SILs, an AOI is defined as those receptors with concentrations above the SIL.

In general, the highest first high (H1H) concentration for each constituent were compared to the SILs. However, the results of the modeling for 24-hour and annual $PM_{2.5}$ (NAAQS), 1-hour NO_2, and 1-hour SO_2 are presented as the highest five year average of the maximum modeled concentrations predicted for each year and each receptor, consistent with EPA guidance. The significance analysis results are shown on Table 6-1. For the pollutants with concentrations less than the respective SILs no further analysis was required. For concentrations are over the SILs, additional NAAQS and PSD Increment analysis was required, as discussed in Section 6.2.

6.2 NAAQS and PSD Increment Analyses

For each averaging period with a concentration above the SIL, a Full Impact analysis was conducted using the project sources, existing on-property sources, and off-property sources discussed in Section 4. The full NAAQS and PSD Increment analysis was performed using only the receptors at which the respective SIL was exceeded.

The NAAQS modeling results for each constituent are shown on Table 6-2. The concentrations from the NAAQS modeling were added to the monitored background concentrations presented in Section 3 and compared to each NAAQS. The background concentrations are very conservative representations of the background near the site and include both industrial and non-industrial sources. The conservative background concentrations are sufficient to represent the complete background near the site, since the monitors are near the site, but adding in the APAD off-property sources provides an additional level of conservatism to the modeling analysis.

The PSD Increment results are shown on Table 6-3 and demonstrate that the PSD Increments will not be exceeded because of the project. As noted in Section 4.6, the off-property APAD retrieval included in this modeling is very conservative, as the sources provided by the TCEQ include all but one of the same sources with the full allowable emission rate used for the NAAQS modeling. Aside from a few refinements made to on-property sources refine the increment consuming emission rate, most of the on-property emission sources were included in the PSD Increment modeling at permit allowable emission rates.

For the annual NO_2 PSD Increment Analysis, the modeled concentrations from the Full NAAQS analysis was conservatively compared to the PSD increment and the results show that the PSD Increment will not be exceeded because of the project.

6.3 Ozone Analysis

The proposed total emissions of the site sources for VOC and NO_X are greater than 100 tpy. As such, an ozone analysis is required. To demonstrate compliance with the ozone NAAQS, the analysis described in Section 4.6 was performed. As shown on Table 4-6, the ozone preliminary impact for the project is less than 1, which indicates that the SIL for ozone will not be exceeded when considering the combined impacts of the precursors on 8-hr daily maximum ozone; therefore, a cumulative analysis for ozone is not required.

6.4 State Property Line Analyses

The data provided in this section supplements the contents of the EMEW and summarizes the results for the State Property Line (SPL) analyses. A SPL line analysis was conducted for SO_2, H_2S, and H_2SO_4. Per the TCEQ modeling guidelines, it is conservative to compare the 1-hour modeling results to the 30-minute standard. The maximum off-property concentrations from the modeling of the project emissions, summarized on Table 6-1, are less than 2% of the TCEQ Chapter 112 standards for H_2S; therefore, no further analysis is required. For SO_2 and H_2SO_4, the project modeling results are greater than 2% of the SPL standards; therefore, site-wide modeling was conducted.

The site-wide on-property source emissions were modeled and compared to the full SPL standards, summarized on Table 6-2, and the results are all below the standards. This analysis demonstrates that the emissions are protective and no further SPL modeling is required.

6.5 Modeling And Effects Review Applicability Analysis (MERA)

The data provided in this section supplements the contents of the EMEW and summarizes the results for the health effects analysis details. This analysis was conducted following the TCEQ's Modeling and Effects Review Applicability (MERA) flowchart. Per the MERA guidance, "It is acceptable to skip steps in the MERA process and proceed directly to more detailed steps." This analysis begins with Step 3.

Table 6-4 shows the post processing of Unit Impact Multipliers for MERA Step 3 for the 1-hour health effects analysis. Since the annual ESLs are not less than 10% of the short-term ESLs, no annual review was required. As shown, all of the results are less than 10% of the respective ESLs for each averaging period; therefore, the health effects evaluation is complete and the project emissions are protective of public health and welfare.

Table 6-1

Significant Impact Analysis Modeling Results

HOC Reconfiguration Project

Valero Refining - Texas - West Plant Refinery, Corpus Christi

Constituent and Analysis	Averaging Period	Meteorological Data Years	Significant Impact Level (SIL) (Deminimis)	Significant Monitoring Concentration (SMC)	Project GLCmax	Secondary $PM_{2.5}$	Total Project GLCmax[1]	Is Project Greater than SIL?	Is Project Greater than SMC?
			µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	yes/no	yes/no
Nitrogen Dioxide (NO_2) NAAQS	1-Hour	2014-2018	7.5	—	30.2	—	30.2	Yes	No
NO_2 NAAQS and PSD Increment	Annual	2014	1.0	14	1.7	—	1.7	Yes	No
		2015	1.0	14	1.6	—	1.6	Yes	No
		2016	1.0	14	1.5	—	1.5	Yes	No
		2017	1.0	14	1.7	—	1.7	Yes	No
		2018	1.0	14	1.7	—	1.7	Yes	No
Carbon Monoxide (CO) NAAQS	1-Hour	2014-2018	2000	—	361.9	—	361.9	No	No
	8-Hour	2014-2018	500	575	319.2	—	319.2	No	No
PM_{10} NAAQS and PSD Increment	24-Hour	2014-2018	5	10	4.7	—	4.7	No	No
PM_{10} PSD Increment	Annual	2014	1	—	0.8	—	0.8	No	No
		2015	1	—	0.8	—	0.8	No	No
		2016	1	—	0.7	—	0.7	No	No
		2017	1	—	0.8	—	0.8	No	No
		2018	1	—	0.9	—	0.9	No	No
$PM_{2.5}$ NAAQS	1-Hour	2014-2018	1.2	—	4.0	0.03	4.0	Yes	No
	Annual	2014-2018	0.2	—	0.8	0.01	0.8	Yes	No

Table 6-1

Significant Impact Analysis Modeling Results

HOC Reconfiguration Project

Valero Refining - Texas - West Plant Refinery, Corpus Christi

Constituent and Analysis	Averaging Period	Meteorological Data Years	Significant Impact Level (SIL) (Deminimis)	Significant Monitoring Concentration (SMC)	Project GLCmax	Secondary $PM_{2.5}$	Total Project GLCmax[1]	Is Project Greater than SIL?	Is Project Greater than SMC?
			μg/m³	μg/m³	μg/m³	μg/m³	μg/m³	yes/no	yes/no
$PM_{2.5}$ PSD Increment	1-Hour	2014	1.2	—	3.5	0.03	3.5	Yes	No
		2015	1.2	—	4.7	0.03	4.8	Yes	No
		2016	1.2	—	4.3	0.03	4.3	Yes	No
		2017	1.2	—	3.8	0.03	3.9	Yes	No
		2018	1.2	—	4.3	0.03	4.3	Yes	No
	Annual	2014	0.2	—	0.8	0.01	0.8	Yes	No
		2015	0.2	—	0.8	0.01	0.8	Yes	No
		2016	0.2	—	0.7	0.01	0.7	Yes	No
		2017	0.2	—	0.8	0.01	0.8	Yes	No
		2018	0.2	—	0.9	0.01	0.9	Yes	No
Sulfur Dioxide (SO_2) State Property Line	30-min	2014-2018	20.42	—	21.1	—	21.1	Yes	No
SO_2 NAAQS	1-Hour	2014-2018	7.8	—	20.1	—	20.1	Yes	No
SO_2 NAAQS and PSD Increment	3-Hour	2014-2018	25	—	20.2	—	20.2	No	No
SO_2 PSD Increment	24-Hour	2014-2018	5	13	15.52	—	15.52	Yes	Yes
	Annual	2014	1	—	1.6	—	1.6	Yes	No
		2015	1	—	1.6	—	1.6	Yes	No
		2016	1	—	1.5	—	1.5	Yes	No
		2017	1	—	1.6	—	1.6	Yes	No
		2018	1	—	1.8	—	1.8	Yes	No

Table 6-1
Significant Impact Analysis Modeling Results
HOC Reconfiguration Project
Valero Refining - Texas - West Plant Refinery, Corpus Christi

Constituent and Analysis	Averaging Period	Meteorological Data Years	Significant Impact Level (SIL) (Deminimis)	Significant Monitoring Concentration (SMC)	Project GLCmax	Secondary $PM_{2.5}$	Total Project GLCmax[1]	Is Project Greater than SIL?	Is Project Greater than SMC?
			µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	yes/no	yes/no
Hydrogen Sulfide (H_2S) State Property Line	30-min (Residential)	2016	2.16	---	0.4	---	0.4	No	No
	30-min (Industrial)	2016	3.24	---	0.4	---	0.4	No	No
Sulfuric Acid (H_2SO_4) State Property Line	1-Hour	2016	1	---	4.8	---	4.8	Yes	No
	24-Hour	2016	0.3	---	2.7	---	2.7	Yes	No

[1] The "Total GLCmax" is the maximum ground-level concentration from modeling the project emissions (i.e., "Project GLCmax") for all constituents, except $PM_{2.5}$. For $PM_{2.5}$, the "Total GLCmax" is the "Project GLCmax" plus the "Secondary PM2.5" contribution.

Table 6-2

NAAQS and State Property Line Modeling Results

HOC Reconfiguration Project

Valero Refining - Texas - West Plant Refinery, Corpus Christi

Constituent	Averaging Period	Meteorological Data Years	Site-wide plus Off-Property GLCmax [1]	Secondary $PM_{2.5}$	Background Concentration	Total GLCmax [2]	Standard	Is Project Greater than Standard?
			µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	yes/no
Nitrogen Dioxide (NO_2)	1-Hour	2014-2018	121.4	---	33.9	155.3	188	No
	Annual	2014	21.5	---	4.5	26.0	100	No
		2015	22.0	---	4.5	26.5	100	No
		2016	22.3	---	4.5	26.8	100	No
		2017	22.4	---	4.5	26.9	100	No
		2018	22.3	---	4.5	26.8	100	No
$PM_{2.5}$	24-Hour	2014-2018	14.8	0.03	19.6	34.4	35	No
	Annual	2014-2018	3.6	0.01	7.7	11.3	12	No
Sulfur Dioxide (SO_2)	30-minute	2014-2018	182.9	---	---	182.9	1021	No
	1-Hour	2014-2018	151.0	---	14.5	165.4	196	No
Sulfuric Acid (H_2SO_4)	1-Hour	2016	8.5	---	---	8.5	50	No
	24-Hour	2016	3.1	---	---	3.1	15	No

[1] The "Site-wide plus Off-Property GLCmax" is the maximum modeled concentration from the site-wide emissions plus the off-property emissions inventory for all constituents and averaging periods, except the 30-minute SO_2 and 1-hour and 24-hour H_2SO_4 State Property Line analyses. These analyses only include the site-wide emissions (i.e., no off-property sources or background concentrations are added).

[2] The "Total GLCmax" is the sum of the "Site-wide plus Off-Property GLCmax" plus the "Secondary $PM_{2.5}$", where applicable, plus the "Background Concentration".

Table 6-3
PSD Increment Results
HOC Reconfiguration Project
Valero Refining - Texas - West Plant Refinery, Corpus Christi

Constituent	Averaging Period	Meteorological Data Years	Site-wide plus Off-property GLCmax	Secondary $PM_{2.5}$	Total GLCmax[1]	PSD Increment	Is GLCmax Greater than PSD Increment?
			µg/m³	µg/m³	µg/m³	µg/m³	yes/no
Nitrogen Dioxide (NO_2)	Annual [2]	2014	21.5	---	21.5	25	No
		2015	22.0	---	22.0	25	No
		2016	22.3	---	22.3	25	No
		2017	22.4	---	22.4	25	No
		2018	22.3	---	22.3	25	No
$PM_{2.5}$	24-Hour	2014	7.7	0.03	7.8	9	No
		2015	8.2	0.03	8.2	9	No
		2016	8.7	0.03	8.7	9	No
		2017	8.7	0.03	8.8	9	No
		2018	8.5	0.03	8.5	9	No
	Annual	2014	2.8	0.01	2.8	4	No
		2015	2.9	0.01	2.9	4	No
		2016	2.8	0.01	2.9	4	No
		2017	2.9	0.01	2.9	4	No
		2018	2.8	0.01	2.8	4	No
Sulfur Dioxide (SO_2)	24-Hour	2014-2018	78.6	---	78.6	91	No
	Annual	2014	10.4	---	10.4	20	No
		2015	10.9	---	10.9	20	No
		2016	10.9	---	10.9	20	No
		2017	10.9	---	10.9	20	No
		2018	11.0	---	11.0	20	No

[1] The "Total GLCmax" is the maximum ground-level concentration from the modeling of the project emissions (i.e., "Project GLCmax") for all constituents, except $PM_{2.5}$. For $PM_{2.5}$, the "Total GLCmax" is the "Project GLCmax" plus the "Secondary PM2.5" contribution.

[2] The NAAQS results for annual NO2 were conservatively used to demonstrate compliance with the annual PSD Increemnt for NO2.

Table 6-4
MERA Step 3
HOC Reconfiguration Project
Valero Refining - Texas - West Plant Refinery, Corpus Christi

Component Name	CAS#	1-hour ESL	Annual ESL	Is Annual Review Required?	Unit Impact Multiplier (µg/m³ per lb/hr) >>>	1.733	0.125	27.837	10.350	0.125	28.968	GLCmax [1]	% of ESL	Is GLCmax < 10% of ESL
					EPN >>	30-B-05	121	FUG-CAP	HOC-PP-CT	121/30-B-05	CAS-HOCPP			
					Model ID >>	30_B_05	121HOC	FUGCAP	HOCPPCT	121HOC	CASHOCPP			
		µg/m³	µg/m³	yes/no		lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	µg/m³		yes/no
Ammonia (NH_3)	7664-41-7	180	92	no		2.2	4.8	0.01	-	-	-	4.7	2.6%	yes
Refinery Lights (distillates (petroleum), light catalytic cracked)	64741-59-9	3,500	350	no		-	-	6.7	1.09	0.24	0.005	198.0	5.7%	yes

[1] The "GLCmax" is the sum of the individual unit impact multiplier times the constituent specific emission rate for each source.

Section 7
Additional Impacts Analysis

PSD regulations require an Additional Impacts Analysis of the impact from the proposed project on soils, vegetation, visibility, and associated growth. The facility impacts on growth, soils, vegetation, and visibility are discussed in this section.

7.1 Growth Analysis

The elements of the growth analysis include a projection of the associated industrial, commercial, and residential growth that will occur in the area of impact due to the source, including the potential impact on ambient air due to this growth. Emissions from such growth should be considered if they are specific, well defined, quantifiable, and impact the same general area. Emissions from such growth would be viewed as impacting the same area if these impact an area that is predicted to have impacts from the proposed changes to Valero's emissions that are greater than the SIL. Valero anticipates that the employees for the construction will be existing nearby residents; therefore, residential growth is expected to be low. Valero does not anticipate any associated industrial or commercial growth that would impact the significant impact area due to the proposed changes. Therefore, the impact on air quality resulting from any commercial or industrial growth associated with this project is expected to be insignificant. Per the TCEQ AQMG, an in-depth growth analysis would only be required if the project would result in a significant shift of population and associated activity into an area – that is, a population increase on the order of thousands of people.

7.2 Soil and Vegetation Analysis

The NAAQS secondary standards were set by the EPA to provide protection to most soils and vegetation from the adverse effect of air pollution. Model results are all less than the NAAQS secondary standards; therefore, no adverse effects to soils and vegetation are expected.

VAL_000423

7.3 Visibility Impairment Analysis

The Valero facility will comply with visibility and opacity requirements in 30 TAC Chapter 111, which is sufficient to satisfy the visibility impairment analysis requirements for Class II areas[10].

7.4 Class 1 Area Analysis

The nearest Class I area (Big Bend National Park) is approximately 550 km from the project site. Since the site is located greater than 100 km from the nearest Class I area, per TCEQ guidance[11], no PSD Class I visibility impairment analysis is required.

[10] *Air Quality Modeling Guidelines*, *APDG 6232v4, Revised 09/18*, page 26.
[11] *Ibid.*

Appendix A

Emission Change Summary

Table 1-1

Allowable Emission Rate Change Summary

HOC Reconfiguration Project
Valero Refining - Texas - West Plant Refinery, Corpus Christi

EPN(s)	FIN(s)	Source Description	CO Current (lb/hr)	CO Proposed (lb/hr)	NO_X Current (lb/hr)	NO_X Proposed (lb/hr)	PM Current (lb/hr)	PM Proposed (lb/hr)	PM_{10} Current (lb/hr)	PM_{10} Proposed (lb/hr)
121	24-ST-01	Heavy Oil Cracker (HOC) Belco Scrubber	889.96	958.40	356.20	384.12	120.32	140.00	120.32	140.00
121/ 30-B-05	MEROX	New Merox Vent								
30-B-05	30-B-05	Boiler	0	33.48	0.00	7.16	0.00	3.56	0	3.56
30-B-05	30-B-05	Boiler (MSS)	0	167.39	0.00	71.61				
HOC-PP-CT	HOC-PP-CT	Cooling Tower					0	0.78	0	0.18
CAS-HOCPP	CAS-HOCPP	HOC Gas Plant Wastewater Lift Statation								
21/22F	HOC-FUG	HOC Unit Fugitives								
42F	SWS-FUG	Sour Wtr, Stripper Fugitives								
FUG-CAP	Various	Piping Fugitives								
HOC-CT	122	HOC Cooling Tower					17.71	3.54	16.82	3.36
		Total:	890.0	1159.3	356.2	462.9	138.0	147.9	137.1	147.1
		Change in Allowable (lb/hr):		269.3		106.7		9.8		10.0

EPN(s)	FIN(s)	Source Description	CO Current (tpy)	CO Proposed (tpy)	NO_X Current (tpy)	NO_X Proposed (tpy)	PM Current (tpy)	PM Proposed (tpy)	PM_{10} Current (tpy)	PM_{10} Proposed (tpy)
121	24-ST-01	Heavy Oil Cracker (HOC) Belco Scrubber	1470.33	1559.15	473.81	473.81	527.00	569.40	527	569.40
121/ 30-B-05	MEROX	New Merox Vent								
30-B-05	30-B-05	Boiler	0	70.84	0.00	30.14	0.00	14.16	0	14.16
HOC-PP-CT	HOC-PP-CT	Cooling Tower					0	3.42	0	0.81
MSS Caps	MSS Caps	MSS Caps	53.9	94.64	11.05	18.03	1.41	2.96	1.31	2.86
CAS-HOCPP	CAS-HOCPP	HOC Gas Plant Wastewater Lift Statation								
21/22F	HOC-FUG	HOC Unit Fugitives								
42F	SWS-FUG	Sour Wtr, Stripper Fugitives								
FUG-CAP	Various	Piping Fugitives								
HOC-CT	122	HOC Cooling Tower					65.86	13.17	62.58	12.52
		Total:	1524.2	1724.6	484.9	522.0	594.3	603.1	590.9	599.8
		Change in Allowable (tpy):		200.4		37.1		8.8		8.9

Table 1-1

Allowable Emission Rate Change Summary

HOC Reconfiguration Project

Valero Refining - Texas - West Plant Refinery, Corpus Christi

EPN(s)	FIN(s)	Source Description	$PM_{2.5}$ Current (lb/hr)	$PM_{2.5}$ Proposed (lb/hr)	SO_2 Current (lb/hr)	SO_2 Proposed (lb/hr)	VOC Current (lb/hr)	VOC Proposed (lb/hr)	H2SO4 Current (lb/hr)	H2SO4 Proposed (lb/hr)
121	24-ST-01	Heavy Oil Cracker (HOC) Belco Scrubber	120.32	140.00	203.53	219.22	28.02	30.18	49.00	49.00
121/ 30-B-05	MEROX	New Merox Vent			0	3.86	0	0.24		
30-B-05	30-B-05	Boiler	0	3.56	0	7.70	0	2.57		
30-B-05	30-B-05	Boiler (MSS)								
HOC-PP-CT	HOC-PP-CT	Cooling Tower	0	0.001			0	1.09		
CAS-HOCPP	CAS-HOCPP	HOC Gas Plant Wastewater Lift Statation					0	0.005		
21/22F	HOC-FUG	HOC Unit Fugitives								
42F	SWS-FUG	Sour Wtr, Stripper Fugitives								
FUG-CAP	Various	Piping Fugitives					101.17	107.87		
HOC-CT	122	HOC Cooling Tower	2.63	0.53			5.67	5.67		
		Total:	123.0	144.1	203.5	230.8	134.9	147.6	49.0	49.0
		Change in Allowable (lb/hr):		21.1		27.3		12.8		0.0

EPN(s)	FIN(s)	Source Description	$PM_{2.5}$ Current (tpy)	$PM_{2.5}$ Proposed (tpy)	SO_2 Current (tpy)	SO_2 Proposed (tpy)	VOC Current (tpy)	VOC Proposed (tpy)	H2SO4 Current (tpy)	H2SO4 Proposed (tpy)
121	24-ST-01	Heavy Oil Cracker (HOC) Belco Scrubber	527	569.40	420.09	420.12	115.53	122.74	214.62	199.30
121/ 30-B-05	MEROX	New Merox Vent			0	16.91	0	1.05		
30-B-05	30-B-05	Boiler	0	14.16	0	21.15	0	10.25	0	0.00
HOC-PP-CT	HOC-PP-CT	Cooling Tower	0	0.01			0	4.78		
MSS Caps	MSS Caps	MSS Caps	1.29	2.84	37.33	38.99	44.83	45.22		
CAS-HOCPP	CAS-HOCPP	HOC Gas Plant Wastewater Lift Statation					0	0.02		
21/22F	HOC-FUG	HOC Unit Fugitives								
42F	SWS-FUG	Sour Wtr, Stripper Fugitives								
FUG-CAP	Various	Piping Fugitives					443.11	472.44		
HOC-CT	122	HOC Cooling Tower	9.78	1.96			21.09	21.09		
		Total:	538.1	588.4	457.4	497.2	624.6	677.6	214.6	199.3
		Change in Allowable (tpy):		50.3		39.8		53.0		-15.3

Table 1-1

Allowable Emission Rate Change Summary

HOC Reconfiguration Project

Valero Refining - Texas - West Plant Refinery, Corpus Christi

EPN(s)	FIN(s)	Source Description	HCN Current (lb/hr)	HCN Proposed (lb/hr)	NH3 Current (lb/hr)	NH3 Proposed (lb/hr)	H2S Current (lb/hr)	H2S Proposed (lb/hr)
121	24-ST-01	Heavy Oil Cracker (HOC) Belco Scrubber	80.47	80.47	0	4.84		
121/ 30-B-05	MEROX	New Merox Vent					0	0.001
30-B-05	30-B-05	Boiler			0	2.18		
30-B-05	30-B-05	Boiler (MSS)						
HOC-PP-CT	HOC-PP-CT	Cooling Tower						
CAS-HOCPP	CAS-HOCPP	HOC Gas Plant Wastewater Lift Statation						
21/22F	HOC-FUG	HOC Unit Fugitives					0.03	0.03
42F	SWS-FUG	Sour Wtr, Stripper Fugitives					<0.01	<0.01
FUG-CAP	Various	Piping Fugitives			0	0.010	0	0.01
HOC-CT	122	HOC Cooling Tower						
		Total:	80.5	80.5	0.0	7.0	0.0	0.0
		Change in Allowable (lb/hr):		0.0		7.0		0.0

EPN(s)	FIN(s)	Source Description	HCN Current (tpy)	HCN Proposed (tpy)	NH3 Current (tpy)	NH3 Proposed (tpy)	H2S Current (tpy)	H2S Proposed (tpy)
121	24-ST-01	Heavy Oil Cracker (HOC) Belco Scrubber	320.4	320.40	0	17.88		
121/ 30-B-05	MEROX	New Merox Vent					0	0.004
30-B-05	30-B-05	Boiler	0	0.00	0	8.68		
HOC-PP-CT	HOC-PP-CT	Cooling Tower						
MSS Caps	MSS Caps	MSS Caps					0.22	0.22
CAS-HOCPP	CAS-HOCPP	HOC Gas Plant Wastewater Lift Statation						
21/22F	HOC-FUG	HOC Unit Fugitives					0.12	0.14
42F	SWS-FUG	Sour Wtr, Stripper Fugitives					0.02	0.02
FUG-CAP	Various	Piping Fugitives			0	0.06	0	0.06
HOC-CT	122	HOC Cooling Tower						
		Total:	320.4	320.4	0.0	26.6	0.4	0.4
		Change in Allowable (tpy):		0.0		26.6		0.1

Prevention of Significant Deterioration Permit Application

TCEQ Air Quality Permit Nos. 38754, PSDTX324M14
HOC Reconfiguration Project

See Electronic File Entitled:

“2022.01.24 Electronic Files.zip”

From: Marquard, Meagan
To: Cara Hill
Cc: R6AirPermitsTX@epa.gov; Kelly Ruble; Arnosky, David; Almaraz, Aimee; Joe Kupper
Subject: Permit 38754 Valero HOC Project Draft Permit - Valero Response
Date: Thursday, April 7, 2022 2:58:59 PM
Attachments: CND - 38754 Valero (Amendment, 333877)-VALERO COMMENTS.docx
MRT - 38754 Valero (Amendment, 333877)-VALERO COMMENTS.docx
20220407_ApplicationWorkbook_Valero_38754.xlsx
Revised and New Tables.pdf

Cara,

Valero is submitting comments on the draft special conditions and MAERT. Attached for your convenience are marked up conditions and MAERT. The proposed changes are summarized as follows:

1. The introductory paragraph for SC 30 was revised to clarify that the excepted cooling tower subject to paragraph E is the new cooling tower associated with the HOC Reconfiguration project.

2. For SC 36.C.1. Valero does not believe the requirement to perform sampling at maximum flow rate is appropriate. The TCEQ boilerplate conditions for carbon adsorption systems (CAS) contains the following text: "*The CAS shall be sampled every (frequency see note 1) to determine breakthrough of volatile organic compounds (VOC). The sampling point shall be at the outlet of the initial canister but before the inlet to the second or final polishing canister. Sampling shall be done during (identify operating conditions reflecting maximum emission venting to the CAS such as during loading, tank filling, process venting).*" .

   Based on the examples given in the boilerplate, it appears that the intent was to cover periods when discrete events occur such that the flow rate to the CAS is higher than normal. Since the wastewater from the new processing units routed to the new lift station are expected to a generally constant flow rate, revised language is proposed to specify sampling must at performed during wastewater generation and routine operations.

3. The increased MSS emissions represented on Table A-8 of the application is for additional hours of MSS related to the HOC. Therefore, the number of hours in SC 60. B. (1) should be increased the additional 36 hours, such that the existing 50 hours is now 86 hours.

4. As discussed in Section 8.2.2, the project will cause the HOC to become an "affected unit" and subject to NSPS Ja. Therefore, a new item has been added to SC 75 to specify that the HOC is subject NSPS Ja upon startup of the reconfigured HOC. The existing reference to NSPS J is still appropriate for the permit for operation prior to the modification. Reference to the new boiler has also been added to SC 75(A)(2) for NSPS Ja applicability.

5. Language has been added to SC 82 to clarify when GHG calculations begin and to what sources are subject to the requirement.

6. A new SC 84 is proposed in order to codify the thermal efficiency represented for the new boiler and address monitoring requirements to ensure compliance.

7. Clarifying descriptions and new project units have been added to the table in Attachment 1. Please note that the new sour water stripper is associated the existing sour water stripper; therefore, is included with EPN 42F.

8. Changes to the MAERT

    a. The pending amendment to Permit 38754 (Project 326326) has completed second public notice and issuance is expected during April. The attached PI-1 Workbook has been revised to reflect the emission limits for the MAERT that will be issued for Project 326326. Revised Tables A-4 (Fugitive Speciation) and A-10 (MSS Caps) are attached and include the revised existing MAERT limits that match the pending permit. As a result of these changes updated Tables 1-1 and 7-1 are also attached. The new limits have been shown in the marked up MAERT.

    b. Added line items for three EPNS for new units being constructed for the project.

    c. Revised VOC, SO2, and H2S emission rates for EPNs 121 and 30-B-05 to include emissions from the proposed MEROX vent.

    d. Add "-Propylene Project" to the description to EPN HOC-PP-CT. In addition, the new cooling tower name has been added to the revised PI-1.

In addition, Valero would like to make the following changes to the permit application:

1. Valero would like to clarify that the new boiler (EPN 30-B-05) will be capable of firing natural gas. No updates to the emission calculations since firing natural gas results in equal or lower emission rates than firing refinery fuel gas.

2. In the initial project planning cat naphtha was proposed to be routed directly from the existing HOC to the new secondary reactor-riser; however, the project now calls for the cat naphtha to be routed to an intermediate storage tank. The tank will be an existing tank, Tank 70TK51 (EPN TK-51). Tank 70TK51 is authorized by Permit 135590 and Valero will authorize the change of service to cat naphtha as required in a separate permitting or PBR action. However the increased VOC emissions are being accounted for in updated PSD emission tables and health effect modeling will be provided in a separate submittal. The attached Tables A-12 and A-13 contain emission calculations for Tank 70TK51 storing cat naphtha. Revised PSD tables for VOC are also attached. Please note that the HOC PP Gas Plant CAS, inadvertently left off the Table 2F, has been added.

Meagan Marquard
Superintendent Environmental
Valero - Bill Greehey Refineries
Office: (361) 299-8913
Mobile: (520) 249-5349

I. Applicant Information

I acknowledge that I am submitting an authorized TCEQ application workbook and any necessary attachments. Except for inputting the requested data and adjusting row height and column width, I have not changed the TCEQ application workbook in any way, including but not limited to changing formulas, formatting, content, or protections.	I agree

A. Company Information

Company or Legal Name:	Valero Refining - Texas, L.P.

Permits are issued to either the facility owner or operator, commonly referred to as the applicant or permit holder. List the legal name of the company, corporation, partnership, or person who is applying for the permit. We will verify the legal name with the Texas Secretary of State at (512) 463-5555 or at the link below:

https://www.sos.state.tx.us

Texas Secretary of State Charter/Registration Number (if given):	

B. Company Official Contact Information: must not be a consultant

Prefix (Mr., Ms., Dr., etc.):	Mr.
First Name:	Joe
Last Name:	Almaraz
Title:	Director Environmental / Safety Affairs
Mailing Address:	P.O. Box 9370
Address Line 2:	
City:	Corpus Christi
State:	Texas
ZIP Code:	78469
Telephone Number:	361-289-3328
Fax Number:	361-289-3126
Email Address:	Joe.Almaraz@valero.com

C. Technical Contact Information: This person must have the authority to make binding agreements and representations on behalf of the applicant and may be a consultant. **Additional technical contact(s) can be provided in a cover letter.**

Prefix (Mr., Ms., Dr., etc.):	Ms.
First Name:	Meagan
Last Name:	Marquard
Title:	Superintendent Environmental
Company or Legal Name:	Valero Refining - Texas, L.P.
Mailing Address:	P.O. Box 9370
Address Line 2:	
City:	Corpus Christi
State:	Texas
ZIP Code:	78469
Telephone Number:	361-299-8913
Fax Number:	361-289-3126
Email Address:	Meagan.Marquard@valero.com

D. Assigned Numbers

The CN and RN below are assigned when a Core Data Form is initially submitted to the Central Registry. The RN is also assigned if the agency has conducted an investigation or if the agency has issued an enforcement action. If these numbers have not yet been assigned, leave these questions blank and include a Core Data Form with your application submittal. See Section VI.B. below for additional information.

Enter the CN. The CN is a unique number given to each business, governmental body, association, individual, or other entity that owns, operates, is responsible for, or is affiliated with a regulated entity.	CN600127468

Enter the RN. The RN is a unique agency assigned number given to each person, organization, place, or thing that is of environmental interest to us and where regulated activities will occur. The RN replaces existing air account numbers. The RN for portable units is assigned to the unit itself, and that same RN should be used when applying for authorization at a different location.	RN100214386

II. Delinquent Fees and Penalties

Does the applicant have unpaid delinquent fees and/or penalties owed to the TCEQ? This form will not be processed until all delinquent fees and/or penalties owed to the TCEQ or the Office of the Attorney General on behalf of the TCEQ are paid in accordance with the Delinquent Fee and Penalty Protocol. For more information regarding Delinquent Fees and Penalties, go to the TCEQ Web site at the link below:	No

https://www.tceq.texas.gov/agency/financial/fees/delin

III. Permit Information

A. Permit and Action Type (multiple may be selected, leave no blanks)

Additional information regarding the different NSR authorizations can be found at the link below:
https://www.tceq.texas.gov/permitting/air/guidance/authorize.html

Select from the drop-down the type of action being requested for each permit type. **If that permit type does not apply, you MUST select "Not applicable".**

Provide all assigned permit numbers relevant for the project. Leave blank if the permit number has not yet been assigned.

Permit Type	Action Type Requested (do not leave blank)	Permit Number (if assigned)
Minor NSR (can be a Title V major source): *Not applicable, Initial, Amendment, Renewal, Renewal Certification, Renewal/Amendment, Relocation/Alteration, Change of Location, Alteration, Extension to Start of Construction*	Amendment	38754
Special Permit: *Not applicable, Amendment, Renewal, Renewal Certification, Renewal/Amendment, Alteration, Extension to Start of Construction*	Not applicable	
De Minimis: *Not applicable, Initial*	Not applicable	
Flexible: *Not applicable, Initial, Amendment, Renewal, Renewal Certification, Renewal/Amendment, Alteration, Extension to Start of Construction*	Not applicable	
PSD: *Not applicable, Initial, Major Modification*	Major Modification	PSDTX324M14
Nonattainment: *Not applicable, Initial, Major Modification*	Not applicable	
HAP Major Source [FCAA § 112(g)]: *Not applicable, Initial, Major Modification*	Not applicable	
PAL: *Not applicable, Initial, Amendment, Renewal, Renewal/Amendment, Alteration*	Not applicable	
GHG PSD: *Not applicable, Initial, Major Modification, Voluntary Update*	Initial	TBD

GHG projects: List the non-GHG applications (pending or being submitted) that are associated with the project. Note: All preconstruction authorizations (including authorization for emissions of greenhouse gases, if applicable) must be obtained prior to start of construction.	

B. MSS Activities

How are/will MSS activities for sources associated with this project be authorized?	This permit

C. Consolidating NSR Permits

Will this permit be consolidated into another NSR permit with this action?	No
Will NSR permits be consolidated into this permit with this action?	No

D. Incorporation of Standard Permits, Standard Exemptions, and/or Permits By Rule (PBR)

To ensure protectiveness, previously issued authorizations (standard permits, standard exemptions, or PBRs) including those for MSS, are incorporated into a permit either by consolidation or by reference.

-Authorizations entirely incorporated by consolidation will be voided when the project is complete, and the sources and allowable emissions will be added to the NSR permit's MAERT.

-Authorizations incorporated by reference will be referenced with the final action for this project but will not be voided. Sources will continue to be authorized in the current manner.

At the time of renewal and/or amendment, consolidation (in some cases) may be voluntary and referencing is mandatory. More guidance regarding incorporation can be found in 30 TAC § 116.116(d)(2), 30 TAC § 116.615(3) and in this memo (link below):

https://www.tceq.texas.gov/assets/public/permitting/air/memos/pbr_spc06.pdf

Are there any standard permits, standard exemptions, or PBRs to be incorporated by reference?	No
Are there any PBR, standard exemptions, or standard permits associated to be incorporated by consolidation? **Note:** Emission calculations, a BACT analysis, and an impacts analysis must be attached to this application at the time of submittal for any authorization to be incorporated by consolidation.	No

E. Associated Federal Operating Permits	
Is this facility located at a site required to obtain a **site operating permit (SOP)** or **general operating permit (GOP)?**	Yes
Is a **SOP** or **GOP** review pending for this source, area, or site?	No
If required to obtain a **SOP** or **GOP**, list all associated permit number(s). If no associated permit number has been assigned yet, enter "TBD":	O1458

IV. Facility Location and General Information	
A. Location	
County: Enter the county where the facility is physically located.	Nueces
TCEQ Region	Region 14
County attainment status as of Sept. 23, 2019	attainment or unclassified for all pollutants
Street Address:	5900 Up River Road
City: If the address is not located in a city, then enter the city or town closest to the facility, even if it is not in the same county as the facility.	Corpus Christi
ZIP Code: Include the ZIP Code of the physical facility site, not the ZIP Code of the applicant's mailing address.	78407
Site Location Description: If there is no street address, provide written driving directions to the site. Identify the location by distance and direction from well-known landmarks such as major highway intersections.	Not applicable
Use USGS maps, county maps prepared by the Texas Department of Transportation, or an online software application such as Google Earth to find the latitude and longitude.	
Latitude (in degrees, minutes, and nearest second (DDD:MM:SS)) for the street address or the destination point of the driving directions. Latitude is the angular distance of a location north of the equator and will always be between 25 and 37 degrees north (N) in Texas.	027:49:14
Longitude (in degrees, minutes, and nearest second (DDD:MM:SS)) for the street address or the destination point of the driving directions. Longitude is the angular distance of a location west of the prime meridian and will always be between 93 and 107 degrees west (W) in Texas.	097:29:18
Is this a project for a lead smelter, concrete crushing facility, and/or a hazardous waste management facility?	No
B. General Information	
Site Name:	Valero Corpus Christi Refinery West Plant

Area Name: Must indicate the general type of operation, process, equipment or facility. Include numerical designations, if appropriate. Examples are Sulfuric Acid Plant and No. 5 Steam Boiler. Vague names such as Chemical Plant are not acceptable.	West Plant
Are there any schools located within 3,000 feet of the site boundary?	No
C. Portable Facility	
Permanent or portable facility?	Permanent
D. Industry Type	
Principal Company Product/Business:	Petroleum Refining
A list of SIC codes can be found at the link below: https://www.naics.com/sic-codes-industry-drilldown/	
Principal SIC code:	2911
NAICS codes and conversions between NAICS and SIC Codes are available at the link below: https://www.census.gov/eos/www/naics/	
Principal NAICS code:	324110
E. State Senator and Representative for this site	
This information can be found at the link below (note, the website is not compatible to Internet Explorer): https://wrm.capitol.texas.gov/	
State Senator:	Juan "Chuy" Hinojosa
District:	Texas Senate District 20
State Representative:	Abel Herrero
District:	Texas House District 34

V. Project Information	
A. Description	
Provide a **brief** description of the project that is requested (describe the what, not the how and why). Limited to 500 characters.	Valero plans to undertake changes to the West Plant Heavy Oil Cracker (HOC), a fluidized catalytic cracking (FCC) unit. Due to the integrated nature of refinery operations, the project ("HOC Reconfiguration Project") will necessitate construction of a new utility boiler, a new cooling tower, and a new Gas Plant.
B. Project Timing	
Authorization must be obtained for many projects before beginning construction. Construction is broadly interpreted as anything other than site clearance or site preparation. Enter the date as "Month Date, Year" (e.g. July 4, 1776).	
Projected Start of Construction:	October 1, 2022
Projected Start of Operation:	January 1, 2024
C. Enforcement Projects	
Is this application in response to, or related to, an agency investigation, notice of violation, or enforcement action?	No
D. Operating Schedule	
Will sources in this project be authorized to operate 8760 hours per year?	Yes

Date: April 2022
Permit #: 38754
Company: Valero Refining - Texas, L.P.

VI. Application Materials	
All representations regarding construction plans and operation procedures contained in the permit application shall be conditions upon which the permit is issued. (30 TAC § 116.116)	
A. Confidential Application Materials	
Is confidential information submitted with this application?	No
B. Is the Core Data Form (Form 10400) attached (link to the form below)?	N/A
C. Is a current area map attached?	Yes
Is the area map a current map with a true north arrow, an accurate graduated scale, the entire plant property, the location of the property relative to prominent geographical features including, but not limited to, highways, roads, streams, and significant landmarks such as buildings, residences, schools, parks, hospitals, day care centers, and churches?	Yes
Does the map show a 3,000-foot radius from the property boundary?	Yes
D. Is a plot plan attached?	Yes
Does your plot plan clearly show a north arrow, an accurate scale, all property lines, all emission points, buildings, tanks, process vessels, other process equipment, and two bench mark locations?	Yes
Does your plot plan identify all emission points on the affected property, including all emission points authorized by other air authorizations, construction permits, PBRs, special permits, and standard permits?	Yes
Did you include a table of emission points indicating the authorization type and authorization identifier, such as a permit number, registration number, or rule citation under which each emission point is currently authorized?	Yes
E. Is a process flow diagram attached?	Yes
Is the process flow diagram sufficiently descriptive so the permit reviewer can determine the raw materials to be used in the process; all major processing steps and major equipment items; individual emission points associated with each process step; the location and identification of all emission abatement devices; and the location and identification of all waste streams (including wastewater streams that may have associated air emissions)?	Yes
F. Is a process description attached?	Yes
Does the process description emphasize where the emissions are generated, why the emissions must be generated, what air pollution controls are used (including process design features that minimize emissions), and where the emissions enter the atmosphere?	Yes
Does the process description also explain how the facility or facilities will be operating when the maximum possible emissions are produced?	Yes
G. Is a detailed list of requested actions included in the application? This list can be included in the project description.	Yes
H. Are detailed calculations attached? Calculations must be provided for each source with new or changing emission rates. For example, a new source, changing emission factors, decreasing emissions, consolidated sources, etc. Calculations do not need to be submitted for sources without any proposed emission rate changes. Note: the preferred format is an electronic workbook (such as Excel) with all formulas viewable for review.	Yes
Are emission rates and associated calculations for planned MSS facilities and related activities attached?	Yes
I. Is a material balance (Table 2, Form 10155) attached?	Yes

Table 2 (Form 10155), entitled Material Balance: A material balance representation may be required for all applications to confirm technical emissions information. Typically this is required for refining and chemical manufacturing processes involving reactions, separations, and blending. It may also be requested by the permit reviewer for other applications. Table 2 should represent the total material balance; that is, all streams into the system and all streams out. Additional sheets may be attached if necessary. Complex material balances may be presented on spreadsheets or indicated using process flow diagrams. All materials in the process should be addressed whether or not they directly result in the emission of an air contaminant. All production rates must be based on maximum operating conditions.	
J. Is a list of MSS activities attached?	Yes
Are the MSS activities listed and discussed separately, each complete with the authorization mechanism or emission rates, frequency, duration, and supporting information if authorized by this permit?	Yes
K. Is a discussion of state regulatory requirements attached, addressing 30 TAC Chapters 101, 111, 112, 113, 115, and 117?	Yes
For all applicable chapters, does the discussion include how the facility will comply with the requirements of the chapter?	Yes
For all not applicable chapters, does the discussion include why the chapter is not applicable?	Yes
L. Are all other required tables, calculations, and descriptions attached?	Yes

VII. Signature

The owner or operator of the facility must apply for authority to construct. The appropriate company official (owner, plant manager, president, vice president, or environmental director) must sign all copies of the application. The applicant's consultant cannot sign the application. **Important Note: Unless submitting through STEERS, signatures must be original in ink, not reproduced by photocopy, fax, or other means, and must be received before any permit is issued.**

The signature below confirms that I have knowledge of the facts included in this application and that these facts are true and correct to the best of my knowledge and belief. I further state that to the best of my knowledge and belief, the project for which application is made will not in any way violate any provision of the Texas Water Code (TWC), Chapter 7; the Texas Health and Safety Code, Chapter 382; the Texas Clean Air Act (TCAA); the air quality rules of the Texas Commission on Environmental Quality; or any local governmental ordinance or resolution enacted pursuant to the TCAA. I further state that I understand my signature indicates that this application meets all applicable nonattainment, prevention of significant deterioration, or major source of hazardous air pollutant permitting requirements. The signature further signifies awareness that intentionally or knowingly making or causing to be made false material statements or representations in the application is a criminal offense subject to criminal penalties.

Name:	Joe Almaraz
Signature:	
Original signature is required unless submitted through STEERS.	
Date:	September 30, 2021

I. Additional Questions for Specific NSR Minor Permit Actions

[redacted]

VIII. Federal Regulatory Questions	
Indicate if any of the following requirements apply to the proposed facility. Note that some federal regulations apply to minor sources. Enter all applicable Subparts.	
A. Title 40 CFR Part 60	
Do NSPS subpart(s) apply to a facility in this application?	Yes
List applicable subparts you will demonstrate compliance with (e.g. Subpart M)	Subparts A, J, Ja, K, Ka, Kb, VV, XX, GGG, NNN, QQQ, RRR
B. Title 40 CFR Part 61	

Do NESHAP subpart(s) apply to a facility in this application?	Yes
List applicable subparts you will demonstrate compliance with (e.g. Subpart BB)	Subparts A, M, FF
C. Title 40 CFR Part 63	
Do MACT subpart(s) apply to a facility in this application?	Yes
List applicable subparts you will demonstrate compliance with (e.g. Subpart VVVV)	Subparts A, F, G, H, R, Y, CC, UUU, DDDDD, GGGGG

IX. Emissions Review

A. Impacts Analysis

Any change that may result in an increase in off-property concentrations of air contaminants requires an air quality impacts demonstration, which may include a qualitative analysis, the MERA, and/or modeling. Information regarding the air quality impacts demonstration must be provided with the application and show compliance with all state and federal requirements. Detailed requirements for the information necessary to make the demonstration are listed on the Impacts sheet.

Are there any increases in short-term and/or long-term allowable emission rates?	Yes
Can all the emission rate increases be attributed to speciation of currently authorized PM emissions and/or revisions of AP-42 or TCEQ guidance?	No
Are there any new or modified control devices or emission sources?	Yes
Are there any changes to emission point discharge parameters? Consider all parameters on the Stack Parameters sheet, including location.	No
Will any PBR registrations, standard permit, or standard exemptions be incorporated by consolidation?	No
Does this project require an impacts analysis?	Yes
Will off property impacts for any of the pollutants require Tier III Toxicology Effects Evaluation as defined in Appendix D of MERA?	No

B. Disaster Review

If the proposed facility will handle sufficient quantities of certain chemicals which, if released accidentally, would cause off-property impacts that could be immediately dangerous to life and health, a disaster review analysis may be required as part of the application. Contact the appropriate NSR permitting section for assistance at (512) 239-1250. Additional Guidance can be found at the link below:

https://www.tceq.texas.gov/assets/public/permitting/air/Guidance/NewSourceReview/disrev-factsheet.pdf

Does this application involve any air contaminants for which a disaster review is required?	No

C. Air Pollutant Watch List

Certain areas of the state have concentrations of specific pollutants that are of concern. The TCEQ has designated these portions of the state as watch list areas. Location of a facility in a watch list area could result in additional restrictions on emissions of the affected air pollutant(s) or additional permit requirements. The location of the areas and pollutants of interest can be found at the link below:

https://www.tceq.texas.gov/toxicology/apwl/apwl.html

Is the proposed facility located in a watch list area?	No

D. Mass Emissions Cap and Trade	
Is this facility located at a site within the Houston/Galveston nonattainment area (Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, and Waller Counties)?	No

X. Additional Requirements	
A. Bulk Fuel Terminals	
Is this project for a bulk fuel terminal?	No
B. Plant Fuel Gas Facilities	
Does this site utilize plant fuel gas?	Yes

Texas Commission on Environmental Quality
Form PI-1 General Application
Unit Types - Emission Rates

Date: _April 2022_
Permit #: _38754_
Company: _Valero Refining - Texas, L.P._

Action Requested (only 1 action per FIN)	Include these emissions in annual (tpy) summary?	Facility ID Number (FIN)	Emission Point Number (EPN)	Source Name	Pollutant	Current Short-Term (lb/hr)	Current Long-Term (tpy)	Consolidated Current Short-Term (lb/hr)	Consolidated Current Long-Term (tpy)	Proposed Short Term (lb/hr)	Proposed Long-Term (tpy)	Short-Term Difference (lb/hr)	Long-Term Difference (tpy)	Unit Type (Used for reviewing BACT and Monitoring Requirements)	Unit Type Notes (only if "other" unit type in Column O)
New/Modified	Yes	Various	MSS Caps	MSS Caps	CO	2085.19	88.17			2085.19	128.91	0	40.74	MSS Activities	
					H2S	10.59	0.22			10.59	0.22	0	0		
					NH3	4.41	0.71			4.41	0.71	0	0		
					NOx	356.84	20.21			356.84	27.19	0	6.98		
					PM	79.52	2.21			79.52	3.76	0	1.55		
					PM10	79.52	1.37			79.52	2.92	0	1.55		
					PM2.5	79.52	1.37			79.52	2.92	0	1.55		
					SO2	996.29	37.23			996.29	38.89	0	1.66		
					VOC	578.44	69.65			578.44	70.04	0	0.3901		
					Exempt Solvents	1.76	0.6			1.76	0.6	0	0		
Not New/Modified	Yes	01-H-01	1	Heater - Crude Heater (01-H-01)	CO	8.1	20.13			8.1	20.13	0	0	Heater	
					NH3	0.05	0.17			0.05	0.17	0	0		
					NOx	9.72	19.24			9.72	19.24	0	0		
					PM	1.21	4			1.21	4	0	0		
					PM10	1.21	4			1.21	4	0	0		
					PM2.5	1.21	4			1.21	4	0	0		
					SO2	2.5	5.71			2.5	5.71	0	0		
					VOC	0.87	2.9			0.87	2.9	0	0		
Not New/Modified	Yes	01-H-02	131	Heater - Crude Preflash (01-H-02)	CO	0.62	2.71			0.62	2.71	0	0	Heater	
					NH3	<0.01	0.02			<0.01	0.02	0	0		
					NOx	1.77	6.29			1.77	6.29	0	0		
					PM	0.13	0.49			0.13	0.49	0	0		
					PM10	0.13	0.49			0.13	0.49	0	0		
					PM2.5	0.13	0.49			0.13	0.49	0	0		
					SO2	0.27	0.64			0.27	0.64	0	0		
					VOC	0.1	0.35			0.1	0.35	0	0		
Not New/Modified	Yes	01-H-03	132	Heater - Crude Stabilizer (01-H-03)	CO	0.17	0.72			0.17	0.72	0	0	Heater	
					NH3	<0.01	<0.01			<0.01	<0.01	0	0		
					NOx	0.48	2.06			0.48	2.06	0	0		
					PM	0.04	0.15			0.04	0.15	0	0		
					PM10	0.04	0.15			0.04	0.15	0	0		
					PM2.5	0.04	0.15			0.04	0.15	0	0		
					SO2	0.07	0.22			0.07	0.22	0	0		
					VOC	0.03	0.11			0.03	0.11	0	0		
Not New/Modified	Yes	02-H-01	74	Vacuum Heater	CO	4.99	16.77			4.99	16.77	0	0	Heater	
					NH3	0.03	0.14			0.03	0.14	0	0		
					NOx	5.98	26.21			5.98	26.21	0	0		
					PM	0.74	3.26			0.74	3.26	0	0		
					PM10	0.74	3.26			0.74	3.26	0	0		
					PM2.5	0.74	3.26			0.74	3.26	0	0		
					SO2	1.37	4.13			1.37	4.13	0	0		
					VOC	0.54	2.36			0.54	2.36	0	0		
Not New/Modified	Yes	11-H-01	114	Heater - Desalter Heater (11-H-01) -	CO	3.54	15.52			3.54	15.52	0	0	Heater	
					NH3	0.03	0.14			0.03	0.14	0	0		
					NOx	3.96	17.34			3.96	17.34	0	0		
					PM	0.74	3.23			0.74	3.23	0	0		
					PM10	0.74	3.23			0.74	3.23	0	0		
					PM2.5	0.74	3.23			0.74	3.23	0	0		
					SO2	1.52	4.6			1.52	4.6	0	0		
					VOC	0.53	2.34			0.53	2.34	0	0		
					H2S	0.02	0.05			0.02	0.05	0	0		
Not New/Modified	Yes	12-H-1A/B	115	HDS Heaters	CO	8.08	32.91			8.08	32.91	0	0	Heater	
					NH3	0.05	0.22			0.05	0.22	0	0		
					NOx	9.7	42.07			9.7	42.07	0	0		
					PM	1.2	5.22			1.2	5.22	0	0		
					PM10	1.2	5.22			1.2	5.22	0	0		
					PM2.5	1.2	5.22			1.2	5.22	0	0		
					SO2	2.49	7.45			2.49	7.45	0	0		
					VOC	0.87	3.78			0.87	3.78	0	0		
Not New/Modified	Yes	12-H02	116	Heater - HDS Pre-Heater (12-H-02)	CO	0.31	1.1			0.31	1.1	0	0	Heater	
					NH3	<0.01	0.02			<0.01	0.02	0	0		
					NOx	2.36	8.28			2.36	8.28	0	0		
					PM	0.15	0.51			0.15	0.51	0	0		
					PM10	0.15	0.51			0.15	0.51	0	0		
					PM2.5	0.15	0.51			0.15	0.51	0	0		
					SO2	0.3	0.73			0.3	0.73	0	0		
					VOC	0.11	0.37			0.11	0.37	0	0		
Not New/Modified	Yes	13-H-01B	118	Hydrogen Reformer Heater	CO	58.51	220.73			58.51	220.73	0	0	Heater	
					NH3	0.37	1.52			0.37	1.52	0	0		
					NOx	70.21	284.4			70.21	284.4	0	0		
					PM	8.72	35.8			8.72	35.8	0	0		
					PM10	8.72	35.8			8.72	35.8	0	0		
					PM2.5	8.72	35.8			8.72	35.8	0	0		
					SO2	44.53	122.64			44.53	122.64	0	0		
					VOC	9.95	25.91			9.95	25.91	0	0		

Action Requested (only 1 action per FIN)	Include these emissions in annual (tpy) summary?	Facility ID Number (FIN)	Emission Point Number (EPN)	Source Name	Pollutant	Current Short-Term (lb/hr)	Current Long-Term (tpy)	Consolidated Current Short-Term (lb/hr)	Consolidated Current Long-Term (tpy)	Proposed Short Term (lb/hr)	Proposed Long-Term (tpy)	Short-Term Difference (lb/hr)	Long-Term Difference (tpy)	Unit Type (Used for reviewing BACT and Monitoring Requirements)	Unit Type Notes (only if "other" unit type in Column O)
Not New/Modified	Yes	30-B-02	153	Heater - HR Boiler (30-B-02)	CO	8.46	28.94			8.46	28.94	0	0	Heater	
					NH3	0.09	0.33			0.09	0.33	0	0		
					NOx	22.56	82.34			22.56	82.34	0	0		
					PM	2.1	5.51			2.1	5.51	0	0		
					PM10	2.1	5.51			2.1	5.51	0	0		
					PM2.5	2.1	5.51			2.1	5.51	0	0		
					SO2	4.34	10.66			4.34	10.66	0	0		
					VOC	1.52	3.99			1.52	3.99	0	0		
Not New/Modified	Yes	30-B-04	30-B-04	Boiler 30-B-04	CO	19.84	48.14			19.84	48.14	0	0	Boiler: Liquid and Gas Fuel, > 40 MMBtu/hr	
					NH3	2.41	5.86			2.41	5.86	0	0		
					NOx	8.25	20.02			8.25	20.02	0	0		
					PM	4.1	9.95			4.1	9.95	0	0		
					PM10	4.1	9.95			4.1	9.95	0	0		
					PM2.5	4.1	9.95			4.1	9.95	0	0		
					SO2	8.65	14.47			8.65	14.47	0	0		
					VOC	2.97	7.2			2.97	7.2	0	0		
Not New/Modified	Yes	30-B-04	30-B-04MSS	Boiler 30-B-04	CO	198.55	3.57			198.55	3.57	0	0	Boiler: Liquid and Gas Fuel, > 40 MMBtu/hr	
					NOx	55	0.99			55	0.99	0	0		
Not New/Modified	Yes	31-H-01	117	Heater - Alky Frac. Reb. (31-H-01)	CO	2.51	8.83			2.51	8.83	0	0	Heater	
					NH3	0.05	0.17			0.05	0.17	0	0		
					NOx	5.64	19.86			5.64	19.86	0	0		
					PM	1.17	4.11			1.17	4.11	0	0		
					PM10	1.17	4.11			1.17	4.11	0	0		
					PM2.5	1.17	4.11			1.17	4.11	0	0		
					SO2	2.41	5.86			2.41	5.86	0	0		
					VOC	0.85	2.97			0.85	2.97	0	0		
Not New/Modified	Yes	36-H-01	120	Heater - Butamer Heater (36-H-01)	CO	0.27	0.98			0.27	0.98	0	0	Heater	
					NH3	<0.01	0.02			<0.01	0.02	0	0		
					NOx	2	4.3			2	4.3	0	0		
					PM	0.12	0.26			0.12	0.26	0	0		
					PM10	0.12	0.26			0.12	0.26	0	0		
					PM2.5	0.12	0.26			0.12	0.26	0	0		
					SO2	0.26	0.41			0.26	0.41	0	0		
					VOC	0.09	0.19			0.09	0.19	0	0		
Not New/Modified	Yes	38-H-01	162	Oleflex Heater	CO	19.45	69.49			19.45	69.49	0	0	Heater	
					NH3	0.12	0.49			0.12	0.49	0	0		
					NOx	23.34	65.75			23.34	65.75	0	0		
					PM	2.9	11.62			2.9	11.62	0	0		
					PM10	2.9	11.62			2.9	11.62	0	0		
					PM2.5	2.9	11.62			2.9	11.62	0	0		
					SO2	5.99	16.57			5.99	16.57	0	0		
					VOC	2.1	8.41			2.1	8.41	0	0		
Not New/Modified	Yes	46-H-01	119	Heater - Sulften Heater (46-H-01)	CO	0.35	1.49			0.35	1.49	0	0	Heater	
					NH3	0.01	0.03			0.01	0.03	0	0		
					NOx	2.62	5.21			2.62	5.21	0	0		
					PM	0.16	0.32			0.16	0.32	0	0		
					PM10	0.16	0.32			0.16	0.32	0	0		
					PM2.5	0.16	0.32			0.16	0.32	0	0		
					SO2	0.34	0.63			0.34	0.63	0	0		
					VOC	0.12	0.24			0.12	0.24	0	0		
Not New/Modified	Yes	47-H-04	150	HCU Heater	CO	6.1	24.38			6.1	24.38	0	0	Heater	
					NH3	0.06	0.26			0.06	0.26	0	0		
					NOx	12.19	48.76			12.19	48.76	0	0		
					PM	1.51	6.06			1.51	6.06	0	0		
					PM10	1.51	6.06			1.51	6.06	0	0		
					PM2.5	1.51	6.06			1.51	6.06	0	0		
					SO2	3.13	8.63			3.13	8.63	0	0		
					VOC	1.1	4.38			1.1	4.38	0	0		
Not New/Modified	Yes	48-H-01	151	Heater - NHU Heater (48-H-01)	CO	3.05	6.68			3.05	6.68	0	0	Heater	
					NH3	0.01	0.05			0.01	0.05	0	0		
					NOx	3.9	17.08			3.9	17.08	0	0		
					PM	0.29	1.27			0.29	1.27	0	0		
					PM10	0.29	1.27			0.29	1.27	0	0		
					PM2.5	0.29	1.27			0.29	1.27	0	0		
					SO2	0.6	1.81			0.6	1.81	0	0		
					VOC	0.21	0.92			0.21	0.92	0	0		
Not New/Modified	Yes	49-H-03	152	CRU Heater	CO	16.85	57.02			16.85	57.02	0	0	Heater	
					NH3	0.18	0.6			0.18	0.6	0	0		
					NOx	39.31	133.06			39.31	133.06	0	0		
					PM	4.18	14.16			4.18	14.16	0	0		
					PM10	4.18	14.16			4.18	14.16	0	0		
					PM2.5	4.18	14.16			4.18	14.16	0	0		
					SO2	9.8	22.69			9.8	22.69	0	0		
					VOC	3.03	10.25			3.03	10.25	0	0		
Not New/Modified	Yes	49-H-71	172	Heater - RSU Heater (49-H-71)	CO	3.3	12.72			3.3	12.72	0	0	Heater	
					NH3	0.02	0.08			0.02	0.08	0	0		

Texas Commission on Environmental Quality
Form PI-1 General Application
Unit Types - Emission Rates

Action Requested (only 1 action per FIN)	Include these emissions in annual (tpy) summary?	Facility ID Number (FIN)	Emission Point Number (EPN)	Source Name	Pollutant	Current Short-Term (lb/hr)	Current Long-Term (tpy)	Consolidated Current Short-Term (lb/hr)	Consolidated Current Long-Term (tpy)	Proposed Short Term (lb/hr)	Proposed Long-Term (tpy)	Short-Term Difference (lb/hr)	Long-Term Difference (tpy)	Unit Type (Used for reviewing BACT and Monitoring Requirements)	Unit Type Notes (only if "other" unit type in Column O)
					NOx	3.96	15.26			3.96	15.26	0	0		
					PM	0.49	1.9			0.49	1.9	0	0		
					PM10	0.49	1.9			0.49	1.9	0	0		
					PM2.5	0.49	1.9			0.49	1.9	0	0		
					SO2	1.02	2.7			1.02	2.7	0	0		
					VOC	0.36	1.37			0.36	1.37	0	0		
Not New/Modified	Yes	49-H-90	49-H-90	Heater - C7 Splitter Reb. (49-H-90)	CO	5.32	16.82			5.32	16.82	0	0	Heater	
					NH3	0.03	0.13			0.03	0.13	0	0		
					NOx	4.25	15.46			4.25	15.46	0	0		
					PM	0.79	3.01			0.79	3.01	0	0		
					PM10	0.79	3.01			0.79	3.01	0	0		
					PM2.5	0.79	3.01			0.79	3.01	0	0		
					SO2	1.64	4.29			1.64	4.29	0	0		
					VOC	0.57	2.18			0.57	2.18	0	0		
Not New/Modified	Yes	52-H-01	195	Heater - GDU Charge Heater (52-H-01)	CO	13.65	34.29			13.65	34.29	0	0	Heater	
					NH3	0.05	0.2			0.05	0.2	0	0		
					NOx	5.8	14.69			5.8	14.69	0	0		
					PM	1.23	4.61			1.23	4.61	0	0		
					PM10	1.23	4.61			1.23	4.61	0	0		
					PM2.5	1.23	4.61			1.23	4.61	0	0		
					SO2	2.55	6.57			2.55	6.57	0	0		
					VOC	0.89	3.34			0.89	3.34	0	0		
Not New/Modified	Yes	CRUDE UNIT	1F	Crude Unit	VOC							0	0	Fugitives: Piping and Equipment Leak	
Not New/Modified	Yes	VACUUMUNIT	2F	Vacuum Unit	H2S	0.02	0.08			0.02	0.08	0	0	Fugitives: Piping and Equipment Leak	
					VOC							0	0		
Not New/Modified	Yes	LEU-F	4F	LEU Unit	VOC							0	0	Fugitives: Piping and Equipment Leak	
Not New/Modified	Yes	11F-HDS	11F	Desalter Unit	VOC							0	0	Fugitives: Piping and Equipment Leak	
Not New/Modified	Yes	HDS-FUG	12F	HDS Unit	H2S	0.14	0.62			0.14	0.62	0	0	Fugitives: Piping and Equipment Leak	
					VOC							0	0		
Not New/Modified	Yes	SMR-FUG	13F	H2 Reformer	VOC							0	0	Fugitives: Piping and Equipment Leak	
Not New/Modified	Yes	HRLEU-FUG	18F	LEU -2	VOC							0	0	Fugitives: Piping and Equipment Leak	
Not New/Modified	Yes	LRU	20F	LRU	VOC							0	0	Fugitives: Piping and Equipment Leak	
New/Modified	Yes	HOC-FUG	21/22F	HOC	H2S	0.03	0.12			0.03	0.14	0	0.02	Fugitives: Piping and Equipment Leak	
					VOC							0	0		
Not New/Modified	Yes	30B03F	30F	Boiler House	VOC							0	0	Fugitives: Piping and Equipment Leak	
Not New/Modified	Yes	07-F	07F	#07 BUP Flare	VOC							0	0	Control: Flare	
Not New/Modified	Yes	ALKY-FUG	31F	Alky Unit	H2S	0.1	0.43			0.1	0.43	0	0	Fugitives: Piping and Equipment Leak	
					HF	0.52	2.29			0.52	2.29	0	0		
					VOC							0	0		
Not New/Modified	Yes	BUTAMER	36F	Butamer Unit	VOC							0	0	Fugitives: Piping and Equipment Leak	
Not New/Modified	Yes	MTBE-FUG	37F	Iso-Octene	VOC							0	0	Fugitives: Piping and Equipment Leak	
Not New/Modified	Yes	OLEFLEX-FU	38F	Oleflex Unit	VOC							0	0	Fugitives: Piping and Equipment Leak	
Not New/Modified	Yes	SRU-F	46-24F	SULF-10 Fugitives	H2S	0.1	0.43			0.1	0.43	0	0	Fugitives: Piping and Equipment Leak	
					VOC							0	0		
Not New/Modified	Yes	SRU-FUG	41F	SRU Unit Fugitives	H2S	0.02	0.09			0.02	0.09	0	0	Fugitives: Piping and Equipment Leak	
					VOC							0	0		
Not New/Modified	Yes	HCU-FUG	47F	HCU Unit	H2S	0.15	0.67			0.15	0.67	0	0	Fugitives: Piping and Equipment Leak	
					VOC							0	0		
Not New/Modified	Yes	47PSA	47PSA	PSA Unit	VOC							0	0	Fugitives: Piping and Equipment Leak	
Not New/Modified	Yes	NHT-FUG	48F	NHT Unit	H2S	0.01	0.06			0.01	0.06	0	0	Fugitives: Piping and Equipment Leak	
					VOC							0	0		
Not New/Modified	Yes	CRU-FUG	49F	CRU Unit	VOC							0	0	Fugitives: Piping and Equipment Leak	
Not New/Modified	Yes	49-XFU	175	XFU/RFU/C7Split Unit	VOC							0	0	Fugitives: Piping and Equipment Leak	
Not New/Modified	Yes	GDU-FUG	52F	GDU Unit	VOC							0	0	Fugitives: Piping and Equipment Leak	
Not New/Modified	Yes	DOCKS-F	DOCKS	DK-Docks	VOC							0	0	Fugitives: Piping and Equipment Leak	
Not New/Modified	Yes	08-F	08F	#08FLR/Day Tanks	VOC							0	0	Fugitives: Piping and Equipment Leak	
Not New/Modified	Yes	LPG STORAGE	LPG STGF	LPG STORAGE	VOC							0	0	Fugitives: Piping and Equipment Leak	
Not New/Modified	Yes	MVRUF	MVRUF	MVRU	VOC							0	0	Fugitives: Piping and Equipment Leak	
Not New/Modified	Yes	#TM-Terminal	TERM-F	#TM-Terminal	VOC							0	0	Fugitives: Piping and Equipment Leak	
Not New/Modified	Yes	PIPING-FUG	TRKRACKFUG	TRUCK RACK	VOC							0	0	Fugitives: Piping and Equipment Leak	
Not New/Modified	Yes	WWTP-FUG	83F	Wastewater Treatment Plant	VOC							0	0	Fugitives: Piping and Equipment Leak	
Not New/Modified	Yes	SHU-FUG	54F	Selective Hydrogenation Unit	VOC							0	0	Fugitives: Piping and Equipment Leak	
New/Modified	Yes	SWS-FUG	42F	Sour Water Stripper	H2S	<0.01	0.02			<0.01	0.02	0	0	Fugitives: Piping and Equipment Leak	
					VOC							0	0		
Not New/Modified	Yes	38-SCRUB	168	Oleflex CCR	Cl2	<0.01	0.04			<0.01	0.04	0	0	Control: Absorber	
					H2SO4	<0.01	0.01			<0.01	0.01	0	0		
					HCl	0.06	0.28			0.06	0.28	0	0		
					SO2	0.04	0.19			0.04	0.19	0	0		
Not New/Modified	Yes	73-TK-9	69	Tank - 9	VOC	3.1	0.49			3.1	0.49	0	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
Not New/Modified	Yes	HOC-CT	122	Cooling Tower - HOC	PM	17.71	65.86			3.54	13.17	-14.17	-52.69	Cooling Tower	
					PM10	16.82	62.58			3.36	12.52	-13.46	-50.06		
					PM2.5	2.63	9.78			0.53	1.96	-2.1	-7.82		
					VOC	5.67	21.09			5.67	21.09	0	0		
Not New/Modified	Yes	Alky-CT	123	Cooling Tower - Alky	PM	0.71	2			0.71	2	0	0	Cooling Tower	
					PM10	0.7	1.98			0.7	1.98	0	0		
					PM2.5	0.19	0.55			0.19	0.55	0	0		

Action Requested (only 1 action per FIN)	Include these emissions in annual (tpy) summary?	Facility ID Number (FIN)	Emission Point Number (EPN)	Source Name	Pollutant	Current Short-Term (lb/hr)	Current Long-Term (tpy)	Consolidated Current Short-Term (lb/hr)	Consolidated Current Long-Term (tpy)	Proposed Short Term (lb/hr)	Proposed Long-Term (tpy)	Short-Term Difference (lb/hr)	Long-Term Difference (tpy)	Unit Type (Used for reviewing BACT and Monitoring Requirements)	Unit Type Notes (only if "other" unit type in Column O)
					VOC	1.26	3.55			1.26	3.55	0	0		
Not New/Modified	Yes	BUP-CT	167-CT	Cooling Tower - BUP	PM	4.52	19.26			4.52	19.26	0	0	Cooling Tower	
					PM10	4.3	18.33			4.3	18.33	0	0		
					PM2.5	0.67	2.88			0.67	2.88	0	0		
					VOC	1.47	6.27			1.47	6.27	0	0		
Not New/Modified	Yes	Crude-CT	1CT	Cooling Tower - Crude	PM	0.34	1.13			0.34	1.13	0	0	Cooling Tower	
					PM10	0.34	1.11			0.34	1.11	0	0		
					PM2.5	0.06	0.21			0.06	0.21	0	0		
					VOC	0.17	0.55			0.17	0.55	0	0		
Not New/Modified	Yes	ENG-16P04	16-P-04	Engine - 16-P-04	CO	2.2	0.06			2.2	0.06	0	0	Engine: Emergency, Diesel	
					NOx	8	0.21			8	0.21	0	0		
					PM	0.73	0.02			0.73	0.02	0	0		
					PM10	0.73	0.02			0.73	0.02	0	0		
					PM2.5	0.73	0.02			0.73	0.02	0	0		
					SO2	0.68	0.02			0.68	0.02	0	0		
					VOC	0.83	0.02			0.83	0.02	0	0		
Not New/Modified	Yes	ENG-16P07	16-P-07	Engine - 16-P-07	CO	2.67	0.04			2.67	0.04	0	0	Engine: Emergency, Diesel	
					NOx	9.69	0.15			9.69	0.15	0	0		
					PM	0.88	0.01			0.88	0.01	0	0		
					PM10	0.88	0.01			0.88	0.01	0	0		
					PM2.5	0.88	0.01			0.88	0.01	0	0		
					SO2	0.82	0.01			0.82	0.01	0	0		
					VOC	1.01	0.02			1.01	0.02	0	0		
Not New/Modified	Yes	16-P-11	16-P-11	Engine - 16-P-11	CO	0.8	0.02			0.8	0.02	0	0	Engine: Emergency, Diesel	
					NOx	3.32	0.09			3.32	0.09	0	0		
					PM	0.11	<0.01			0.11	<0.01	0	0		
					PM10	0.11	<0.01			0.11	<0.01	0	0		
					PM2.5	0.11	<0.01			0.11	<0.01	0	0		
					SO2	0.1	<0.01			0.1	<0.01	0	0		
					VOC	0.12	<0.01			0.12	<0.01	0	0		
Not New/Modified	Yes	16-P-12	16-P-12	Engine - 16-P-12	CO	0.8	0.02			0.8	0.02	0	0	Engine: Emergency, Diesel	
					NOx	3.32	0.09			3.32	0.09	0	0		
					PM	0.11	<0.01			0.11	<0.01	0	0		
					PM10	0.11	<0.01			0.11	<0.01	0	0		
					PM2.5	0.11	<0.01			0.11	<0.01	0	0		
					SO2	0.1	<0.01			0.1	<0.01	0	0		
					VOC	0.12	<0.01			0.12	<0.01	0	0		
Not New/Modified	Yes	16-P-13	16-P-13	Engine - 16-P-13	CO	0.8	0.02			0.8	0.02	0	0	Engine: Emergency, Diesel	
					NOx	3.32	0.09			3.32	0.09	0	0		
					PM	0.11	<0.01			0.11	<0.01	0	0		
					PM10	0.11	<0.01			0.11	<0.01	0	0		
					PM2.5	0.11	<0.01			0.11	<0.01	0	0		
					SO2	0.1	<0.01			0.1	<0.01	0	0		
					VOC	0.12	<0.01			0.12	<0.01	0	0		
Not New/Modified	Yes	16-P-14	16-P-14	Engine - 16-P-14	CO	0.8	0.02			0.8	0.02	0	0	Engine: Emergency, Diesel	
					NOx	3.32	0.09			3.32	0.09	0	0		
					PM	0.11	<0.01			0.11	<0.01	0	0		
					PM10	0.11	<0.01			0.11	<0.01	0	0		
					PM2.5	0.11	<0.01			0.11	<0.01	0	0		
					SO2	0.1	<0.01			0.1	<0.01	0	0		
					VOC	0.12	<0.01			0.12	<0.01	0	0		
Not New/Modified	No	MFL-1	126	Main Flare	CO							0	0	Control: Flare	
					H2S							0	0		
					NOx							0	0		
					SO2							0	0		
					VOC							0	0		
Not New/Modified	No	GF-1	158	Ground Flare	CO							0	0	Control: Flare	
					H2S							0	0		
					NOx							0	0		
					SO2							0	0		
					VOC							0	0		
Not New/Modified	No	MTBE FL-2	127	BUP Flare	CO							0	0	Control: Flare	
					H2S							0	0		
					NOx							0	0		
					SO2							0	0		
					VOC							0	0		
Not New/Modified	No	135	135	Acid Gas Flare (pilot only)	CO							0	0	Control: Flare	
					H2S							0	0		
					NOx							0	0		
					SO2							0	0		
					VOC							0	0		
Not New/Modified	Yes	Various	FLARECAP	Flares Subcap	CO	113.27	121.03			113.27	121.03	0	0	Other	Emission Cap
Not New/Modified	Yes	Various	FLARECAP		H2S	0.04	0.11			0.04	0.11	0	0		
Not New/Modified	Yes	Various	FLARECAP		NOx	23.04	20.77			23.04	20.77	0	0		
Not New/Modified	Yes	Various	FLARECAP		SO2	3.55	10.43			3.55	10.43	0	0		
Not New/Modified	Yes	Various	FLARECAP		VOC	291.17	63.51			291.17	63.51	0	0		
Not New/Modified	Yes	BARGEDOCKS	31	Loading - Heavy Oil	VOC	14.96	4.72			14.96	4.72	0	0	Loading: Marine Vessel	
Not New/Modified	Yes	SHIP FUG	SHIP FUG	Loading - Ships Fugitives	VOC	237.46	91.74			237.46	91.74	0	0	Loading: Marine Vessel	
Not New/Modified	Yes	VRU	VRU	Loading - MVRU	VOC	61.33	23.13			61.33	23.13	0	0	Control: Adsorption System: Regenerative	

Texas Commission on Environmental Quality
Form PI-1 General Application
Unit Types - Emission Rates

Date: April 2022
Permit #: 38754
Company: Valero Refining - Texas, L.P.

Action Requested (only 1 action per FIN)	Include these emissions in annual (tpy) summary?	Facility ID Number (FIN)	Emission Point Number (EPN)	Source Name	Pollutant	Current Short-Term (lb/hr)	Current Long-Term (tpy)	Consolidated Current Short-Term (lb/hr)	Consolidated Current Long-Term (tpy)	Proposed Short Term (lb/hr)	Proposed Long-Term (tpy)	Short-Term Difference (lb/hr)	Long-Term Difference (tpy)	Unit Type (Used for reviewing BACT and Monitoring Requirements)	Unit Type Notes (only if "other" unit type in Column O)
Not New/Modified	Yes	LOADINGFUG	TRUCKFUG	Loading - Truck Fugitives	VOC	11.86	15.87			11.86	15.87	0	0	Loading: Truck	
Not New/Modified	Yes	T-RACK	TRUCKCOMB	Loading - Truck Combustor	CO	15.28	22.76			15.28	22.76	0	0	Control: Vapor Combustor	
					NO_x	7.64	11.38			7.64	11.38	0	0		
					SO_2	0.02	0.03			0.02	0.03	0	0		
					VOC	8.18	13.61			8.18	13.61	0	0		
					PM	0.23	0.34			0.23	0.34	0	0		
					PM10	0.23	0.34			0.23	0.34	0	0		
					PM2.5	0.23	0.34			0.23	0.34	0	0		
Not New/Modified	Yes	AE-49601A/B	AE-49601A/B	AE-49601A/B Analyzer Vent	VOC	0.01	0.01			0.01	0.01	0	0	Other	Analyzer Vent
Not New/Modified	Yes	AE-49900A/B	AE-49900A/B	AE-49900A/B Analyzer Vent	VOC	0.01	0.01			0.01	0.01	0	0	Other	Analyzer Vent
Not New/Modified	Yes	AE-49901A/B	AE-49901A/B	AE-49901A/B Analyzer Vent	VOC	0.01	0.01			0.01	0.01	0	0	Other	Analyzer Vent
New/Modified	Yes	24-ST-01	121	HOC Belco Scrubber	CO	889.96	1470.33			958.4	1559.15	*68.44*	*88.8201*	Fluid Catalytic Cracking Unit	
					HCN	80.47	320.4			80.47	320.4	0	0		
					H_2SO_4	49	214.62			49	199.3	0	**-15.32**		
					NH_3	4.84	17.88			4.84	17.88	0	0		
					NO_x	356.2	473.81			384.12	473.81	*27.92*	0		
					PM	120.32	527			140	569.4	*19.68*	*42.4*		
					PM10	120.32	527			140	569.4	*19.68*	*42.4*		
					PM2.5	120.32	527			140	569.4	*19.68*	*42.4*		
					SO_2	203.53	420.09			223.08	437.03	*19.55*	*16.94*		
					VOC	28.02	115.53			30.42	123.79	*2.4*	*8.26*		
					H_2S					0.001016496	0.004452251	*0.0011*	*0.0045*		
					CO_2						2451673	0	*2451673*		
					CH_4						72.08	0	*72.08*		
					N_2O						14.42	0	*14.42*		
					CO_2 Equivalent						2457772	0	*2457772*		
Not New/Modified	Yes	SCOT/SRU	121	SRU Incinerators Cap	CO	220.75	678.85			220.75	678.85	0	0	SRU: Refinery	
					H_2S	5.82	18.73			5.82	18.73	0	0		
					NO_x	54.64	239.31			54.64	239.31	0	0		
					PM	24.72	98.38			24.72	98.38	0	0		
					PM10	24.72	98.38			24.72	98.38	0	0		
					PM2.5	24.72	98.38			24.72	98.38	0	0		
					SO_2	191.32	837.99			191.32	837.99	0	0		
					VOC	0.96	3.46			0.96	3.46	0	0		
Not New/Modified	Yes	SCOT/SRU	121	Temporary SRU Stack	CO	10.04	7.23			10.04	7.23	0	0	SRU: Refinery	
					H_2S	0.047	0.03			0.047	0.03	0	0		
					NO_x	1.233	0.72			1.233	0.72	0	0		
					PM	1.205	0.87			1.205	0.87	0	0		
					PM10	1.205	0.87			1.205	0.87	0	0		
					PM2.5	1.205	0.87			1.205	0.87	0	0		
					SO_2	13.816	9.95			13.816	9.95	0	0		
New/Modified	Yes	Various	FUG-CAP	Fugitives Subcap	VOC	105.75	462.99			112.45	492.32	*6.7*	*29.33*	Fugitives: Piping and Equipment Leak	
					H_2S	0.58	2.52			0.592839649	2.576237661	*0.0129*	*0.0563*		
					NH_3	0	0			0.01	0.06	*0.01*	*0.06*		
					CH_4						3.59	0	*3.59*		
					CO_2 Equivalent						90	0	*90*		
Not New/Modified	Yes	49-SCRUB	155	CRU CCR	HCl	0.07	0.29			0.07	0.29	0	0	Control: Absorber	
Not New/Modified	Yes	13-H-01B	118	SMR Condenser Vent	VOC	3.64	15.94			3.64	15.94	0	0	Process Vent	
Not New/Modified	Yes	MAGNACAT	21 BH	MAGNACAT Unit	PM	0.18	0.6			0.18	0.6	0	0	Control: Bag Filter/Baghouse	
					PM10	0.18	0.6			0.18	0.6	0	0		
					PM2.5	0.18	0.6			0.18	0.6	0	0		
Not New/Modified	Yes	83-TK-25	187	Tank 25	H_2S	0.02	0.04			0.02	0.04	0	0	Storage Tank (4): Floating roof with TVP <11.0 psia	
					NH_3	<0.01	<0.01			<0.01	<0.01	0	0		
					VOC	1.43	5.33			1.43	5.33	0	0		
Not New/Modified	Yes	ENG-83P136A	83-P-136A	Engine 83-P-136A-EN	CO	2.48	0.06			2.48	0.06	0	0	Engine: Emergency, Diesel	
					NO_x	7.43	0.19			7.43	0.19	0	0		
					PM	0.38	<0.01			0.38	<0.01	0	0		
					PM10	0.38	<0.01			0.38	<0.01	0	0		
					PM2.5	0.38	<0.01			0.38	<0.01	0	0		
					SO_2	0.88	0.02			0.88	0.02	0	0		
					VOC	7.43	0.19			7.43	0.19	0	0		
Not New/Modified	Yes	ENG-83P136B	83-P-136B	Engine 83-P-136B-EN	CO	2.48	0.06			2.48	0.06	0	0	Engine: Emergency, Diesel	
					NO_x	7.43	0.19			7.43	0.19	0	0		
					PM	0.38	<0.01			0.38	<0.01	0	0		
					PM10	0.38	<0.01			0.38	<0.01	0	0		
					PM2.5	0.38	<0.01			0.38	<0.01	0	0		
					SO_2	0.88	0.02			0.88	0.02	0	0		
					VOC	7.43	0.19			7.43	0.19	0	0		
Not New/Modified	Yes	WWTP-OWS	WWTP-OWS	WW collection system	VOC	8.62	37.77			8.62	37.77	0	0	Wastewater Facilities	

VAL_000450

Action Requested (only 1 action per FIN)	Include these emissions in annual (tpy) summary?	Facility ID Number (FIN)	Emission Point Number (EPN)	Source Name	Pollutant	Current Short-Term (lb/hr)	Current Long-Term (tpy)	Consolidated Current Short-Term (lb/hr)	Consolidated Current Long-Term (tpy)	Proposed Short Term (lb/hr)	Proposed Long-Term (tpy)	Short-Term Difference (lb/hr)	Long-Term Difference (tpy)	Unit Type (Used for reviewing BACT and Monitoring Requirements)	Unit Type Notes (only if "other" unit type in Column O)
Not New/Modified	Yes	83-TK-26	186	Tank 26	VOC	0.12	0.45			0.12	0.45	0	0	Storage Tank (4): Floating roof with TVP <11.0 psia	
Not New/Modified	Yes	83-TK-159	184	Tank 159	VOC	0.15	0.39			0.15	0.39	0	0	Storage Tank (4): Floating roof with TVP <11.0 psia	
Not New/Modified	Yes	83-TK-160	185	Tank 160	VOC	0.15	0.39			0.15	0.39	0	0	Storage Tank (4): Floating roof with TVP <11.0 psia	
Not New/Modified	Yes	83-V-97	83-V-97	Tank 97	VOC	0.18	0.4			0.18	0.4	0	0	Storage Tank (4): Floating roof with TVP <11.0 psia	
Not New/Modified	Yes	83-V-58	83-V-58	Tank 58	VOC	0.11	0.44			0.11	0.44	0	0	Storage Tank (4): Floating roof with TVP <11.0 psia	
Not New/Modified	Yes	83-V-59	83-V-59	Tank 59	VOC	0.11	0.44			0.11	0.44	0	0	Storage Tank (4): Floating roof with TVP <11.0 psia	
Not New/Modified	Yes	83-TK-162	183a	Tank 162	VOC	0.39	1.77			0.39	1.77	0	0	Storage Tank (4): Floating roof with TVP <11.0 psia	
Not New/Modified	Yes	83-TK-155	182	Tank 155	VOC	0.39	1.77			0.39	1.77	0	0	Storage Tank (4): Floating roof with TVP <11.0 psia	
Not New/Modified	Yes	APISEP	124	API/DGF Combustor	CO	1.65	7.22			1.65	7.22	0	0	Control: Vapor Combustor	
					NOx	0.45	1.76			0.45	1.76	0	0		
					SO2	0.03	0.13			0.03	0.13	0	0		
					VOC	2.94	12.88			2.94	12.88	0	0		
Not New/Modified	Yes	83-TK-23	62	Equalization Tank	VOC	0.81	3.51			0.81	3.51	0	0	Storage Tank (4): Floating roof with TVP <11.0 psia	
Not New/Modified	Yes	83-TK27	83-TK27	Bio Oxidation Reactor Tank	VOC	0.51	2.22			0.51	2.22	0	0	Wastewater Facilities	
Not New/Modified	Yes	WWTP-AERB	WWTP-AERB	Aeration Basin	VOC	0.25	1.09			0.25	1.09	0	0	Wastewater Facilities	
Not New/Modified	Yes	WWTP-CLRF	WWTP-CLRF	Clarifier	VOC	<0.01	0.04			<0.01	0.04	0	0	Wastewater Facilities	
Not New/Modified	Yes	WWTP-SLB	WWTP-SLB	Saline Basin	VOC	<0.01	<0.01			<0.01	<0.01	0	0	Wastewater Facilities	
Not New/Modified	Yes	CAS01-01	01-01	Crude/Vacuum Unit Pump Alley	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS01-02	01-02	North Side of Vacuum Unit	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS01-03	01-03	North Side of Vacuum Unit	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS01-04	01-04	Northwest Side of Vacuum Unit - Main Sump	VOC	<0.01	0.03			<0.01	0.03	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS03-01	03-01	N of Tanks 156/161	VOC	0.02	0.08			0.02	0.08	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS98-02	98-02	WP MSAT Rail Rack	VOC	0.02	0.08			0.02	0.08	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS11-01	11-01	Desalter Pump Alley	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS41-01	41-01	North of 43-TK-08 (Amine Tank)	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS41-02	41-02	W of 41-V-05 (Acid Gas K.O. Drum)	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS49-01	49-01	Northwest of XFU	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS49-02	49-02	North Side of NHT (Unit 48)	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS49-03	49-03	NHT (Unit 48) Pump Alley	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS50-01	50-01	East of Tank 62	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS52-01	52-01	NW of GDU MCC Room	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS70-01	70-01	East of Tank 55	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS70-02	70-02	Northwest of Tank 106	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS70-03	70-03	West of Tank 94 (S&D Main Sump)	VOC	<0.01	0.03			<0.01	0.03	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS72-01	72-01	East of Tank 111	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS73-01	73-01	North of Tank 152 (Terminal 2A)	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS73-02	73-02	Between TK 8 & TK 164 (Terminal 2)	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS83-01	83-01	WWT (Hydroblast Pad)	VOC	0.02	0.07			0.02	0.07	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS83-02	83-02	WWT (Desalter Lift Station)	VOC	0.01	0.05			0.01	0.05	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS83-03	83-03	WWT (East of KOH Treater)	VOC	0.02	0.07			0.02	0.07	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS83-04	83-04	WWT (Northeast of Tank 159)	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS83-05	83-05	WWT (North Lift Station)	VOC	<0.01	0.03			<0.01	0.03	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS83-06	83-06	WWT (North of V-68)	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS83-07	83-07	WWT (South of V-55)	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS83-09	83-09	WWT (BSRP)	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	83-10	83-10	WWT 83-V-99 (Diversion Box)	VOC	0.02	0.07			0.02	0.07	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	83-12	83-12	WWT 83-V-28 (SE of Catalyst Pad)	VOC	0.02	0.07			0.02	0.07	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS98-01	V-201	WP MSAT Rail Rack	VOC	0.51	2.23			0.51	2.23	0	0	Control: Adsorption System: Disposable	

Date: _April 2022_
Permit #: _38754_
Company: _Valero Refining - Texas, L.P._

Texas Commission on Environmental Quality
Form PI-1 General Application
Unit Types - Emission Rates

Action Requested (only 1 action per FIN)	Include these emissions in annual (tpy) summary?	Facility ID Number (FIN)	Emission Point Number (EPN)	Source Name	Pollutant	Current Short-Term (lb/hr)	Current Long-Term (tpy)	Consolidated Current Short-Term (lb/hr)	Consolidated Current Long-Term (tpy)	Proposed Short Term (lb/hr)	Proposed Long-Term (tpy)	Short-Term Difference (lb/hr)	Long-Term Difference (tpy)	Unit Type (Used for reviewing BACT and Monitoring Requirements)	Unit Type Notes (only if "other" unit type in Column O)
Not New/Modified	Yes	APISEP	124a	WP WWT API Combustor Backup	VOC	0.02	0.08			0.02	0.08	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	16-V-11	16-V-11	FWP 16-P-11 Diesel Tank	VOC	0.03	<0.01			0.03	<0.01	0	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
Not New/Modified	Yes	16-V-12	16-V-12	FWP 16-P-12 Diesel Tank	VOC	0.03	<0.01			0.03	<0.01	0	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
Not New/Modified	Yes	16-V-13	16-V-13	FWP 16-P-13 Diesel Tank	VOC	0.03	<0.01			0.03	<0.01	0	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
Not New/Modified	Yes	16-V-14	16-V-14	FWP 16-P-14 Diesel Tank	VOC	0.03	<0.01			0.03	<0.01	0	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
Not New/Modified	Yes	FWP-FUG	FWP-FUG	Firewater Pump Engine Fugitives	VOC	0.06	0.26			0.06	0.26	0	0	Fugitives: Piping and Equipment Leak	
New/Modified	Yes	30-B-05	30-B-05	Boiler 30-B-05	CO	0	0			33.48	70.84	33.48	70.84	Boiler: Liquid and Gas Fuel, > 40 MMBtu/hr	
					NH3	0	0			2.18	8.68	2.18	8.68		
					NOx	0	0			7.16	30.14	7.16	30.14		
					PM	0	0			3.56	14.16	3.56	14.16		
					PM10	0	0			3.56	14.16	3.56	14.16		
					PM2.5	0	0			3.56	14.16	3.56	14.16		
					SO2	0	0			11.56	38.06	11.56	38.06		
					VOC	0	0			2.81	11.3	2.81	11.3		
					H2S	0	0			0.001016496	0.004452251	0.0011	0.0045		
					CO2	0	0				222364	0	222364		
					CH4	0	0				4.19	0	4.19		
					N2O	0	0				0.42	0	0.42		
					CO2 Equivalent	0	0				222594	0	222594		
New/Modified	Yes	30-B-05	30-B-05	Boiler 30-B-05 (MSS)	CO	0	0			167.39	0	167.39	0	Boiler: Liquid and Gas Fuel, > 40 MMBtu/hr	
					NOx	0	0			71.61	0	71.61	0		
New/Modified	Yes	HOC-PP-CT	HOC-PP-CT	Cooling Tower - Propylene Project	PM	0	0			0.78	3.42	0.78	3.42	Cooling Tower	
					PM10	0	0			0.18	0.81	0.18	0.81		
					PM2.5	0	0			<0.01	0.005	0.01	0.005		
					VOC	0	0			1.09	4.78	1.09	4.78		
New/Modified	Yes	XX-01	XX-01	HOC PP Gas Plant CAS	VOC	0	0			<0.01	0.02	0.01	0.02	Control: Adsorption System: Disposable	
New/Modified	Yes	MEROX	121/ 30-B-05		VOC							0	0	Process Vent	
					SO2							0	0		
					H2S							0	0		
												0	0		
												0	0		
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Texas Commission on Environmental Quality
Form PI-1 General Application
Stack Parameters

Emission Point Discharge Parameters												
EPN	Included in EMEW?	UTM Coordinates Zone	East (Meters)	North (Meters)	Building Height (ft)	Height Above Ground (ft)	Stack Exit Diameter (ft)	Velocity (FPS)	Temperature (°F)	Fugitives - Length (ft)	Fugitives - Width (ft)	Fugitives - Axis Degrees
MSS Caps	Yes											
1	Yes											
131	Yes											
132	Yes											
74	Yes											
114	Yes											
115	Yes											
116	Yes											
118	Yes											
153	Yes											
30-B-04	Yes											
30-B-04MSS	Yes											
117	Yes											
120	Yes											
162	Yes											
119	Yes											
150	Yes											
151	Yes											
152	Yes											
172	Yes											
49-H-90	Yes											
195	Yes											
1F	Yes											
2F	Yes											
4F	Yes											
11F	Yes											
12F	Yes											
13F	Yes											
18F	Yes											
20F	Yes											
21/22F	Yes											
30F	Yes											
07F	Yes											
31F	Yes											
36F	Yes											
37F	Yes											
38F	Yes											
46-24F	Yes											
41F	Yes											
47F	Yes											
47PSA	Yes											
48F	Yes											

Texas Commission on Environmental Quality
Form PI-1 General Application
Stack Parameters

EPN	Included in EMEW?	UTM Coordinates Zone	East (Meters)	North (Meters)	Building Height (ft)	Height Above Ground (ft)	Stack Exit Diameter (ft)	Velocity (FPS)	Temperature (°F)	Fugitives - Length (ft)	Fugitives - Width (ft)	Fugitives - Axis Degrees
49F	Yes											
175	Yes											
52F	Yes											
DOCKS	Yes											
08F	Yes											
LPG STGF	Yes											
MVRUF	Yes											
TERM-F	Yes											
TRKRACKFUG	Yes											
83F	Yes											
54F	Yes											
42F	Yes											
168	Yes											
69	Yes											
122	Yes											
123	Yes											
167-CT	Yes											
1CT	Yes											
16-P-04	Yes											
16-P-07	Yes											
16-P-11	Yes											
16-P-12	Yes											
16-P-13	Yes											
16-P-14	Yes											
126	Yes											
158	Yes											
127	Yes											
135	Yes											
FLARECAP	Yes											
31	Yes											
SHIP FUG	Yes											
VRU	Yes											
TRUCKFUG	Yes											
TRUCKCOMB	Yes											
AE-49601A/B	Yes											
AE-49900A/B	Yes											
AE-49901A/B	Yes											
121	Yes											
FUG-CAP	Yes											
155	Yes											
21 BH	Yes											
187	Yes											
83-P-136A	Yes											

Texas Commission on Environmental Quality
Form PI-1 General Application
Stack Parameters

Date: April 2022
Permit #: 38754
Company: Valero Refining - Texas, L.P.

EPN	Included in EMEW?	UTM Coordinates Zone	East (Meters)	North (Meters)	Building Height (ft)	Height Above Ground (ft)	Stack Exit Diameter (ft)	Velocity (FPS)	Temperature (°F)	Fugitives - Length (ft)	Fugitives - Width (ft)	Fugitives - Axis Degrees
83-P-136B	Yes											
WWTP-OWS	Yes											
186	Yes											
184	Yes											
185	Yes											
83-V-97	Yes											
83-V-58	Yes											
83-V-59	Yes											
183a	Yes											
182	Yes											
124	Yes											
62	Yes											
83-TK27	Yes											
WWTP-AERB	Yes											
WWTP-CLRF	Yes											

Texas Commission on Environmental Quality
Form PI-1 General Application
Public Notice

Date: April 2022
Permit #: 38754
Company: Valero Refining - Texas, L.P.

I. Public Notice Applicability	
A. Application Type	
Is this an application for a new or major modification of a PSD (including GHG), Nonattainment, or HAP permit?	Yes
Is this an application for a minor permit amendment?	Yes
Is there any change in character of emissions in this application (such as a new VOC or PM species)?	No
Is there a new air contaminant in this application (such as a newly emitted or newly quantified criteria pollutant)?	No

B. Project Increases and Public Notice Thresholds (for Initial and Amendment Projects)

For public notice applicability, the agency does not include consolidation or incorporation of any previously authorized facility or activity (PBR, standard permits, etc.), changes to permitted allowable emission rates when exclusively due to changes to standardized emission factors, or reductions in emissions which are not enforceable through the amended permit. Thus, the total emissions increase would be the sum of emissions increases under the amended permit and the emissions decreases under the amended permit for each air contaminant.

The table below will generate emission increases based on the values represented on the "Unit Types - Emission Rates" sheet. Use the "yes" and "no" options in column B of the "Unit Types - Emission Rates" worksheet to indicate if a unit's proposed change of emissions should be included in these totals.

Notes:

1. Emissions of PM, PM10, and/or PM2.5 may have been previously quantified and authorized as PM, PM10,and/or PM2.5. These emissions will be speciated based on current guidance and policy to demonstrate compliance with current standards and public notice requirements may change during the permit review.

This row is optional. If you do not think the table below accurately represents public notice applicability increases for your project, provide discussion here (1000 characters).	
Do the facilities handle, load, unload, dry, manufacture, or process grain, seed, legumes, or vegetable fibers (agricultural facilities)?	No

Pollutant	Current Long-Term (tpy)	Consolidated Emissions (tpy)	Proposed Long-Term (tpy)	Project Change in Allowable (tpy)	PN Threshold	Notice required?
VOC	1068.64	0.00	1122.72	54.08	5	Yes
PM	833.18	0.00	842.02	8.84	5	Yes*
PM_{10}	828.09	0.00	836.95	8.86	5	Yes*
$PM_{2.5}$	757.51	0.00	807.81	50.30	5	Yes*
NO_x	1617.73	0.00	1654.85	37.12	5	Yes
CO	3019.83	0.00	3220.23	200.40	50	Yes
SO_2	1557.56	0.00	1614.22	56.66	10	Yes
Pb	0.00	0.00	0.00	0.00	0.6	No
H2S	24.22	0	24.30514216	0.085142162	5	No
NH3	29.06	0	37.8	8.74	5	Yes
Exempt Solvents	0.6	0	0.6	0	5	No
HF	2.29	0	2.29	0	5	No
Cl2	0.04	0	0.04	0	5	No
H2SO4	214.63	0	199.31	-15.32	5	No
HCl	0.57	0	0.57	0	5	No
HCN	320.4	0	320.4	0	5	No
CO2	0	0	2674037	2674037	5	Yes
CH4	0	0	79.86	79.86	5	Yes
N2O	0	0	14.84	14.84	5	Yes
CO2 Equivalent	0	0	2680456	2680456	**	Yes

* Notice is required for PM, PM10, and PM2.5 if one of these pollutants is above the threshold.

** Notice of a GHG action is determined by action type. Initial and major modification always require notice. Voluntary updates require a consolidated notice if there is a change to BACT. Project emission increases of CO2e (CO2 equivalent) are not relevant for determining public notice of GHG permit actions.

D. Is public notice required for this project as represented in this PI-1? If no, proceed to Section III Small Business Classification. Note: public notice applicability for this project may change throughout the technical review.	Yes
E. Are any HAPs to be authorized/re-authorized with this project? The category "HAPs" must be specifically listed in the public notice if the project authorizes (reauthorizes for renewals) any HAP pollutants.	No

II. Public Notice Information

Complete this section if public notice is required (determined in the above section) or if you are not sure if public notice is required.

A. Contact Information

Enter the contact information for the **person responsible for publishing.** This is a designated representative who is responsible for ensuring public notice is properly published in the appropriate newspaper and signs are posted at the facility site. This person will be contacted directly when the TCEQ is ready to authorize public notice for the application.

Prefix (Mr., Ms., Dr., etc.):	Ms.
First Name:	Meagan
Last Name:	Marquard
Title:	Superintendent Environmental
Company Name:	Valero Refining - Texas, L.P.

Mailing Address:	PO Box 9370
Address Line 2:	
City:	Corpus Christi
State:	TX
ZIP Code:	78469
Telephone Number:	361-299-8913
Fax Number:	361-289-3126
Email Address:	Meagan.Marquard@valero.com

Enter the contact information for the **Technical Contact.** This is the designated representative who will be listed in the public notice as a contact for additional information.

Prefix (Mr., Ms., Dr., etc.):	Ms.
First Name:	Meagan
Last Name:	Marquard
Title:	Superintendent Environmental
Company Name:	Valero Refining - Texas, L.P.
Mailing Address:	PO Box 9370
Address Line 2:	
City:	Corpus Christi
State:	TX
ZIP Code:	78469
Telephone Number:	361-299-8913
Fax Number:	361-289-3126
Email Address:	Meagan.Marquard@valero.com

B. Public place

Place a copy of the full application (including the entire completed PI-1 and all attachments) at a public place in the county where the facilities are or will be located. You must state where in the county the application will be available for public review and comment. The location must be a public place and described in the notice. A public place is a location which is owned and operated by public funds (such as libraries, county courthouses, city halls) and cannot be a commercial enterprise. You are required to pre-arrange this availability with the public place indicated below. The application must remain available from the first day of publication through the designated comment period.

If this is an application for a PSD, nonattainment, or FCAA §112(g) permit, the public place must have internet access available for the public as required in 30 TAC § 39.411(f)(3).

If the application is submitted to the agency with information marked as Confidential, you are required to indicate which specific portions of the application are not being made available to the public. These portions of the application must be accompanied with the following statement: ***Any request for portions of this application that are marked as confidential must be submitted in writing, pursuant to the Public Information Act, to the TCEQ Public Information Coordinator, MC 197, P.O. Box 13087, Austin, Texas 78711-3087.***

Name of Public Place:	Owen R. Hopkins Public Library
Physical Address:	3202 McKenzie Road
Address Line 2:	
City:	Corpus Christi
ZIP Code:	78410
County:	Nueces
Has the public place granted authorization to place the application for public viewing and copying?	Yes
Does the public place have Internet access available for the public?	Yes

C. Alternate Language Publication

In some cases, public notice in an alternate language is required. If an elementary or middle school nearest to the facility is in a school district required by the Texas Education Code to have a bilingual program, a bilingual notice will be required. If there is no bilingual program required in the school nearest the facility, but children who would normally attend those schools are eligible to attend bilingual programs elsewhere in the school district, the bilingual notice will also be required. If it is determined that alternate language notice is required, you are responsible for ensuring that the publication in the alternate language is complete and accurate in that language.

Is a bilingual program required by the Texas Education Code in the School District?	Yes
Are the children who attend either the elementary school or the middle school closest to your facility eligible to be enrolled in a bilingual program provided by the district?	Yes
If yes to either question above, list which language(s) are required by the bilingual program.	Spanish
Enter the second required language, if applicable.	
Enter the third required language, if applicable.	
Enter the fourth required language, if applicable.	

D. PSD and Nonattainment Permits Only

If this is an application for emissions of GHGs, select either "Separate Public Notice" or "Consolidated Public Notice". Note: Separate public notices requires a separate application.	Consolidated Public Notice

We must notify the applicable county judge and presiding officer when a PSD or Nonattainment permit or modification application is received. This information can be obtained at the link below:

https://www.txdirectory.com

Provide the information for the **County Judge** for the location where the facility is or will be located.

The Honorable:	Barbara Canales
Mailing Address:	901 Leopard, Room 303
Address Line 2:	
City:	Corpus Christi
State:	Texas
ZIP Code:	78401

Provide the information for the **Presiding Officer(s)** of the municipality for this facility site. This is frequently the Mayor.

First Name:	Paulette
Last Name:	Guajardo
Title:	Mayor
Mailing Address:	P.O. Box 9277
Address Line 2:	
City:	Corpus Christi
State:	Texas
ZIP Code:	78469
Are the proposed facilities located within 100 km or less of an affected state or Class I Area?	No

Date: April 2022
Permit #: 38754
Company: Valero Refining - Texas, L.P.

III. Small Business Classification	
Complete this section to determine small business classification. If a small business requests a permit, agency rules (30 TAC § 39.603(f)(1)(A)) allow for alternative public notification requirements if all of the following criteria are met. If these requirements are met, public notice does not have to include publication of the prominent (12 square inch) newspaper notice.	
Does the company (including parent companies and subsidiary companies) have fewer than 100 employees or less than $6 million in annual gross receipts?	No
Small business classification:	**No**

Date: April 2022
Permit #: 38754
Company: Valero Refining - Texas, L.P.

I. County Classification	
Does the project require retrospective review?	No
County (completed for you from your response on the General sheet)	Nueces
This project will be located in an area that is in attainment for ozone as of Sept. 23, 2019. Select from the drop-down list to the right if you would like the project to be reviewed under a different classification.	
Determination:	**This project will be located in an area that is in attainment or unclassified for all pollutants. Nonattainment review is not required.**

II. PSD and GHG PSD Applicability Summary

Is netting required for the PSD analysis for this project?	**Yes**

If yes, the project increases listed below should be after netting has been performed. Attach the netting information to the application.

Pollutant	Project Increase (after netting)	Threshold	PSD Review Required?
CO	413.3	100	Yes
NO_x	298.8	40	Yes
PM	241.7	25	Yes
PM_{10}	239.1	15	Yes
$PM_{2.5}$	238.3	10	Yes
SO_2	447.7	40	Yes
Ozone (as VOC)	110.7	40	Yes
Ozone (as NOx)	298.8	40	Yes
Pb	0	0.6	No
H_2S	0.6	10	No
TRS	0.6	10	No
Reduced sulfur compounds (including H_2S)	0.6	10	No
H_2SO_4	168.6	7	Yes
Fluoride (excluding HF)	0	3	No
CO2e	1110869	75000	Yes

I. Expedited Permitting Request	
Are you requesting to expedite this project?	Yes
Does the purpose of the application associated with this request to expedite benefit the economy of this state or an area of this state? If no, this project does not qualify for expedited permitting.	Yes
Surcharge amount due	$ 20,000.00
Surcharge amount paid	$ 20,000.00
Enter the check, money order, ePay Voucher, or other transaction number.	ePay Voucher No. 530715
You must request expedited processing and pay the fee through STEERS when submitting your ePermit application.	

II. General Information - Non-Renewal	
Is this project for new facilities controlled and operated directly by the federal government? (30 TAC § 116.141(b)(1) and 30 TAC § 116.163(a))	No
A fee of $75,000 shall be required if no estimate of capital project cost is included with the permit application. (30 TAC § 116.141(d)) Select "yes" here to use this option.	Yes
Select Application Type	Major Application

In signing the "General" sheet with this fee worksheet attached, I certify that the total estimated capital cost of the project as defined in 30 TAC §116.141 is equal to or less than the above figure. I further state that I have read and understand Texas Water Code § 7.179, which defines Criminal Offenses for certain violations, including intentionally or knowingly making, or causing to be made, false material statements or representations.

Your estimated capital cost:	Maximum fee appies.
Permit Application Fee:	**$75,000.00**

VII. Total Permit Fees	
Note: fees can be paid together with one payment or as two separate payments.	
Non-Renewal Fee	$75,000.00
Total	$75,000.00

VIII. Payment Information	
A. Payment One (required)	
Was the fee paid online?	Yes
Enter the fee amount:	$ 75,000.00
Enter the check, money order, ePay Voucher, or other transaction number (enter "STEERS" if submitting and paying through STEERS):	ePay Voucher No. 530714 STEERS
Enter the Company name as it appears on the check:	

C. Total Paid	**$75,000.00**

IX. Professional Engineer Seal Requirement	
Is the estimated capital cost of the project above $2 million?	Yes
Is this project subject to an exemption contained in the Texas Engineering Practice Act (TEPA)? (30 TAC § 116.110(f))	No
Is the application required to be submitted under the seal of a Texas licensed P.E.? Note: an electronic PE seal is acceptable.	Yes

Date: _April 2022_
Permit #: _38754_
Company: _Valero Refining - Texas, L.P._

Pollutant	Does this pollutant require PSD review?	How will you demonstrate that this project meets all applicable requirements?	Notes	Additional Notes (optional)
Ozone	Yes	Protocol (required for all PSD projects, excluding GHG PSD)	Attach a protocol meeting all requirements listed on the TCEQ website.	
VOC	No	MERA steps 0-2 AND Modeling (screen or refined)	Attach both an "Electronic Modeling Evaluation Workbook" (EMEW) AND a detailed description of which MERA step was met. Include speciated emission rates with the total VOC and/or PM species corresponding to the short-term and long-term differences represented on the Unit Types-Emission Rates sheet.	
CO	Yes	Protocol (required for all PSD projects, excluding GHG PSD)	Attach a protocol meeting all requirements listed on the TCEQ website.	
H2S	No	Modeling: screen or refined	Attach a completed "Electronic Modeling Evaluation Workbook" (EMEW).	
NH3	No	Modeling: screen or refined	Attach a completed "Electronic Modeling Evaluation Workbook" (EMEW).	
NOx	Yes	Protocol (required for all PSD projects, excluding GHG PSD)	Attach a protocol meeting all requirements listed on the TCEQ website.	
PM	Yes	Protocol (required for all PSD projects, excluding GHG PSD)	Attach a protocol meeting all requirements listed on the TCEQ website.	

Texas Commission on Environmental Quality
Form PI-1 General Application
Impacts

Pollutant	Does this pollutant require PSD review?	How will you demonstrate that this project meets all applicable requirements?	Notes	Additional Notes (optional)
PM10	Yes	Protocol (required for all PSD projects, excluding GHG PSD)	Attach a protocol meeting all requirements listed on the TCEQ website.	
PM2.5	Yes	Protocol (required for all PSD projects, excluding GHG PSD)	Attach a protocol meeting all requirements listed on the TCEQ website.	
SO2	Yes	Protocol (required for all PSD projects, excluding GHG PSD)	Attach a protocol meeting all requirements listed on the TCEQ website.	
Exempt Solvents	No	Protocol (required for all PSD projects, excluding GHG PSD)	Attach a protocol meeting all requirements listed on the TCEQ website.	
HF	No	Not applicable	This pollutant is not a part of this project or does not require an impacts analysis.	
Cl2	No	Not applicable	This pollutant is not a part of this project or does not require an impacts analysis.	
H2SO4	Yes	Protocol (required for all PSD projects, excluding GHG PSD)	Attach a protocol meeting all requirements listed on the TCEQ website.	

Date: _April 2022_
Permit #: _38754_
Company: _Valero Refining - Texas, L.P._

Pollutant	Does this pollutant require PSD review?	How will you demonstrate that this project meets all applicable requirements?	Notes	Additional Notes (optional)
HCl	No	Not applicable	This pollutant is not a part of this project or does not require an impacts analysis.	
HCN	No	Not applicable	This pollutant is not a part of this project or does not require an impacts analysis.	
CO2				
CH4				
N2O				
CO2 Equivalent				

Texas Commission on Environmental Quality
Form PI-1 General Application
BACT

Date: _April 2022_
Permit #: _38754_
Company: _Valero Refining - Texas, L.P._

Action Requested	FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
New/Modified	Various	MSS Activities	CO	See Additional Notes:	Yes	See Application Section 6
			H2S	See Additional Notes:	Yes	See Application Section 6
			NH3	See Additional Notes:	Yes	See Application Section 6
			NOx	See Additional Notes:	Yes	See Application Section 6
			PM	The emission reduction techniques for PM10 and PM2.5 will follow the technique for PM. See Additional Notes:	Yes	See Application Section 6
			SO2	See Additional Notes:	Yes	See Application Section 6
			VOC	See Additional Notes:	Yes	See Application Section 6
			Exempt Solvents	See Additional Notes:	Yes	See Application Section 6
			MSS	Not required since this is a MSS unit type.	Yes	
New/Modified	HOC-FUG	Fugitives: Piping and Equipment Leak	H2S	AVO inspection twice per shift. Appropriate credit for AVO program.	Yes	
			VOC	Specify which is applicable: 1. Uncontrolled VOC emissions < 10 tpy: none 2. 10 tpy < uncontrolled VOC emissions < 25 tpy: 28M leak detection and repair program. 75% credit for 28M. 3. Uncontrolled VOC emissions > 25 tpy: 28VHP leak detection and repair program. 97% credit for valves, 85% for pumps and compressors. 4. VOC vp < 0.002 psia: no inspection required, no fugitive emissions expected. For emissions of approved odorous compounds (chlorine, ammonia, hydrogen sulfide, hydrogen cyanide and mercaptans only): AVO inspection twice per shift. Appropriate credit for AVO program.	Yes	See Application Section 6
			MSS	Same as normal operation BACT requirements.	Yes	
New/Modified	SWS-FUG	Fugitives: Piping and Equipment Leak	H2S	AVO inspection twice per shift. Appropriate credit for AVO program.	Yes	
			VOC	Specify which is applicable: 1. Uncontrolled VOC emissions < 10 tpy: none 2. 10 tpy < uncontrolled VOC emissions < 25 tpy: 28M leak detection and repair program. 75% credit for 28M. 3. Uncontrolled VOC emissions > 25 tpy: 28VHP leak detection and repair program. 97% credit for valves, 85% for pumps and compressors. 4. VOC vp < 0.002 psia: no inspection required, no fugitive emissions expected. For emissions of approved odorous compounds (chlorine, ammonia, hydrogen sulfide, hydrogen cyanide and mercaptans only): AVO inspection twice per shift. Appropriate credit for AVO program.	Yes	See Application Section 6

Texas Commission on Environmental Quality
Form PI-1 General Application
BACT

Action Requested	FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
			MSS	Same as normal operation BACT requirements.	Yes	
New/Modified	24-ST-01	Fluid Catalytic Cracking Unit	CO	500 ppmv maximum hourly concentration.	Yes	
			HCN	See additional notes:	Yes	See Application Section 6
			H2SO4	See Additional Notes:	Yes	See Application Section 6
			NH3	See Additional Notes:	Yes	See Application Section 6
			NOx	Short term limit: 200 ppmv, one hour average corrected to 0% oxygen. Annual emission limit: 100 ppmv, corrected to 0% oxygen.	Yes	
			PM	The emission reduction techniques for PM10 and PM2.5 will follow the technique for PM. Includes condensable PM. 1 lb/1000 lbs. of coke burned off. Opacity is limited to 15-20% over a 6-minute average period.	Yes	
			SO2	Short term limit: 300 ppmv, one hour average, corrected to 0% oxygen. Annual emission limit: 100 ppmv, corrected to 0% oxygen.	Yes	
			VOC	<10 ppmv exit concentration.	Yes	
			H2S	See Additional Notes:		See Application Section 6
			CO2	See additional notes:		See Application Section 6
			CH4	See additional notes:		See Application Section 6
			N2O	See additional notes:		See Application Section 6
			CO2 Equivalent	See additional notes:		See Application Section 6
			MSS	Same as normal operation BACT requirements.	Yes	
New/Modified	30-B-05	Boiler: Liquid and Gas Fuel, > 40 MMBtu/hr	CO	50 ppmv at 3% O2 achieved by good combustion practices, oxidation catalyst, and/or maintenance of the boiler. Specify technique(s).	Yes	See Application Section 6
			NH3	10 ppmvd at 3% O2 achieved by controlling the NH3 injection system to minimize NH3 slip.	Yes	See Application Section 6
			NOx	Specify fuel type(s) to be fired. When firing natural gas: 0.01 lb/MMBtu achieved by When firing plant fuel gas: 0.015 lb/MMBtu achieved Note: plant fuel gas may contain up to 75% natural gas. Specifics: <50% H2; > 920 Btu/dscf. Emission limits typically achieved using dry-low NOx combustors, limiting fuel consumption, SCR, and/or water or steam injection. Specify technique(s). Fuel oil firing limited to 760 hours/yr.	Yes	See Application Section 6
			PM	The emission reduction techniques for PM10 and PM2.5 will follow the technique for PM. Less than 5% opacity. Good combustion practices.	Yes	See Application Section 6
			SO2	Firing low sulfur fuel and good combustion practices.	Yes	See Application Section 6
			VOC	Good combustion practices.	Yes	See Application Section 6
			H2S	Firing low sulfur fuel.		See Application Section 6
			CO2	See additional notes:		See Application Section 6
			CH4	See additional notes:		See Application Section 6
			N2O	See additional notes:		See Application Section 6
			CO2 Equivalent	See additional notes:		See Application Section 6
			MSS	Minimizing the duration of these activities and operating the facility in accordance with best management practices and good air pollution control practices	Yes	

Action Requested	FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
New/Modified	HOC-PP-CT	Cooling Tower	PM	The emission reduction techniques for PM10 and PM2.5 will follow the technique for PM. Drift < 0.001% achieved by drift eliminators	Yes	See Application Section 6
			VOC	Non-contact design. Monthly monitoring of VOC in water per Appendix P or approved equivalent (assume all VOC stripped out). Repair identified leaks as soon as possible, but before next scheduled shutdown, or shutdown triggered by 0.08 ppmw cooling water VOC concentration.	Yes	See Application Section 6
			MSS	Same as normal operation BACT requirements.	Yes	
New/Modified	XX-01	Control: Adsorption System: Disposable	VOC	Minimum of two carbon canisters in series; continuous emissions monitor (CEM) and recorder before the last canister, but periodic monitoring before the last canister may be acceptable for single compound or low use rate systems. Breakthrough concentration 20-100 ppm based on vendor representations for specific compounds.	Yes	See Application Section 6
			MSS	Same as normal operation BACT requirements.	Yes	
New/Modified	MEROX	Process Vent	VOC	Non-halogenated VOCs: flare, any oxidizer, adsorber, absorber/scrubber, etc. Specify technique. Must meet that control device's approved efficiency. Halogenated VOC: Thermal oxidation followed by absorber/scrubber carbon adsorption. Specify technique. Must meet that control device's approved efficiency.	Yes	See Application Section 6
			SO2	See Additional Notes:	Yes	See Application Section 6
			H2S	See Additional Notes:	Yes	See Application Section 6
			MSS	Same as normal operation BACT requirements.	Yes	

Texas Commission on Environmental Quality
Form PI-1 General Application
Monitoring

Date: _April 2022_
Permit #: _38754_
Company: _Valero Refining - Texas, L.P._

FIN	Unit Type	Pollutant	Minimum Monitoring Requirements	Confirm	Additional Notes for Monitoring	Proposed Measurement Technique (only complete for pollutants with a project increase above the PSD threshold)	Additional Notes for Measuring:
Various	MSS Activities	CO	Requirement dependent on application representation. Vapor concentration measurement prior to opening to atmosphere may be required and/or emission potential may be recalculated. Each measurement and/or number of events monthly must be monitored. Must monitor open ended lines for leaks if open more than 72 hours without cap, blind flange or plug. Where add on control is used for purge, monitoring consistent with device used and flow and firing rates monitored or potential calculated.	Yes		Record keeping	
		H2S	See Additional Notes:	Yes	There is no change to existing MSS emission limits for this project	Record keeping	
		NH3	See Additional Notes:	Yes	There is no change to existing MSS emission limits for this project	Record keeping	
		NOx	Where add on control is used for purge, monitoring consistent with device used and flow and firing rates monitored or potential calculated.	Yes		Record keeping	
		PM	The emission monitoring techniques for PM10 and PM2.5 will follow the technique for PM. Blasting material and usage. Paint spray type and usage. Combustion firing rates. Differential pressure across PM control devices.	Yes		Record keeping	
		SO2	Where add on control is used for purge, monitoring consistent with device used and flow and firing rates monitored or potential calculated.	Yes		Record keeping	
		VOC	Requirement dependent on application representation. Vapor concentration measurement prior to opening to atmosphere may be required and/or emission potential may be recalculated. Each measurement and/or number of events monthly must be monitored. Must monitor open ended lines for leaks if open more than 72 hours without cap, blind flange or plug. Where add on control is used for purge, monitoring consistent with device used and flow and firing rates monitored or potential calculated.	Yes		Record keeping	
		Exempt Solvents	See Additional Notes:	Yes	There is no change to existing MSS emission limits for this project	Record keeping	
HOC-FUG	Fugitives: Piping and Equipment Leak	H2S	Look for leaks twice per shift using audio, visual or olfactory (AVO) senses to observe leaks. Record results and corrective action taken.	Yes		Record keeping	
		VOC	Use EPA Method 21 to monitor for leaks from seals on pumps, compressors, agitator and valve seals on piping components in light liquid and gas VOC service quarterly. Gas or hydraulic check new and a replaced connectors prior to returning to service, or monitor with Method 21 within 15 days of returning to service. Leak detection and repair (LDAR) Program 28M has a leak definition where repair action is required at 10,000 ppmv. LDAR Program 28 VHP has a leak definition where repair action is required at 500 ppmv for valves and connectors and 2000 ppmv for pumps, compressors and agitators. Check connectors weekly using audio, visual or olfactory (AVO) senses to observe leaks. Record results and corrective action taken.	Yes		Record keeping	
SWS-FUG	Fugitives: Piping and Equipment Leak	H2S	Look for leaks twice per shift using audio, visual or olfactory (AVO) senses to observe leaks. Record results and corrective action taken.	Yes		Record keeping	
		VOC	Use EPA Method 21 to monitor for leaks from seals on pumps, compressors, agitator and valve seals on piping components in light liquid and gas VOC service quarterly. Gas or hydraulic check new and a replaced connectors prior to returning to service, or monitor with Method 21 within 15 days of returning to service. Leak detection and repair (LDAR) Program 28M has a leak definition where repair action is required at 10,000 ppmv. LDAR Program 28 VHP has a leak definition where repair action is required at 500 ppmv for valves and connectors and 2000 ppmv for pumps, compressors and agitators. Check connectors weekly using audio, visual or olfactory (AVO) senses to observe leaks. Record results and corrective action taken.	Yes		Record keeping	

24-ST-01	Fluid Catalytic Cracking Unit	CO	CEMS for CO and O2, Flow monitoring or calculation	Yes		CEMS	
		HCN	See additional notes:	Yes	Emission factor used for permit limit apllied to actual calculated coke burn rate.	COMS	Calculated coke burn calculated using Equation 6 from 40 CFR § 60.104a(d)(4)(iii)
		H2SO4	CEMS for SO2 and O2, Flow monitoring or calculation	Yes	Emission factor used for permit limit apllied to actual calculated coke burn rate.	COMS	Calculated coke burn calculated using Equation 6 from 40 CFR § 60.104a(d)(4)(iii)
		NH3	See Additional Notes:	Yes	Emission factor used for permit limit apllied to actual calculated coke burn rate.	COMS	Calculated coke burn calculated using Equation 6 from 40 CFR § 60.104a(d)(4)(iii)
		NOx	CEMS for NOx and O2, Flow monitoring or calculation	Yes		CEMS	
		PM	The emission monitoring techniques for PM10 and PM2.5 will follow the technique for PM. Continuous Opacity Monitor, or differential pressure across wet scrubber with daily opacity readings	Yes	Emission factor used for permit limit apllied to actual calculated coke burn rate.	COMS	Calculated coke burn calculated using Equation 6 from 40 CFR § 60.104a(d)(4)(iii)
		SO2	CEMS for SO2 and O2, Flow monitoring or calculation	Yes		CEMS	
		VOC	CPMS for Coke Burn, CEMS for CO and O2	Yes		CEMS	
		H2S	CEMS for SO2 and O2, Flow monitoring or calculation	No	Not Applicable. Emission Rates are less than 0.01 lb/hr and tpy	Record keeping	
		CO2	See additional notes:	Yes	CO2 , CO, and O2 CEMS used along with Equation Y-6 and Y-7a from 40 CFR Part 98 Subpart Y are used to calcute CO2 emissions.	CEMS	
		CH4	See additional notes:	Yes	Calculated using Equation Y-9 from 40 CFR Part 98 Subpart Y.	CEMS	
		N2O	See additional notes:	Yes	Calculated using Equation Y-10 from 40 CFR Part 98 Subpart Y.	CEMS	
		CO2 Equivalent	See additional notes:		Calucated using method described in 40 CFR Part 98.		
30-B-05	Boiler: Liquid and Gas Fuel, > 40 MMBtu/hr	CO	totalizing fuel flow meter record monthly fuel analysis for heating value every six month visible emission/opacity observations >100 MMBtu/hr: continuous flow meter average hourly, CO and O2 CEMS	Yes		CEMS	
		NH3	SCR and NSCR: ammonia CEMS or NOx monitor across the catalyst continuous flow meter average hourly, O2 CEMS	Yes		CEMS	
		NOx	totalizing fuel flow meter record monthly fuel analysis for heating value every six month CEMS. Data collected four times per hour and averaged hourly. >100 MMBtu/hr: continuous flow meter average hourly, NOx and O2 CEMS	Yes		CEMS	
		PM	The emission monitoring techniques for PM10 and PM2.5 will follow the technique for PM. totalizing fuel flow meter record monthly, fuel analysis for heating value every six month, visible emission/opacity observations daily for major sources and quarterly for minor sources. >100 MMBtu/hr: continuous flow meter average hourly, CO and O2 CEMS	Yes		Other:	CEMS and COMS
		SO2	totalizing fuel flow meter record monthly fuel analysis for heating value and total sulfur every six month visible emission/opacity observations Refinery: Continuous H2S monitoring of fuel gas	Yes		COMS	
		VOC	totalizing fuel flow meter record monthly fuel analysis for heating value every six month CEMS. Data collected four times per hour and averaged hourly. >100 MMBtu/hr: continuous flow meter average hourly, CO and O2 CEMS	Yes		COMS	
		H2S	totalizing fuel flow meter record monthly fuel analysis for heating value and total sulfur every six month Refinery: Continuous H2S monitoring of fuel gas	No	Not Applicable. Emission Rates are less than 0.01 lb/hr and tpy	Record keeping	
		CO2	See additional notes:	Yes	Monthly thermal efficiency calculation	COMS	
		CH4	See additional notes:	Yes	Monthly thermal efficiency calculation	COMS	
		N2O	See additional notes:	Yes	Monthly thermal efficiency calculation	COMS	
		CO2 Equivalent	See additional notes:	Yes	Monthly thermal efficiency calculation		

HOC-PP-CT	Cooling Tower	PM	The emission monitoring techniques for PM10 and PM2.5 will follow the technique for PM. Cooling water circulation rate measured hourly unless maximum circulation rate assumed. Large (>50,000 gpm circulation rate): Total Dissolved Solids (TDS) in the cooling water daily then reduced to weekly and quarterly with daily conductivity measurement that is correlated. Small (<50,000 gpm circulation rate): Total Dissolved Solids (TDS) in the cooling water measured weekly.	Yes		Record keeping	
		VOC	VOC concentration in the cooling water by TCEQ stripping method or approved equivalent monthly. Cooling water circulation rate measured hourly unless maximum circulation rate assumed.	Yes		Record keeping	
XX-01	Control: Adsorption System: Disposable	VOC	VOC concentration measured at a frequency equivalent to between 20 and 30 percent of the minimum potential saturation time. Visual inspection for carbon build up around the stack weekly.	Yes		Record keeping	
MEROX	Process Vent	VOC	Production rate or flow as appropriate Monitoring consistent with Control Device	Yes		Record keeping	
		SO2	See Additional Notes:	Yes	Same as VOC	Record keeping	
		H2S	See Additional Notes:	Yes	Same as VOC	Record keeping	

Texas Commission on Environmental Quality
Form PI-1 General Application
Materials

Date: _April 2022_
Permit #: _38754_
Company: _Valero Refining - Texas, L.P._

Item	How submitted	Date submitted
A. Administrative Information		
Form PI-1 General Application	STEERS	09/30/2021
Hard copy of the General sheet with original (ink) signature	Not applicable	
Professional Engineer Seal	STEERS	09/30/2021
B. General Information		
Copy of current permit (both Special Conditions and MAERT)		
Core Data Form	Not applicable	
Area map	STEERS	09/30/2021
Plot plan	STEERS	09/30/2021
Process description	STEERS	09/30/2021
Process flow diagram	STEERS	09/30/2021
List of MSS activities	STEERS	09/30/2021
State regulatory requirements discussion	STEERS	09/30/2021
C. Federal Applicability		
Summary and project emission increase determination - Tables 1F and 2F	STEERS	09/30/2021
Netting analysis (if required) - Tables 3F and 4F as needed	STEERS	09/30/2021
D. Technical Information		
BACT discussion, if additional details are attached	STEERS	09/30/2021
Monitoring information, if additional details are attached	STEERS	09/30/2021
Material Balance (if applicable)	STEERS	09/30/2021
Calculations	STEERS	09/30/2021
E. Impacts Analysis		
Qualitative impacts analysis		
MERA analysis	Not applicable	
EMEW: SCREEN3	Not applicable	
EMEW: NonSCREEN3	STEERS	09/30/2021
PSD modeling protocol	STEERS	09/30/2021
F. Additional Attachments		

Texas Commission on Environmental Quality
Form PI-1 General Application Summary

Date: April 2022
Permit #: 38754
Company: Valero Refining - Texas, L.P.

Project Summary

This sheet is a summary of representations made in this PI-1. No additional information is required by the applicant.

Project Description

Valero plans to undertake changes to the West Plant Heavy Oil Cracker (HOC), a fluidized catalytic cracking (FCC) unit. Due to the integrated nature of refinery operations, the project ("HOC Reconfiguration Project") will necessitate construction of a new utility boiler, a new cooling tower, and a new Gas Plant.

Contact Data

Company	Valero Refining - Texas, L.P.
Responsible official	Mr. Joe Almaraz
Phone	361-289-3328
Email	Joe.Almaraz@valero.com
Technical contact	Ms. Meagan Marquard
Phone	361-299-8913
Email	Meagan.Marquard@valero.com

Permit and Action Type Requested

Permit Type	Action Type	Permit Number
Minor NSR	Amendment	38754
Special Permit	Not applicable	
De Minimis	Not applicable	
Flexible	Not applicable	
PSD	Major Modification	PSDTX324M14
Nonattainment	Not applicable	
HAP Major Source [FCAA § 112(g)]	Not applicable	
PAL	Not applicable	
GHG PSD	Initial	TBD

Fees

Non-Renewal fee	$75,000.00
Renewal fee	
Total Fee	$75,000.00

Miscellaneous

TCEQ Region	Region 14
RN	RN100214386
CN	CN600127468
Title V site?	Yes
Industry group	Chemical / Energy
Public notice required?	Yes

Air Pollutant Watch List

Is this facility located in an APWL area AND this application includes that pollutant?	No
APWL pollutants	

Disaster Review

Any air contaminants for which a disaster review is required?	No
Disaster review pollutants	

Application contains **confidential** information?	No

Project Timing

Projected Start of Construction	10/1/2022
Projected Start of Operation	1/1/2024

Project Emission Summary (tpy)

Pollutant	Current (tpy)	Consolidated Emissions (tpy)	Proposed (tpy)	Project Change in Allowable (tpy)
VOC	1068.64	0.00	1122.72	54.08
PM	833.18	0.00	842.02	8.84
PM_{10}	828.09	0.00	836.95	8.86
$PM_{2.5}$	757.51	0.00	807.81	50.30
NO_x	1617.73	0.00	1654.85	37.12
CO	3019.83	0.00	3220.23	200.40
SO_2	1557.56	0.00	1614.22	56.66
Pb	0.00	0.00	0.00	0.00
H2S	24.22	0.00	24.31	0.09
NH3	29.06	0.00	37.80	8.74
Exempt Solvents	0.60	0.00	0.60	0.00
HF	2.29	0.00	2.29	0.00
Cl2	0.04	0.00	0.04	0.00
H2SO4	214.63	0.00	199.31	-15.32
HCl	0.57	0.00	0.57	0.00
HCN	320.40	0.00	320.40	0.00
CO2	0.00	0.00	2674037.00	2674037.00
CH4	0.00	0.00	79.86	79.86
N2O	0.00	0.00	14.84	14.84
CO2 Equivalent	0.00	0.00	2680456.00	2680456.00

Federal Applicability

County	Nueces
County classification (as of 9/23/2019)	attainment or unclassified for all pollutants
Ozone classification requested for this project	attainment or unclassified for all pollutants
Pollutants requiring PSD review	CO, NOx, PM, PM10, PM2.5, SO2, Ozone (as VOC),
Pollutants requiring NA review	

Impacts

No impacts required	HF, Cl2, HCl, HCN,
Qualitative analysis	
MERA analysis	VOC,
Modeling	VOC, H2S, NH3,
PSD Protocol	Ozone, CO, NOx, PM, PM10, PM2.5, SO2, Exempt Sol

Table 1-1

Revised April 2022

Allowable Emission Rate Change Summary

HOC Reconfiguration Project

Valero Refining - Texas - West Plant Refinery, Corpus Christi

EPN(s)	FIN(s)	Source Description	CO Current (lb/hr)	CO Proposed (lb/hr)	NO_X Current (lb/hr)	NO_X Proposed (lb/hr)	PM Current (lb/hr)	PM Proposed (lb/hr)	PM_{10} Current (lb/hr)	PM_{10} Proposed (lb/hr)
121	24-ST-01	Heavy Oil Cracker (HOC) Belco Scrubber	889.96	958.40	356.20	384.12	120.32	140.00	120.32	140.00
121/ 30-B-05	MEROX	New Merox Vent								
30-B-05	30-B-05	Boiler	0	33.48	0.00	7.16	0.00	3.56	0	3.56
30-B-05	30-B-05	Boiler (MSS)	0	167.39	0.00	71.61				
HOC-PP-CT	HOC-PP-CT	Cooling Tower-Propylene Project					0	0.78	0	0.18
XX-01	XX-01	HOC PP Gas Plant CAS								
~~21/22F~~	~~HOC-FUG~~	~~HOC Unit Fugitives~~								
~~42F~~	~~SWS-FUG~~	~~Sour Wtr, Stripper Fugitives~~								
FUG-CAP	Various	Piping Fugitives								
HOC-CT	122	HOC Cooling Tower					17.71	3.54	16.82	3.36
		Total:	890.0	1159.3	356.2	462.9	138.0	147.9	137.1	147.1
		Change in Allowable (lb/hr):		269.3		106.7		9.8		10.0

EPN(s)	FIN(s)	Source Description	CO Current (tpy)	CO Proposed (tpy)	NO_X Current (tpy)	NO_X Proposed (tpy)	PM Current (tpy)	PM Proposed (tpy)	PM_{10} Current (tpy)	PM_{10} Proposed (tpy)
121	24-ST-01	Heavy Oil Cracker (HOC) Belco Scrubber	1470.33	1559.15	473.81	473.81	527.00	569.40	527	569.40
121/ 30-B-05	MEROX	New Merox Vent								
30-B-05	30-B-05	Boiler	0	70.84	0.00	30.14	0.00	14.16	0	14.16
HOC-PP-CT	HOC-PP-CT	Cooling Tower					0	3.42	0	0.81
MSS Caps	MSS Caps	MSS Caps	88.17	128.91	20.21	27.19	2.21	3.76	1.37	2.92
XX-01	XX-01	HOC PP Gas Plant CAS								
21/22F	~~HOC-FUG~~	~~HOC Unit Fugitives~~								
42F	~~SWS-FUG~~	~~Sour Wtr, Stripper Fugitives~~								
FUG-CAP	Various	Piping Fugitives								
HOC-CT	122	HOC Cooling Tower					65.86	13.17	62.58	12.52
		Total:	1558.5	1758.9	494.0	531.1	595.1	603.9	591.0	599.8
		Change in Allowable (tpy):		200.4		37.1		8.8		8.9

Table 1-1 Revised April 2022

Allowable Emission Rate Change Summary

HOC Reconfiguration Project

Valero Refining - Texas - West Plant Refinery, Corpus Christi

			$PM_{2.5}$		SO_2		VOC		H2SO4	
EPN(s)	FIN(s)	Source Description	Current (lb/hr)	Proposed (lb/hr)	Current (lb/hr)	Proposed (lb/hr)	Current (lb/hr)	Proposed (lb/hr)	Current (lb/hr)	Proposed (lb/hr)
121	24-ST-01	Heavy Oil Cracker (HOC) Belco Scrubber	120.32	140.00	203.53	219.22	28.02	30.18	49.00	49.00
121/ 30-B-05	MEROX	New Merox Vent			0	3.86	0	0.24		
30-B-05	30-B-05	Boiler	0	3.56	0	7.70	0	2.57		
30-B-05	30-B-05	Boiler (MSS)								
HOC-PP-CT	HOC-PP-CT	Cooling Tower-Propylene Project	0	0.001			0	1.09		
XX-01	XX-01	HOC PP Gas Plant CAS					0	0.005		
~~21/22F~~	~~HOC FUG~~	~~HOC Unit Fugitives~~								
~~42F~~	~~SWS FUG~~	~~Sour Wtr, Stripper Fugitives~~								
FUG-CAP	Various	Piping Fugitives					105.75	112.45		
HOC-CT	122	HOC Cooling Tower	2.63	0.53			5.67	5.67		
		Total:	123.0	144.1	203.5	230.8	139.4	152.2	49.0	49.0
		Change in Allowable (lb/hr):		21.1		27.3		12.8		0.0

			$PM_{2.5}$		SO_2		VOC		H2SO4	
			Current (tpy)	Proposed (tpy)	Current (tpy)	Proposed (tpy)	Current (tpy)	Proposed (tpy)	Current (tpy)	Proposed (tpy)
121	24-ST-01	Heavy Oil Cracker (HOC) Belco Scrubber	527	569.40	420.09	420.12	115.53	122.74	214.62	199.30
121/ 30-B-05	MEROX	New Merox Vent			0	16.91	0	1.05		
30-B-05	30-B-05	Boiler	0	14.16	0	21.15	0	10.25	0	0.00
HOC-PP-CT	HOC-PP-CT	Cooling Tower	0	0.01			0	4.78		
MSS Caps	MSS Caps	MSS Caps	1.37	2.92	37.23	38.89	69.65	70.04		
XX-01	XX-01	HOC PP Gas Plant CAS					0	0.02		
21/22F	~~HOC FUG~~	~~HOC Unit Fugitives~~								
42F	~~SWS FUG~~	~~Sour Wtr, Stripper Fugitives~~								
FUG-CAP	Various	Piping Fugitives					462.99	492.32		
HOC-CT	122	HOC Cooling Tower	9.78	1.96			21.09	21.09		
		Total:	538.2	588.4	457.3	497.1	669.3	722.3	214.6	199.3
		Change in Allowable (tpy):		50.3		39.8		53.0		-15.3

Table 1-1 Revised April 2022

Allowable Emission Rate Change Summary

HOC Reconfiguration Project

Valero Refining - Texas - West Plant Refinery, Corpus Christi

EPN(s)	FIN(s)	Source Description	HCN Current (lb/hr)	HCN Proposed (lb/hr)	NH3 Current (lb/hr)	NH3 Proposed (lb/hr)	H2S Current (lb/hr)	H2S Proposed (lb/hr)
121	24-ST-01	Heavy Oil Cracker (HOC) Belco Scrubber	80.47	80.47	0	4.84		
121/ 30-B-05	MEROX	New Merox Vent					0	0.001
30-B-05	30-B-05	Boiler			0	2.18		
30-B-05	30-B-05	Boiler (MSS)						
HOC-PP-CT	HOC-PP-CT	Cooling Tower-Propylene Project						
XX-01	XX-01	HOC PP Gas Plant CAS						
~~21/22F~~	~~HOC-FUG~~	~~HOC Unit Fugitives~~						
~~42F~~	~~SWS-FUG~~	~~Sour Wtr, Stripper Fugitives~~						
FUG-CAP	Various	Piping Fugitives			0	0.010	0.58	0.59
HOC-CT	122	HOC Cooling Tower						
		Total:	80.5	80.5	0.0	7.0	0.6	0.6
		Change in Allowable (lb/hr):		0.0		7.0		0.0

EPN(s)	FIN(s)	Source Description	HCN Current (tpy)	HCN Proposed (tpy)	NH3 Current (tpy)	NH3 Proposed (tpy)	H2S Current (tpy)	H2S Proposed (tpy)
121	24-ST-01	Heavy Oil Cracker (HOC) Belco Scrubber	320.4	320.40	0	17.88		
121/ 30-B-05	MEROX	New Merox Vent					0	0.004
30-B-05	30-B-05	Boiler	0	0.00	0	8.68		
HOC-PP-CT	HOC-PP-CT	Cooling Tower						
MSS Caps	MSS Caps	MSS Caps					0.22	0.22
XX-01	XX-01	HOC PP Gas Plant CAS						
21/22F	~~HOC-FUG~~	~~HOC Unit Fugitives~~						
42F	~~SWS-FUG~~	~~Sour Wtr, Stripper Fugitives~~						
FUG-CAP	Various	Piping Fugitives			0	0.06	2.52	2.58
HOC-CT	122	HOC Cooling Tower						
		Total:	320.4	320.4	0.0	26.6	2.7	2.8
		Change in Allowable (tpy):		0.0		26.6		0.1

Revised April 2022

Table 7-1
PSD Emission Summary
HOC Reconfiguration Project
Valero Refining - Texas - West Plant Refinery, Corpus Christi

EPN(s)	FIN(s)	Source Description	CO			NO_x			VOC			PM		
			Baseline	PTE	Increase	Baseline	PTE	Increase	Baseline	PTE	Increase	Baseline	PTE	Increase
New/Modified Sources														
121	24-ST-01	Heavy Oil Cracker (HOC) Belco Scrubber	1402.67	1559.15	156.48	302.72	473.81	171.09	99.11	122.74	23.63	362.89	569.40	206.51
121/ 30-B-05	MEROX	MEROX Unit			0.00			0.00	0.00	1.05	1.05			0.00
30-B-05	30-B-05	Boiler	0	70.84	70.84		30.14	30.14		10.25	10.25		14.16	14.16
HOC-PP-CT	HOC-PP-CT	Cooling Tower-Propylene Project			0.00			0.00		4.78	4.78		3.42	3.42
XX-01	XX-01	HOC PP Gas Plant CAS							0	0.02	0.02			
Various	Various	Piping Fugitives			0.00			0.00			29.33			0.00
MSS Caps	MSS Caps	MSS			40.74			6.98			0.39			1.55
Affected Sources														
17	70-TK-110	Gasoline Blendstock Tank (70-TK-110)									0.15			
187	83-TK-25	Sour Water Tank									0.18			
164/165	50-TK-64/65	Iso-octene Tanks			0.00			0.00			0.10			0.00
13	70-TK-105	Distillate Storage Tanks									0.49			
7/8/34/35	-TK-95/96/97/	Distillate Storage Tanks			-						0.36			
TK-51	70-TK-51	Cat Naphtha Storage Tank							0	2.94	2.94			
121	SRU, SCOT	Sulfur Recovery			16.91			3.70			0.26			8.40
118	13-H-01A. 13-H-01B, 13-H-01C	SMR (Heater Combustion)			4.09			6.60			0.63			0.83
118	SMR-VENT	SMR (Hydrogen Production)												
150	47-H-01. 47-H-02, 47-H-03, 47-H-04	HCU Heaters	0.14	24.38	24.24	16.21	48.76	32.55	2.87	4.38	1.51	3.73	6.06	2.33
Various (See Table B-8)	Various (See Table B-8)	Wastewater Treatment			1.74			0.42			4.89			0.00
SHIP-FUG	SHIP FUG	Loading - Ship Fugitives									0.76			
VRU	VRU	Loading - MVRU									0.96			
TRUCKFUG	LOADINGFUG	Loading - Truck Fugitives									1.30			
TRUCKCOMB	T-RACK	Loading - Truck Combustor			1.70			0.85			0.16			0.03
		Project Total:			316.74			252.34			84.14			237.22
		Contemporaneous Changes:			96.54			46.49			29.54			4.52
		Total:			413.28			298.82			113.68			241.74
		PSD Significance Level:			100			40			40			25
		Subject to PSD Review:			Yes			Yes			Yes			Yes

Table 7-1

PSD Emission Summary

HOC Reconfiguration Project

Valero Refining - Texas - West Plant Refinery, Corpus Christi

Revised April 2022

EPN(s)	FIN(s)	Source Description	PM_{10}			$PM_{2.5}$			SO_2			H2SO4		
			Baseline	PTE	Increase	Baseline	PTE	Increase	Baseline	PTE	Increase	Baseline	PTE	Increase
New/Modified Sources														
121	24-ST-01	Heavy Oil Cracker (HOC) Belco Scrubber	362.89	569.40	206.51	362.89	569.40	206.51	47.01	420.12	373.11	30.74	199.30	168.56
121/ 30-B-05	MEROX	MEROX Unit			0.00			0.00	0.00	16.91	16.91			0.00
30-B-05	30-B-05	Boiler		14.16	14.16		14.16	14.16		21.15	21.15		0.00	0.00
HOC-PP-CT	HOC-PP-CT	Cooling Tower-Propylene Project		0.81	0.81		0.01	0.01			0.00			0.00
XX-01	XX-01	HOC PP Gas Plant CAS												
Various	Various	Piping Fugitives			0.00			0.00			0.00			0.00
MSS Caps	MSS Caps	MSS			1.55			1.55			1.66			
Affected Sources														
17	70-TK-110	Gasoline Blendstock Tank (70-TK-110)												
187	83-TK-25	Sour Water Tank												
164/165	50-TK-64/65	Iso-octene Tanks			0.00			0.00			0.00			
13	70-TK-105	Distillate Storage Tanks												
7/8/34/35	-TK-95/96/97/	Distillate Storage Tanks												
TK-51	70-TK-51	Cat Naphtha Storage Tank												
121	SRU, SCOT	Sulfur Recovery			8.40			8.40			7.45			
118	13-H-01A. 13-H-01B, 13-H-01C	SMR (Heater Combustion)			0.83			0.83			0.09			
118	SMR-VENT	SMR (Hydrogen Production)												
150	47-H-01. 47-H-02, 47-H-03, 47-H-04	HCU Heaters	3.73	6.06	2.33	3.73	6.06	2.33	0.81	8.63	7.82			
Various (See Table B-8)	Various (See Table B-8)	Wastewater Treatment			0.00			0.00			0.03			
SHIP-FUG	SHIP FUG	Loading - Ship Fugitives												
VRU	VRU	Loading - MVRU												
TRUCKFUG	LOADINGFUG	Loading - Truck Fugitives												
TRUCKCOMB	T-RACK	Loading - Truck Combustor			0.03			0.03			0.00			
		Project Total:			234.61			233.81			428.23			168.56
		Contemporaneous Changes:			4.52			4.52			19.46			0.00
		Total:			239.13			238.33			447.68			168.56
		PSD Significance Level:			15			10			40			7
		Subject to PSD Review:			Yes			Yes			Yes			Yes

Table 7-1

PSD Emission Summary

HOC Reconfiguration Project

Valero Refining - Texas - West Plant Refinery, Corpus Christi

Revised April 2022

EPN(s)	FIN(s)	Source Description	H2S			CO2e		
			Baseline	PTE	Increase	Baseline	PTE	Increase
New/Modified Sources								
121	24-ST-01	Heavy Oil Cracker (HOC) Belco Scrubber	0.00	0.00	0.00	1,641,332	2,457,772	816,440
121/ 30-B-05	MEROX	MEROX Unit	0.00	0.004	0.00			
30-B-05	30-B-05	Boiler		0.00	0.00	0	222,594	222,594
HOC-PP-CT	HOC-PP-CT	Cooling Tower-Propylene Project			0.00			
XX-01	XX-01	HOC PP Gas Plant CAS						
Various	Various	Piping Fugitives			0.06			90
MSS Caps	MSS Caps	MSS			0.00			26
Affected Sources								
17	70-TK-110	Gasoline Blendstock Tank (70-TK-110)						
187	83-TK-25	Sour Water Tank						
164/165	50-TK-64/65	Iso-octene Tanks			0.00			
13	70-TK-105	Distillate Storage Tanks						
7/8/34/35	-TK-95/96/97/	Distillate Storage Tanks						
TK-51	70-TK-51	Cat Naphtha Storage Tank						
121	SRU, SCOT	Sulfur Recovery			0.50			4,990
118	13-H-01A. 13-H-01B, 13-H-01C	SMR (Heater Combustion)						5,882
118	SMR-VENT	SMR (Hydrogen Production)						20,854
150	47-H-01. 47-H-02, 47-H-03, 47-H-04	HCU Heaters				55,660	94,885	39,225
Various (See Table B-8)	Various (See Table B-8)	Wastewater Treatment			0.000			371
SHIP-FUG	SHIP FUG	Loading - Ship Fugitives						
VRU	VRU	Loading - MVRU						
TRUCKFUG	LOADINGFUG	Loading - Truck Fugitives						
TRUCKCOMB	T-RACK	Loading - Truck Combustor			-			397
		Project Total:			0.56			1,110,869
		Contemporaneous Changes:			NA			0
		Total:			0.56			1,110,869
		PSD Significance Level:			10			75,000
		Subject to PSD Review:			No			Yes

Table A-4

Revised April 2022

Fugitive Emissions - Speciation

HOC Reconfiguration Project

West Plant Refinery, Valero Refining - Texas, L.P., Corpus Christi, Texas

Current Allowable Emission Rates

FIN	EPN	VOC (lb/hr)	VOC (tpy)	H2S (lb/hr)	H2S (tpy)	NH3 (lb/hr)	NH3 (tpy)	CH4 (tpy)
SWS-FUG	42F			~~<0.01~~	~~0.02~~			
HOC-FUG	21/22F			~~0.03~~	~~0.12~~			
Various	FUG-CAP	105.75	462.99	0.58	2.52	0	0	

New Allowable Emission Rates

~~SWS-FUG~~	~~42F~~			~~<0.01~~	~~0.02~~			
~~HOC-FUG~~	~~21/22F~~			~~0.03~~	~~0.14~~			
Various	FUG-CAP	112.45	492.32	0.59	2.58	0.01	0.06	3.59

	Short-Term Emission Rates					Overall Speciation				
New Unit	Total	VOC	H2S	NH3	CH4	VOC	H2S	NH3	CH4	Inerts
	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	%	%	%	%	%
Gas Plant	2.441	2.063	0.000	0.000	0.045	85%	0%	0%	2%	13.7%
SHU	3.491	2.899	0.008	0.011	0.040	83%	0%	0%	1%	15.3%
HOC	1.962	1.323	0.004	0.002	0.132	67%	0%	0%	7%	25.6%
Boiler	1.057	0.353	0.000	0.000	0.484	33%	0%	0%	46%	20.8%
Sour Water Stripper	0.741	0.059	0.000	0.000	0.119	8%	0%	0%	16%	75.8%
Total	9.692	6.70	0.01	0.01	0.82	69%	0%	0%	8%	22.2%

	Annual Emission Rates				
	Total	VOC	H2S	NH3	CH4
	tpy	tpy	tpy	tpy	tpy
Total	42.45	29.33	0.06	0.06	3.59

Table A-7
Wastewater Collection System

Revised April 2022

HOC Reconfiguration Project

Valero Refining - Texas - West Plant Refinery, Corpus Christi

FIN (1)	EPN (2)	Location	Monitoring Frequency	Vapor Flow Rate @ 70°F & 50% Relative Humidity (scfm)	Inlet Benzene Concentration (ppmv)	Benzene Breakthrough (ppm)	VOC (Based on Benzene breakthrough) (ppm)	Benzene Emissions (lb/hr)	Benzene Emissions (tpy)	VOC Emissions (lb/hr)	VOC Emissions (tpy)
XX-01	XX-01	HOC PP Gas Plant CAS	every 2 weeks	3	300	5	100	0.0002	0.001	0.005	0.020

Temp	70	°F	Benzene MW (lb/lbmole)	78.11
Pressure	1	atm	VOC MW (lb/lbmole)	100
Volume	386.89	ft3/lbmol		

NOTES:

1. CAS denotes carbon adsorption system

Table A-10

Revised April 2022

MSS Emission Cap Summary

HOC Reconfiguration Project

West Plant Refinery, Valero Refining - Texas, L.P., Corpus Christi, Texas

Pollutant	Existing Cap (tpy)	HOC Startup (tpy)	Gas Plant Shutdown (tpy)	Total New Cap (tpy)	MSS Increase (tpy)
CO	88.17	40.62	0.12	128.91	40.74
H_2S	0.22		0.000006	0.22	0.00
NH_3	0.71			0.71	0.00
NO_x	20.21	6.95	0.03	27.19	6.98
PM	2.21	1.55		3.76	1.55
PM_{10}	1.37	1.55		2.92	1.55
$PM_{2.5}$	1.37	1.55		2.92	1.55
SO_2	37.23	1.66	0.0004	38.89	1.66
VOC	69.65	0.09	0.30	70.04	0.39
Exempt Solvents	0.6			0.6	0.00

Table A-12

Floating Roof Storage Tank Calculations

Diamond Green Diesel LLC - Port Arthur, Texas

New April 2022

	Parameter	Var.	Units	Equation	AP-42 Eq. No.	Tank 70TK51
	FIN					70-TK-51
	EPN					TK-51
	Material					Cat Naphtha
	Material Type					Petroleum
Tank Data	Diameter	D	ft			58
	Tank Type					IFR
	Floating Roof Type					Pontoon
	Tank Nominal Capacity		bbl			20,000
	Turnovers per Tank	N				182.50
	Paint Color	-	-			White
	Paint Solar Absorptance	α	-			0.25
	Continuous Level Tank		(Yes / No)			No
	Maximum Withdrawal Rate	PRm	bbl/hr			1,000
	Throughput	Q	bbls/yr			3,650,000
	Shell Clingage	C	$bbl/1000ft^2$			0.0015
	No. of Columns	N_C	-			1
	Column Diameter	F_C	ft			1
	Deck Fitting Factor	F_F	lb-mole/yr		2-15	312
	Deck Construction	-	-			Welded
	Deck Seam Loss Factor	K_D	lb-mole/ft·yr			0
	Deck Seam Length Factor	S_D	ft/ft^2			0
	Product Factor	K_C	-			1.0
	Tank Rim Seal Factor, Kra	K_{ra}				0.3
	Tank Rim Seal Factor, Krb	K_{Rb}				0.6
	Tank Rim Seal Factor, n	n				0.3
Climatological Data	Period		-			Annual
	Average Wind Speed	v	mph	Equal 0 for IFR Tanks		11.60
	Daily Total Solar Insolation Factor	I	$Btu/ft^2 \cdot d$			1497.00
	Daily Maximum Ambient Temperature	T_{AX}	ºF			81.10
	Daily Minimum Ambient Temperature	T_{AN}	ºF			63.40
	Daily Ambient Temp. Change	DT_A	ºR	$T_{AX} - T_{AN}$		17.70
	Daily Avg. Ambient Temperature	T_{AA}	ºF	$((T_{AX}+459.67)+(T_{AN}+459.67))/2$	1-30	72.25
	Bulk Temperature Source					Input
	Liquid Bulk Temperature	T_B	ºF	$T_{AA} + 0.007\alpha I$ (pontoon) $T_{AA} + 0.005\alpha I$ (dbl. deck)	2-9 or 2-12	90.00
	Insulated?					No
	Daily Avg. Liq. Surface Temp. (EFR w/ponto	T_{LA}	ºF	$0.7T_{AA}+0.3T_B+0.008(\alpha*I)$	2-7	
	Daily Avg. Liq. Surface Temp. (EFR w/dbl. d	T_{LA}	ºF	$0.3T_{AA}+0.7T_B+0.009(\alpha*I)$	2-10	
	Daily Avg. Liquid Surface Temp. (IFR or dom	T_{LA}	ºF	$0.3T_{AA}+0.7T_B+0.004(\alpha*I)$	2-6	86.17
	Daily Max. Avg. Liq. Surf. Temp.	T_{LX}	ºF	$T_{LA}+0.25*DT_V$	Fig. 7.1-17	91.14
	Daily Min. Avg. Liq. Surf. Temp.	T_{LN}	ºF	$T_{LA}-0.25*DT_V$	Fig. 7.1-17	81.20
	Daily Vapor Temperature Range	DT_V	ºR	$0.7*DT_A+0.02*\alpha*I$	1-7	19.88

Table A-12
Floating Roof Storage Tank Calculations
Diamond Green Diesel LLC - Port Arthur, Texas

New April 2022

	Parameter	Var.	Units	Equation	AP-42 Eq. No.	Tank 70TK51
	FIN					70-TK-51
	EPN					TK-51
Product Data	Crude Oil Service?	-	Y/N			N
	Liquid Molecular Wt.	M_L	lb/lb-mole			120.00
	Vapor Molecular Wt.	M_V	lb/lb-mole			75.00
	Liquid Density	W_l	lb/gal			5.86
	Vapor Pressure Method		-			RVP
	Reid Vapor Pressure	RVP	psi			9.00
	Slope	Sl	°F/vol %			3.00
	C-C Vapor Pressure Constant A	A	dim			11.76
	C-C Vapor Pressure Constant B	B	°R			5,315.06
	Vapor Pressure Equation Constant A	A	dim			
	Vapor Pressure Equation Constant B	B	°R or °C			
	Vapor Pressure Equation Constant C	C	°C			
	True Vapor Pressure @ T_{LA}	P_{VA}	psia @ T_{LA}			7.530
	True Vapor Pressure @ T_{LX}	P_{VX}	psia @ T_{LX}			8.221
	True Vapor Pressure @ T_{LN}	P_{VN}	psia @ T_{LN}			6.886
	Vapor Pressure Function	P*	dim	$P_{VA}/P_A/(1+(1-(P_{VA}/P_A))$^0.5)^2	2-4	0.1779
	Daily Vapor Pressure Range	DP_V	psia	P_{VX} - P_{VN}		1.34
Annual Emissions	Rim Seal Loss	L_R	lb/yr	$(K_{ra} + K_{ra}\, v^n)$(D)(P*)$(M_V)(K_C)$	2-3	1201.0
	Deck Fitting Loss	L_F	lb/yr	(F_F)(P*)$(M_V)(K_C)$	2-13	4158.1
	Deck Seam Loss	L_D	lb/yr	$(K_D)(S_D)$(D^2)(P*)$(M_V)(K_C)$	2-18	0.00
	Withdrawal Loss	L_{WD}	lb/yr	[(0.943)(Q)(C)(W_l)/(D)](1+[$(N_c)(F_c)$]/D)	2-19	530.63
	Total VOC Loss	L_T	lb/yr	$(L_R+L_F+L_D+L_{WD})$	2-1, 2-2	5889.69
	Total VOC Emissions	L_T	**ton/yr**	L_t/2000		**2.94**
Maximum Short-term Emissions	Shell Clingage	C	bbl/1000ft^2			0.0015
	Product Factor	K_C	-			1.0
	Vapor Molecular Wt.	M_V	lb/lb-mole			75.00
	Liquid Density	W_l	lb/gal			5.86
	Wind Speed	v	mph	Equal 0 for IFR Tanks; Max Month for EFR		14.10
	Deck Fitting Factor	F_F	lb-mole/yr		2-15	312
	Daily Total Solar Insolation Factor	I	Btu/ft^2-d			2072.00
	Max Stored True Vapor Pressure	P_{VX}				11.000
	Vapor Pressure Function	P*	dim	$P_{VX}/P_A/(1+(1-(P_{VX}/P_A))$^0.5)^2	2-4	0.33273
	Maximum Throughput	Qmax	bbl/yr	PRm * 8760		8,760,000
	Rim Seal Loss	L_R	lb/yr	$(K_{ra} + K_{ra}\, v^n)$(D)(P*)$(M_V)(K_C)$	2-3	2355.07
	Deck Fitting Loss	L_F	lb/yr	(F_F)(P*)$(M_V)(K_C)$	2-13	7775.87
	Deck Seam Loss	L_D	lb/yr	$(K_D)(S_D)$(D^2)(P*)$(M_V)(K_C)$	2-19	0.00
	Withdrawal Loss	L_{WD}	lb/yr	[(0.943)(Qmax)(C)(W_l)/(D)](1+[$(N_c)(F_c)$]/ D)	2-1, 2-2	1273.51
	Hourly VOC Loss per Tank	L_T	**lb/hr**	$(L_R+L_F+L_D+L_{WD})$/8760		**1.30**

Table A-13

New April 2022

Floating Roof Storage Tank Roof Fittings

Diamond Green Diesel LLC - Port Arthur, Texas

		Corpus Christi, Texas			
	Average Annual Wind Speed (ws):	11.60	mph		
	Maximum Monthly Wind Speed (ws):	14.10	mph		
				Tank FIN>>	70-TK-51
				Roof Type>	IFR
Fitting Type	**Cover Type/Description**	**KFa**	**KFb**	**m**	**Quantity**
	Diameter				58
	Deck Construction				Welded
	Floating Roof Type				Pontoon
	Self-Supporting Roof?				No
Access Hatch (24-in. Diam.)	Bolted Cover, Gasketed	1.6	0	0	1
Access Hatch (24-in. Diam.)	Unbolted Cover, Ungasketed	36	5.9	1.2	
Access Hatch (24-in. Diam.)	Unbolted Cover, Gasketed	31	5.2	1.3	
Column Well (24-in. Diam.)	Pipe Col.-Sliding Cover, Ungask.	31	0	0	
Column Well (24-in. Diam.)	Pipe Col.-Sliding Cover, Gask.	25	0	0	
Column Well (24-in. Diam.)	Pipe Col.-Flex. Fabric Sleeve Seal	10	0	0	
Column Well (24-in. Diam.)	Built-Up Col.-Sliding Cover, Ungask.	51	0	0	
Column Well (24-in. Diam.)	Built-Up Col.-Sliding Cover, Gask.	33	0	0	
Unslotted Guidepoles	Ungasketed Sliding Cover	31	150	1.4	
Unslotted Guidepoles	Ungasketed Sliding Cover, w. Sleeve	25	2.2	2.1	
Unslotted Guidepoles	Gasketed Sliding Cover	25	13	2.2	
Unslotted Guidepoles	Gasketed sliding Cover, w. Wiper	14	3.7	0.78	
Unslotted Guidepoles	Gasketed Sliding Cover, w. Sleeve	8.6	12	0.81	
Slotted Guide-Pole/Sample Well	Ungask. Sliding Cover, w/o Float	43	270	1.4	1
Slotted Guide-Pole/Sample Well	Ungask. Sliding Cover, w. Float	31	36	2	
Slotted Guide-Pole/Sample Well	Gask. Sliding Cover, w/o Float	43	270	1.4	
Slotted Guide-Pole/Sample Well	Gask. Sliding Cover, w. Float	31	36	2	
Slotted Guide-Pole/Sample Well	Gask. Sliding Cover, w. Pole Wiper	41	48	1.4	
Slotted Guide-Pole/Sample Well	Gask. Sliding Cover, w. Pole Sleeve	11	46	1.4	
Slotted Guide-Pole/Sample Well	Gask. Sliding Cover, w. Pole Sleeve,Wiper	8.3	4.4	1.6	
Slotted Guide-Pole/Sample Well	Gask. Sliding Cover, w. Float, Wiper	21	7.9	1.8	
Slotted Guide-Pole/Sample Well	Gask Sliding Covr, w. Float,Sleeve,Wiper	11	9.9	0.89	
Sample Pipe or Well (24-in. Diam.)	Slotted Pipe-Sliding Cover, Gask.	44			
Sample Pipe or Well (24-in. Diam.)	Slotted Pipe-Sliding Cover, Ungask.	57			
Automatic Gauge Float Well	Unbolted Cover, Ungasketed	14	5.4	1.1	1
Automatic Gauge Float Well	Unbolted Cover, Gasketed	4.3	17	0.38	
Automatic Gauge Float Well	Bolted Cover, Gasketed	2.8	0	0	
Gauge-Hatch/Sample Well	Weighted Mech. Actuation, Gask.	0.47	0.02	0.97	
Gauge-Hatch/Sample Well	Weighted Mech. Actuation, Ungask.	2.3	0	0	
Gauge-Hatch/Sample Well	Slit Fabric Seal 10% Open	12	0	0	1
Vacuum Breaker	Weighted Mech. Actuation, Ungask.	7.8	0.01	4	
Vacuum Breaker	Weighted Mech. Actuation, Gask.	6.2	1.2	0.94	1
Roof Drain	Open	1.5	0.21	1.7	
Roof Drain	90% Closed	1.8	0.14	1.1	
Stub Drain (1-in. Diam.)		1.2	0	0	27
Roof Leg - IFR	Adjustable	7.9	0	0	16
Roof Leg - Pontoon Area	Adjustable, Pontoon Area, Ungasketed	2	0.37	0.91	
Roof Leg - Pontoon Area	Adjustable, Pontoon Area, Gasketed	1.3	0.08	0.65	
Roof Leg - Pontoon Area	Adjustable, Pontoon Area, Sock	1.2	0.14	0.65	
Roof Leg - Center Area	Adjustable, Center Area, Ungasketed	0.82	0.53	0.14	
Roof Leg - Center Area	Adjustable, Center Area, Gasketed	0.53	0.11	0.13	
Roof Leg - Center Area	Adjustable, Center Area, Sock	0.49	0.16	0.14	
Roof Leg - Double-Deck	Adjustable, Double-Deck Roofs	0.82	0.53	0.14	
Roof Leg	Fixed	0	0	0	
Rim Vent	Weighted Mech. Actuation, Ungask.	0.68	1.8	1	
Rim Vent	Weighted Mech. Actuation, Gask.	0.71	0.1	1	
Ladder Well	Sliding Cover, Ungasketed	76	0	0	1
Ladder Well	Sliding Cover, Gasketed	56	0	0	
				Annual Deck Fitting Factor:	311.60
				Maximum Deck Fitting Factor:	311.60

TABLE 2F
PROJECT EMISSION INCREASE

Pollutant[1]:	**VOC**	**Permit No.:**	**38754 / PSD-TX-324**
Baseline Period:	**2019 / 2020**	**Project Name:**	**HOC Reconfiguration Project**

	Affected or Modified Facilities[2]			Permit No.	Actual Emissions[3] (tons/yr)	A Baseline Emissions[4] (tons/yr)	B Proposed Emissions[5] (tons/yr)	Projected Actual Emissions (tons/yr)	Difference (B-A)[6] (tons/yr)	Correction[7] (tons/yr)	Project Increase[8] (tons/yr)
	FIN	EPN	Facility Name								
1	24-ST-01	121	Heavy Oil Cracker (HOC) Belco Scrubber	38754	99.11	99.11	122.74		23.63	-	23.63
2	MEROX	121/ 30-B-05	New Merox Vent		-	-	1.05		1.05	-	1.05
3	30-B-05	30-B-05	Boiler	38754	-	-	10.25		10.25	-	10.25
4	HOC-PP-CT	HOC-PP-CT	Cooling Tower- Propylene Project	38754	-	-	4.78		4.78	-	4.78
5	XX-01	XX-01	HOC PP Gas Plant CAS	38754	-	-	0.02		0.02	-	0.02
6	Various	FUG-CAP	Piping Fugitives	38754	-	-			-	-	29.33
7	70-TK-110	17	Gasoline Blendstock Tank (70-TK-110)	135590							0.15
8	83-TK-25	187	Sour Water Tank	38754							0.18
9	50-TK-64/65	164/165	Iso-octene Tanks	135590							0.10
10	70-TK-105	13	Distillate Storage Tanks	135590							0.49
11	70-TK-95/96/97/98	7/8/34/35	Distillate Storage Tanks	135590							0.36
12	70-TK-51	TK-51	Cat Naphtha Storage Tank	135590							2.94
13	SRU, SCOT	121	Sulfur Recovery	38754							0.26
14	13-H-01A. 13-H-01B, 13-H-01C	118	SMR (Heater Combustion)	38754							0.63
15	47-H-01. 47-H-02, 47-H-03, 47-H-04	150	HCU Heaters	38754	2.87	2.87	4.38		1.51		1.51
16	Various (See Table B-8)	Various (See Table B-8)	Wastewater Treatment	38754							0.76
17	SHIP FUG	SHIP-FUG	Loading - Ship Fugitives	38754							0.96
18	VRU	VRU	Loading - MVRU	38754							1.30

19	LOADINGFUG	TRUCKFUG	Loading - Truck Fugitives	38754							0.16
20	T-RACK	TRUCKCOMB	Loading - Truck Combustor	38754							4.89
21	MSS Caps	MSS Caps	Project Total:	38754							0.39
22											
										Page Subtotal[9]:	**84.14**
										Project Total:	**84.14**

[1] Individual Table 2Fs should be used to summarize the project emission increase for each criteria pollutant

[2] Emission Point Number as designated in NSR Permit or Emissions Inventory

[3] All records and calculations for these values must be available upon request

[4] Correct actual emissions for currently applicable rule or permit requirements, and periods of non-compliance. These corrections, as well as any MSS previously demonstrated under 30 TAC 101, should be explained in the Table 2F supplement

[5] If projected actual emission is used it must be noted in the next column and the basis for the projection identified in the Table 2F supplement

[6] Proposed Emissions (column B) minus Baseline Emissions (column A)

[7] Correction made to emission increase for what portion could have been accommodated during the baseline period. The justification and basis for this estimate must be provided in the Table 2F supplement

[8] Obtained by subtracting the correction from the difference. Must be a positive number.

[9] Sum all values for this page.

TABLE 3F
PROJECT CONTEMPORANEOUS CHANGES [1]

Company:	Valero Refining-Texas, L.P.
Permit Application No.:	38754 / PSDTX324M14 — VOC

	Project Date [2]:	Facility at Which Emission Change Occurred [3] FIN	EPN	Permit No.	Project Name or Activity	Baseline Period	A: Proposed Emissions (tons/yr) [4]	B: Baseline Emissions (tons/year) [5]	Difference (A-B) [6]	Creditable Decrease or Increase [7]
1	1/1/2024	(See Table 2F)	(See Table 2F)	(See Table 2F)	HOC Reconfiguration Project	2019-20	84.14		84.14	84.14
2	2/13/2018	11-H-01	114	38754	Increase average annual firing rate of existing Desalter Heater	2015-16	2.34	1.86	0.48	0.48
3	4/24/2018	11F-HDS	11F	151262	CY2017 Annual 106.261 Notification	NA	0.30		0.30	0.30
		VACUUMUNIT	2F			NA	0.03		0.03	0.03
		#TM-Terminal	TERM-F			NA	0.94		0.94	0.94
		HDS-FUG	12F			NA	0.24		0.24	0.24
		SMR-FUG	13F			NA	0.04		0.04	0.04
		WWTP-FUG	83F			NA	0.01		0.01	0.01
		CRUDE UNIT	1F			NA	0.65		0.65	0.65
		SHU-FUG	54F			NA	0.04		0.04	0.04
		ALKY-FUG	31F			NA	0.44		0.44	0.44
			903			NA	0.18		0.18	0.18
4	5/23/2019	PVCU	PVCU	155846	Addition of LPG and propylene barge loading controlled by portable VCU	NA	2.24		2.24	2.24
		NG-FUG	NG-FUG			NA	0.02		0.02	0.02
5	4/30/2019	LPG STORAGE	LPGSTGF	156307	CY2018 Annual 106.261 Notification	NA	0.07		0.07	0.07
		HOC-FUG	21/22F			NA	0.37		0.37	0.37
		ALKY-FUG	31F			NA	0.26		0.26	0.26
		DOCKS-F	DOCKS			NA	0.98		0.98	0.98
		SWS-FUG	42F			NA	0.05		0.05	0.05
		SHU-FUG	54F			NA	0.01		0.01	0.01
		11F-HDS	11F			NA	0.08		0.08	0.08
6	12/18/2019	LOADINGFUG	TRUCKFUG	38754	Increase annual truckloading (incorporation/consolidation of PBRs)	2017-18	15.80	10.54	5.26	5.26
		T-RACK	TRUCKCOMB			2017-18	13.61	2.75	10.86	10.86
7	11/19/2019	OLEFLEX-FU	38F	158668	Oleflex Unit Throughput Increase	NA	0.40	-	0.40	0.40
		38-H-01	162			2010-11	8.41	6.42	1.99	1.99
8	4/20/2020	LPG STORAGE	LPGSTGF	160677	CY2019 Annual 106.261 Notification	NA	0.02	-	0.02	0.02
		HDS-FUG	12F			NA	0.01		0.01	0.01
		DOCKS-F	DOCKS			NA	0.01		0.01	0.01

Company:	Valero Refining-Texas, L.P.	
Permit Application No.:	38754 / PSDTX324M14	VOC

	Project Date[2]:	Facility at Which Emission Change Occurred[3] FIN	EPN	Permit No.	Project Name or Activity	Baseline Period	A Proposed Emissions (tons/yr)[4]	B Baseline Emissions (tons/year)[5]	Difference (A-B)[6]	Creditable Decrease or Increase[7]
		11F-HDS	11F			NA	0.02		0.02	0.02
		SMR-FUG	13F			NA	0.04		0.04	0.04
		HOC-FUG	21/22F			NA	0.10		0.10	0.10
		08-F	08F			NA	0.06		0.06	0.06
		HCU-FUG	47F			NA	0.09		0.09	0.09
		WWTP-FUG	83F			NA	0.08		0.08	0.08
9	5/22/2020	SCOT/SRU	121	161261	Added sulfur tanks - Tailgas Incinerator increases	NA	0.01		0.01	0.01
10	5/10/2021	LPG STORAGE	LPGSTGF	164619	CY2020 Annual 106.261 Notification	NA	0.26		0.26	0.26
		HDS-FUG	12F			NA	1.13		1.13	1.13
		#TM-Terminal	TERM-F			NA	0.17		0.17	0.17
		NHT-FUG	48F			NA	0.17		0.17	0.17
		HOC-FUG	21F			NA	0.17		0.17	0.17
		CRU-FUG	49F			NA	0.08		0.08	0.08
		OLEFLEX-FU	38F			NA	0.03		0.03	0.03
		ALKY-FUG	31F			NA	0.01		0.01	0.01
		WWTP-FUG	83F			NA	0.01		0.01	0.01
		SHIP FUG	SHIP FUG			NA	0.01		0.01	0.01
		CRUDE UNIT	1F			NA	0.03		0.03	0.03
		08-F	08F			NA	0.08		0.08	0.08
		VACUUMUNIT	2F			NA	0.03		0.03	0.03
		MVRUF	MVRUF			NA	0.03		0.03	0.03
		BUTAMER	36F			NA	0.01		0.01	0.01
11	6/1/2021	HOC-FUG	21/22F	165131	Reliability Turnaround Projects	NA	0.56		0.56	0.56
		ALKY-FUG	31F			NA	0.38		0.38	0.38
									Page Subtotal[9]:	113.68
									Summary of Contemporaneous Changes	113.68

[1] Individual Table 3F=s should be used to summarize the project emission increase and net emission increase for each criteria pollutant.
[2] The start of operation date for the modified or new facilities. Attach Table 4F for each project reduction claimed.
[3] Emission Point No. as designated in NSR Permit or Emissions Inventory.
[4] All records and calculations for these values must be available upon request.
[5] All records and calculations for these values must be available upon request.
[6] Proposed (column A) - Baseline (column B).
[7] If portion of the decrease not creditable, enter creditable amount.

Company:	Valero Refining-Texas, L.P.		
Permit Application No.:	38754 / PSDTX324M14		VOC

Project Date [2]:	Facility at Which Emission Change Occurred [3] FIN	EPN	Permit No.	Project Name or Activity	Baseline Period	A Proposed Emissions (tons/yr) [4]	B Baseline Emissions (tons/year) [5]	Difference (A-B) [6]	Creditable Decrease or Increase [7]

[8] Sum all values for this page.

Special Conditions

Permit Numbers 38754, PSDTX324M15, and GHGPSDTX211

1. This permit authorizes emissions only from those points listed in the attached table entitled "Emission Sources - Maximum Allowable Emission Rates" (MAERT), and the facilities covered by this permit are authorized to emit subject to the emission rate limits on that table and other operating requirements specified in the special conditions. **(TBD)**.

Throughput Limitations

2. Tank truck loading operations are limited to the following liquids and maximum loading rates: **(12/19)**

Chemical	Hourly Rate (gal/hr)
Kerosene	30,000
Diesel	60,000
Gasoline	98,000
Residual Oils	31,920

3. Marine loading shall comply with the following:

   A. Marine loading with emissions that are controlled with the marine vapor recovery unit (VRU) shall be limited to a maximum of 35,000 bbl/hr. The liquids that are loaded at this rate and controlled with the VRU at this facility are limited to gasoline, natural gasoline, naphtha, cat gasoline, alkylate, and reformate.

   The BT concentrate, mixed xylenes, heartcut, and toluene concentrate may also be loaded into marine vessels with emissions controlled by the VRU, at a rate not to exceed 5,000 bbl/hr. Only one of these products may be loaded at a time.

   B. Marine loading with uncontrolled vapor emissions shall be limited to the following services at the indicated rates:

Liquid	Barge bbl/hr	Ship bbl/hr
Diesel*	8,500	12,500
Kerosene*	5,000	12,500
Gas Oil	6,000	20,000
ATB	6,000	20,000
VTB	6,000	20,000
Slurry	6,000	0
Bunker	6,000	20,000

*Diesel and kerosene shall not be loaded onto ships and barges concurrently.

Loading Controls

4. Operation without visible liquid leaks or spills shall be maintained at all loading or unloading facilities regardless of vapor pressure. This does not apply to momentary dripping associated with the initial connection or disconnection of fittings. Sustained dripping from fittings during loading or unloading operations is not permitted. Any liquid spill that occurs during loading or unloading activities shall be cleaned up immediately to minimize air emissions.

5. Emissions resulting from the tank truck loading of gasoline shall be routed to the Vapor Combustor (Emission Point No. [EPN] TRUCKCOMB) for final abatement. The volatile organic compounds (VOC) emissions from EPN TRUCKCOMB shall not exceed 10 milligrams per liter of gasoline loaded. The vapor combustor combustion temperature shall be maintained at or above 1400˚F (based on a five-minute averaging period) when loading vapors are routed to it. This temperature shall be recorded during loading operations and the records maintained on-site. The vapor combustor operating temperature may be lowered if it has been tested at the lower temperature in accordance with Special Condition (SC) No. 39 to demonstrate compliance with this emission limit. Records associated with this permit condition shall be kept for at least five years. The Vapor Combustion Unit (EPN TRUCKCOMB) shall comply with the following. **(12/19)**

   A. The vapor combustor shall be operated with no visible emissions and have a constant pilot flame during all times waste gas could be directed to it. The temperature of the combustion chamber shall be continuously monitored when loading vapors are routed to it. The time, date, and duration of any drop of temperature below 1400°F shall be recorded. Each monitoring device shall be accurate to, and shall be calibrated or have a calibration check performed at a frequency in accordance with, the manufacturer’s specifications.

   B. Pilot and make-up fuel for the vapor combustor shall be pipeline-quality, sweet natural gas containing no more than 5 grains of total sulfur per 100 dry standard cubic feet.

   C. The control device shall not have a bypass. If there is a bypass for the control device, comply with either of the following requirements:

      (1) Install a flow indicator that records and verifies zero flow at least once every fifteen minutes immediately downstream of each valve that if opened would allow a vent stream to bypass the control device and be emitted, either directly or indirectly, to the atmosphere; or

      (2) Once a month, inspect the valves, verifying that the position of the valves and the condition of the car seals prevent flow out the bypass.

      A bypass does not include authorized analyzer vents, highpoint bleeder vents, low point drains, or rupture discs upstream of pressure relief valves if the pressure between the disc and relief valve is monitored and recorded at least weekly. A deviation shall be reported if the monitoring or inspections indicate bypass of the control device when it is required to be in service.

6. All tank trucks loading gasoline at this facility shall be leak-tight tested a minimum of once a year using the method described in the U.S. Environmental Protection Agency (EPA) regulations in Title 40 Code of Federal Regulations Part 63 (40 CFR Part 63), Subparts A and R, National Emission Standards for Gasoline Distribution Facilities (Bulk Gasoline Terminals and Pipeline Breakout Stations). **(12/19)**

7. All tank truck loading of residual oils, kerosene and diesel shall be conducted using a submerged fill pipe or using a discharge point no higher than 6 in. above the bottom of the cargo tank. **(12/19)**

8. The marine VRU shall limit VOC emissions from EPN VRU to 5 mg/l of liquid loaded.

9. All marine loading emissions of liquids with vapor pressures greater than 0.5 pound per square inch, absolute (psia) must be vented to the VRU.

10. A vacuum of at least one-inch water column shall be established downstream of the dock pressure control valve prior to commencing marine loading. A vacuum shall also be established on the barge or ship being loaded if possible. The vacuum shall be maintained during loading and monitored continually or an alarm activated if the vacuum is not maintained.

11. The VRU VOC concentration as measured by the continuous emission monitor specified in SC No. 40 shall not exceed 7,621 parts per million (ppm) over any one-hour period while the marine loading emissions are being vented. If the reading exceeds this limit, marine loading shall be secured, the Texas Commission on Environmental Quality (TCEQ) Corpus Christi Regional Office notified, and the cause determined and corrected before loading resumes.

Combustion Controls

12. Flares shall be designed and operated in accordance with the following requirements: **(01/21)**

    A. The flare system(s) shall be designed such that the combined vent gas, assist air, and/or total steam to each flare meets the 40 CFR § 63.670 specifications for minimum combustion zone net heating value and maximum tip velocity at all times that emissions may be directed to the flare for more than 15 minutes. Flared gas actual exit velocity, vent gas net heating value, and flared gas combustion zone net heating value shall be determined in accordance with 40 CFR §63.670(k), §63.670(l), and §63.670(m) on a 15-minute block average and recorded at least once every 15 minutes.

       If the flare actively receives perimeter assist air, it shall be operated to meet the 40 CFR §63.670 specifications for minimum net heating value dilution parameters.

    B. The flare(s) shall be operated with pilot flame(s) present at all times vent gas may be directed to the flare(s). The pilot flame(s) shall be continuously monitored by a thermocouple, infrared monitor, or ultraviolet monitor. The time, date, and duration of any loss of pilot flame shall be recorded. Each monitoring device shall be accurate to, and shall be calibrated at a frequency in accordance with, the manufacturer's specifications.

    C. Flares shall be operated with no visible emissions except periods not to exceed a total of five minutes during any two consecutive hours, demonstrated and recorded per the requirements of §63.670(h).

    D. The permit holder shall install flow monitors that continuously measure, calculate and record the total volumetric vent stream flow rate (including waste gas, purge gas, supplemental gas, and sweep gas), and shall install a monitoring system capable of determining the concentration of individual components in the flare vent gas or the net heating value of the flare vent gas. The flow monitor sensor and analyzer sample points shall be installed in the vent stream such that the total vent stream to the flare is measured and analyzed.

If one or more gas streams that combine to comprise the total flare vent gas flow are monitored separately for net heating value and flow, the 15-minute block average net heating value shall be determined separately for each measurement location and a flow-weighted average of the gas stream net heating values shall be used to determine the 15-minute block average net heating value of the cumulative flare vent gas.

If assist air or assist steam is used, the owner or operator shall install, operate, calibrate, and maintain a monitoring system capable of continuously measuring, calculating, and recording the total volumetric flow rate of assist air and/or assist steam used with the flare.

If pre-mix assist air and/or perimeter assist are used, the owner or operator shall install, operate, calibrate, and maintain a monitoring system capable of separately measuring, calculating, and recording the volumetric flow rate of premix assist air and/or perimeter assist air used with the flare. Continuously monitoring fan speed or power and using fan curves is an acceptable method for continuously monitoring assist air flow rates.

Perimeter assist air includes all air assist except premix assist air. Premix assist air includes any air intentionally entrained in center steam.

Assist air includes premix assist air and perimeter assist air, but does not include the surrounding ambient air.

The monitors shall be calibrated or have a calibration check performed as specified in Table 13 of the appendix to 40 CFR 63, Part CC to meet the following accuracy specifications: the vent flow monitor shall be ±20 percent of flow rate at velocities ranging from 0.03 to 0.3 meters per second (0.1 to 1 feet per second) ±5 percent of flow rate at velocities greater than 0.3 meters per second (1 feet per second), all other gas flow monitors shall be ±5 percent over the normal range of flow measured or 280 liters per minute (10 cubic feet per minute) whichever is greater, temperature monitor shall be ±1 percent over the normal range of temperature measured, expressed in degrees Celsius (C), or 2.8 degrees C, whichever is greater, and pressure monitor shall be ±5 percent over the normal operating range or 0.12 kilopascals (0.5 inches of water column), whichever is greater. For purposes of this permit, a calibration check means, at a minimum, using a second device or method to verify that the monitor is accurate as specified in the permit.

Calorimeters shall have an accuracy of at least ±2% of span and be calibrated, installed, operated, and maintained in accordance with manufacturer recommendations and as specified in Table 13 of the appendix to 40 CFR 63, Part CC, to continuously measure and record the net heating value of the vent gas sent to the flare, in British thermal units/standard cubic foot of the gas.

For determination of net heating value by gas chromatograph, the minimum accuracy shall be as specified in Performance Specification 9 of Part 60, appendix B. Composition monitoring instruments shall be calibrated, installed, operated, and maintained in accordance with manufacturer recommendations and as specified in 40 CFR §63.671(e) and Table 13 of 40 CFR Pt. 63, Subpart CC. Individual component properties specified in Table 12 of Subpart CC shall apply to net heating value calculations.

E. Quality assured (or valid) data must be generated during periods that flare is operating. Loss of valid data due to periods of monitor break down, out-of-control operation (producing inaccurate data), repair, maintenance, or calibration may be exempted provided it does not exceed 5 percent of the time (in minutes) that the flare operated over the previous rolling 12-month period. The measurements missed shall be estimated using engineering judgment and the methods used recorded.

F. Hourly mass emission rates shall be determined and recorded using the monitoring data collected pursuant to paragraph D of this Special Condition and the emission factors specified in the permit application PI-1 dated March 31, 2011.

G. The Acid Gas Flare (EPN 135) is not authorized for routine emissions or for planned maintenance, startup, and shutdown (MSS) emissions.

13. The American Petroleum Institute (API) Separator Combustor shall achieve at least 98 percent destruction efficiency. The vapor combustor combustion temperature shall be maintained at or above 1600˚F (based on a five-minute averaging period) when the separator is in service. This temperature shall be recorded and the records maintained on-site. The vapor combustor operating temperature may be lowered if it has been tested at the lower temperature in accordance with SC No. 38 to demonstrate compliance with this emission limit. Records associated with this permit condition shall be kept for five years.

A back-up carbon adsorption system (CAS) is a means of control equivalent to the API Separator Combustor for compliance with the preceding paragraph of this special condition. When used as back-up control, the CAS shall meet the following requirements:

A. The CAS shall consist of 2 carbon canisters in series with adequate carbon supply for the emission control operation.

B. The CAS shall be sampled downstream on the first can and the concentration recorded at least once every hour of CAS run time to determine breakthrough of the VOC. The sampling frequency may be extended using either of the following methods:

(1) The CAS systems equipped with an upstream liquid scrubber may be sampled once every 12 hours of CAS run time to determine breakthrough.

(2) Sampling frequency may be extended to up to 30 percent of the minimum potential saturation time for a new can of carbon. The permit holder shall maintain records including the calculations performed to determine the minimum saturation time.

(3) The carbon sampling frequency may be extended to longer periods based on previous experience with carbon control of a MSS waste gas stream. The past experience must be with the same VOC, type of facility, and MSS activity. The basis for the sampling frequency shall be recorded. If breakthrough is monitored on the initial sample of the upstream can when the polishing can is put in place, a permit deviation shall be recorded.

C. The method of VOC sampling and analysis shall be by detector meeting the requirements of SC No. 52. **(02/18)**

D. Breakthrough is defined as the highest measured VOC or benzene concentration at or exceeding 100 ppmv or 5 ppmv, respectively, above background. When the condition of breakthrough of VOC from the initial saturation canister occurs, the waste gas flow shall be switched to the second canister and a fresh canister shall be placed as the new final polishing canister within twenty-four hours. In lieu of replacing canisters, the flow of waste gas may be discontinued until the canisters are switched. Sufficient new activated carbon canisters shall be available to replace spent carbon canisters such that replacements can be done in the above specified time frame.

E. Records of CAS monitoring shall include the following:

(1) Sample time and date.

(2) Monitoring results (ppmv).

(3) Canister replacement log.

F. Single canister systems are allowed if the time the carbon canister is in service is limited to no more than 30 percent of the minimum potential saturation time. The permit holder shall maintain records for these systems, including the calculations performed to determine the saturation time. The time limit on carbon canister service shall be recorded and the expiration date attached to the carbon can.

G. Liquid scrubbers may be used upstream of carbon canisters to enhance VOC capture provided such systems are closed systems and the spent absorbing solution is discharged into a closed container, vessel, or system.

14. No visible emissions are allowed from the heaters.

15. The permittee shall operate a continuous hydrogen sulfide (H_2S) monitoring instrument in the fuel feed line header for all fired units with a firing rate greater than 40 MMBtu/hr to continuously monitor a representative sample of fuel gas for H_2S content. The instrument shall be installed and operated according to the specifications set out in 40 CFR § 60.105. These gases shall have a maximum H_2S concentration of 0.054 grain per dry standard cubic foot (dscf) on an hourly average. The Vacuum Unit Heater (EPN 74) may also be fired with vacuum off-gas having a maximum H_2S concentration of 0.10 grain/dscf on an hourly average.

16. Heater, boiler, and reboiler emissions of ammonia (NH_3), carbon monoxide (CO), hydrogen sulfide (H_2S), nitrogen oxide (NO_x), Particulate matter (PM), PM ≤ 10 microns diameter (PM_{10}), PM ≤ 2.5 microns diameter ($PM_{2.5}$), and volatile organic compounds (VOC) shall meet the following specifications: **(TBD)**

EPN	Facility	NO_x 1-hr block average (lb/MMBtu)	NO_x 3-hr block average (lb/MMBtu)	NO_x daily 365 rolling average (lb/MMBtu)	NO_x Compliance Method
162	38-H-01/02/03	0.06	--	0.060	CEMS
1	Crude Heater	0.06	--	0.060	CEMS
74	Vacuum Unit Heater	0.06	0.060	--	stack test
150	47-H-01/02/03/04	0.06	0.060	--	stack test
152	49-H-01/02/03/04	0.07	--	0.070	CEMS
153	Boiler 30-B-02	--	--	0.080	CEMS
172	RSU Heater	0.06	0.060	--	stack test
49H90	C7 Splitter Reboiler	0.04	--	0.040	CEMS
114	Desalter Heater	0.040	0.040	--	stack test
115	12-H-01A/B	0.06	0.060	--	stack test
116	HDS Heavy Oil Preheater	0.12	--	--	
117	Alky Fract Reboiler	0.036	--	0.036	CEMS
118	13-H-01A/B/C	0.06	--	0.060	CEMS

EPN	Facility	NO_x 1-hr block average (lb/MMBtu)	NO_x 3-hr block average (lb/MMBtu)	NO_x daily 365 rolling average (lb/MMBtu)	NO_x Compliance Method
119	Sulften Heater	0.12	--	--	
120	Butamer Heater	0.12	--	--	
195	GD Charge Heater	0.035	--	0.035	CEMS
30-B-04	Boiler 30-B-04	0.015	--	0.015	CEMS
30-B-05	Boiler 30-B-05	0.015	--	0.015	CEMS

EPN	Facility	CO 1-hr block average
162	38-H-01/02/03	0.05 lb/MMBtu
1	Crude Heater	0.05 lb/MMBtu
74	Vacuum Unit Heater	0.05 lb/MMBtu
150	47-H-01/02/03/04	0.03 lb/MMBtu
152	49-H-01/02/03/04	0.03 lb/MMBtu
153	Boiler 30-B-02	--
172	RSU Heater	0.05 lb/MMBtu
49H90	C7 Splitter Reboiler	0.05 lb/MMBtu
114	Desalter Heater	0.037 lb/MMBtu
115	12-H-01A/B	0.05 lb/MMBtu
116	HDS Heavy Oil Preheater	0.016 lb/MMBtu
117	Alky Fract Reboiler	0.016 lb/MMBtu
118	13-H-01A/B/C	0.05 lb/MMBtu
119	Sulften Heater	0.016 lb/MMBtu
120	Butamer Heater	0.016 lb/MMBtu
195	GD Charge Heater	100 ppmv (3% O_2)
30-B-04	Boiler 30-B-04	50 ppmv (3% O_2)
30-B-05	Boiler 30-B-05	50 ppmv (3% O_2)

EPN	Facility	VOC lb/MMBtu	PM/PM_{10} $/PM_{2.5}$ lb/MMBtu
30-B-04	Boiler 30-B-04	0.0053	0.0075
119	Sulften Heater	0.0053	0.0075
30-B-05	Boiler 30-B-05	0.0053	0.0075

EPN	Facility	H_2S in fuel gas lb/MMBtu	NH_3 lb/MMBtu
30-B-04	Boiler 30-B-04	87 ppmv	10 ppmv
119	Sulften Heater	87 ppmv	10 ppmv
30-B-05	Boiler 30-B-05	87 ppmv	10 ppmv

During reduced-load operations for heaters or boilers equipped with CO CEMS, the emission limitations in the above table for CO shall not apply. Reduced-load operation means the operation of a heater or boiler at a firing rate of no greater than 50% of the maximum rated heat duty of the heater or boiler and not during planned MSS. The time and duration of each of each heater or boiler non-routine operation shall be recorded. Additionally, during each non-routine operation the rates of CO shall be calculated from a boiler or heater's CEMS data to demonstrate that MAERT emission limits are not exceeded. Records shall be maintained at the plant site for a period of five years. **(date – Project No. 326326)**

17. Heaters and boilers are prohibited from burning or combusting fuel oil. For purposes of this paragraph, fuel oil is predominately in the liquid phase at the point of combustion with a sulfur content of greater than 0.05% by weight. **(08/16)**

18. Upon request by the Executive Director of the TCEQ, the EPA, or any local air pollution control program having jurisdiction, the holder of this permit shall provide a sample and/or an analysis of the fuel(s) utilized in these facilities or shall allow air pollution control agency representatives to obtain a sample for analysis.

19. The Desalter Heater (EPN 114) shall comply with the following: **(date – Project No. 326326)**

    A. The desalter heater shall only be fired with natural gas and fuel gas and the firing rate shall not exceed 99 MMBtu/hr on an annual basis (12-month rolling period) and short-term basis.

    B. The natural gas and fuel gas shall be sampled every 6 months to determine the net heating value. Test results from the fuel supplier may be used to satisfy this requirement.

    C. The permit holder shall install and operate a fuel flow meter to measure the gas fuel usage for the desalter heater. The monitored data shall be reduced to an hourly average flow rate at least once every day, using a minimum of four equally-spaced data points from each one-hour period. The monitoring device shall be calibrated at a frequency in accordance with the manufacturer's specifications or at least annually, whichever is more frequent, and shall be accurate to within 5 percent.

    D. Quality assured (or valid) data must be generated when the desalter heater is operating. Loss of valid data due to periods of monitor break down, out-of-control operation (producing inaccurate data), repair, maintenance, or calibration may be exempted provided it does not exceed 5 percent of the time (in minutes) that the desalter heater operated over the previous rolling 12 month period. The measurements missed shall be estimated using engineering judgment and the methods used recorded.

Sulfur Recovery Units (SRUs) and HOC Scrubber

20. The coke burn-off non-sulfate particulate matter (PM) emissions may not exceed 0.57 pound per 1,000 pounds of coke burn-off. The HOC scrubber sulfuric acid mist (a subset of total PM) emissions shall not exceed 0.35 pound per 1,000 pounds of coke burn-off.

    Particulate emissions from the HOC shall not exceed one (1) pound per 1,000 pounds of coke burned (front half only according to Method 5B or 5F, as appropriate), measured as a one-hour average over three performance test runs. **(08/16)**

21. The pH of the HOC scrubber circulating caustic solution shall be continually monitored and be maintained at a level between 6.0 and 9.0 by the addition of fresh caustic solution as required. The pH shall be recorded at least hourly, and the records maintained at the plant site for a period of five years. These records shall be made available for inspection by the Executive Director of the TCEQ or his designated representative.

22. The minimum sulfur recovery efficiency for the SRU/Sulften and SRU/Scot shall be 99.8 percent. The sulfur recovery efficiency shall be determined by calculation as follows: **(01/21)**

    Efficiency = (S recovered)*(100) / (S acid gas)

    Where:

    Efficiency = sulfur recovery efficiency, percent

    S recovered = (S acid gas - S stack), pounds per hour (lb/hr)

    S acid gas = sulfur in acid gas stream, lb/hr

    S stack = sulfur in incinerator stack, lb/hr

    The sulfur recovery efficiency shall be demonstrated for each calendar day (24-hour period) by a mass balance calculation using data obtained from the incinerator stack sulfur dioxide monitor and sulfur production records. Records and copies of the compliance calculations shall be maintained.

23. Acid gas must be routed to a properly operating SRU train. All SRU trains shall normally be operated when acid gas is being produced to maintain the maximum redundant sulfur capacity. The TCEQ Regional Office shall be notified within 72 hours if any SRU train is not fully operational. The notification shall include a description of the problem, the estimated loss of capacity, actions required to correct the problem, and when the line is expected to be fully operational.

    In the event that the Sulften/Scot unit is not operating properly, immediate steps shall be taken to correct the improper operation and shift the acid gas feeds to another fully operational SRU.

24. The Scot tail gas incinerator shall be operated with no less than 3.0 percent oxygen (O_2) in the incinerator stack and at no less than 1500˚F incinerator firebox exit temperature. The incinerator shall achieve a minimum H_2S destruction efficiency of 99.9 percent or 5 parts per million by volume (ppmv) (corrected to 3 percent excess O_2) reduced sulfur compound exit concentration. If stack testing indicates that a higher temperature or O_2 concentration is necessary to obtain a minimum H_2S destruction efficiency of 99.9 percent or 5 ppmv (corrected to 3 percent excess O_2) reduced sulfur compound exit concentration, then the temperature and O_2 maintained during the stack test will become the new minimum operating limits. The O_2 and temperature requirements do not apply

when performing a stack test on the incinerator in accordance with SC No. 39. The permit holder may request that the operating limits be relaxed with a permit alteration request should stack testing indicate the required emissions control is obtained at the proposed limits.

25. In order to control opacity from the stack of EPN 121, the permittee shall maintain the liquid to the filtering modules at a pressure greater than 45 pounds per square inch (psi) and the flue gas pressure drop across the filtering modules and the cyclolabs at no less than 5 inches of water. Liquid pressure and pressure drop shall be continuously recorded and maintained at the plant site for a period of five years. These records shall be made available for inspection by the Executive Director of the TCEQ or his designated representative.

    The opacity of emissions from the Caustic Scrubber Stack (EPN 121) shall not exceed 20 percent averaged over a six-minute period as determined by a trained observer.

Control Requirements

26. The Oleflex and Naphtha Continuous Catalyst Regenerator (CCR) scrubber liquids shall be sampled at least twice daily (once per shift) for caustic inventory. The pH of the scrubbing liquids in the Oleflex CCR caustic scrubber shall be maintained at 8 pH units or greater. The caustic concentration of the Naphtha Reformer CCR shall be maintained greater than 0.41 weight percent sodium hydroxide (measured as total alkalinity). **(11/20)**

27. The caustic absorber circulation rate for the Naphtha CCR shall be a minimum of 368 gpm. The circulation rate shall be recorded at least hourly, and the records maintained at the plant site for a period of five years. These records shall be made available for inspection by the Executive Director of the TCEQ or his designated representative.

28. Storage tanks are subject to the following requirements. The control requirements specified in paragraphs A through D of this condition shall not apply (1) where the VOC has an aggregate partial pressure of less than 0.50 psia at the maximum feed temperature or 95˚F, whichever is greater, or (2) to storage tanks smaller than 25,000 gallons.

    A. An internal floating deck or roof or equivalent control shall be installed in all tanks. The floating roof shall be equipped with one of the following closure devices between the wall of the storage vessel and the edge of the internal floating roof: (1) a liquid-mounted seal, (2) two continuous seals mounted one above the other, or (3) a mechanical shoe seal.

    B. An open-top tank containing a floating roof (external floating roof tank) which uses double seal or secondary seal technology shall be an approved control alternative to an internal floating roof tank provided the primary seal consists of either a mechanical shoe seal or a liquid-mounted seal and the secondary seal is rim-mounted. A weathershield is not approvable as a secondary seal unless specifically reviewed and determined to be vapor-tight.

    C. For any tank equipped with a floating roof, the permit holder shall perform the visual inspections and seal gap measurements as specified in 40 CFR § 60.113b, Testing and Procedures (as amended at 54 FR 32973, Aug. 11, 1989), to verify fitting and seal integrity. Records shall be maintained of the dates seals were inspected and seal gap measurements made, results of inspections and measurements made (including raw data), and actions taken to correct any deficiencies noted.

D. The floating roof design shall incorporate sufficient flotation to conform to the requirements of API Code 650 dated November 1, 1998, except that an internal floating cover need not be designed to meet rainfall support requirements and the materials of construction may be steel or other materials.

E. Uninsulated tank exterior surfaces exposed to the sun shall be white or aluminum. Storage tanks must be equipped with permanent submerged fill pipes.

F. The permit holder shall maintain an emissions record which includes calculated emissions of VOC from all storage tanks during the previous calendar month and the past consecutive 12-month period. The record shall include tank identification number, control method used, tank capacity in barrels, name of the material stored, VOC molecular weight, VOC monthly average temperature in degrees Fahrenheit, VOC vapor pressure at the monthly average material temperature in psia, VOC throughput for the previous month and year-to-date. Records of VOC monthly average temperature are not required to be kept for unheated tanks which receive liquids that are at or below ambient temperatures.

Emissions for tanks shall be calculated using the TCEQ publication titled "Technical Guidance Package for Chemical Sources - Storage Tanks."

G. Floating roof tanks 23, 26, and 164 shall be equipped with a Pole Sleeve System or equivalent as required by the Storage Tank Emission Reduction Partnership Program (STERPP) Agreement with U.S. EPA, dated May 23, 2001, as listed in Appendix I and Annex A of that agreement. Storage Tank 164 was owned by the Valero Bill Greehey Refinery – West Plant at the time of STERPP Agreement execution and is currently owned by NuStar Energy LP (a non-affiliated company).

29. Non-fugitive emissions from relief valves, safety valves, or rupture discs of gases containing VOC at a concentration of greater than 1 percent are not authorized by this permit unless authorized on the maximum allowable rates table. Any releases directly to atmosphere from relief valves, safety valves, or rupture discs of gases containing VOC at a concentration greater than 1 weight percent are not consistent with good practice for minimizing emissions.

30. All cooling towers except for the Propylene cooling tower (EPN HOC-PP-CT) shall comply with the requirements of paragraphs A-D, and the HOC cooling tower (EPN HOC-PP-CT) shall comply with the requirements of paragraph E: **(TBD)**

A. The cooling tower water shall be monitored monthly for VOC leakage from heat exchangers in accordance with the requirements of the TCEQ Sampling Procedures Manual, Appendix P (dated January 2003 or a later edition) or another air stripping method approved by the TCEQ Executive Director.

B. Cooling water VOC concentrations above 0.08 ppmw indicate faulty equipment. Equipment shall be maintained so as to minimize VOC emissions into the cooling water. Faulty equipment shall be repaired at the earliest opportunity but no later than the next scheduled shutdown of the process unit in which the leak occurs.

C. Emissions from the cooling tower are not authorized if the VOC concentration of the water returning to the cooling tower exceeds 0.80 ppmw. The VOC concentrations above 0.80 ppmw are not subject to extensions for delay of repair under this permit condition. The results of the monitoring and maintenance efforts shall be recorded.

D. Cooling water shall be sampled once a week for total dissolved solids (TDS) and once a day for conductivity. Dissolved solids in the cooling water drift are considered to be emitted as total particulate matter (PM) / PM equal to or less than 10 microns in diameter (PM_{10}) / PM equal to or less than 2.5 microns in diameter ($PM_{2.5}$). The data shall result from collection of water samples from the cooling tower feed water and represent the water being cooled in the tower. Water samples should be capped upon collection, and transferred to a laboratory area for analysis. The analysis method for TDS shall be EPA Method 160.1, ASTM D5907, and SM 2540 C [SM - 19th edition of Standard Methods for Examination of Water]. The analysis method for Conductivity shall be ASTM D1125-95A and SM2510 B. Use of an alternative method shall be approved by the TCEQ Regional Director prior to its implementation.

E. The HOC cooling tower (EPN HOC-PP-CT) shall be operated and monitored in accordance with the following:

(1) The VOC associated with the Propylene cooling tower (EPN HOC-PP-CT) water shall be monitored monthly with an air stripping system meeting the requirements of the TCEQ Sampling Procedures Manual, Appendix P (dated January 2003 or a later edition) or an approved equivalent sampling method. The results of the monitoring, cooling water flow rate and maintenance activities on the cooling water system shall be recorded. The monitoring results and cooling water hourly mass flow rate shall be used to determine cooling tower hourly VOC emissions. The rolling 12 month cooling water emission rate shall be recorded on a monthly basis and be determined by summing the VOC emissions between VOC monitoring periods over the rolling 12 month period. The emissions between VOC monitoring periods shall be obtained by multiplying the total cooling water mass flow between cooling water monitoring periods by the higher of the two VOC monitored results.

(2) Each cooling tower shall be equipped with drift eliminators having manufacturer's design assurance of 0.001% drift or less. Drifts eliminators shall be maintained and inspected at least annually. The permit holder shall maintain records of all inspections and repairs.

(3) Total dissolved solids (TDS) shall not exceed 6,000 parts per million by weight (ppmw). Dissolved solids in the cooling water drift are considered to be emitted as PM, PM_{10}, and $PM_{2.5}$ as represented in the permit application calculations.

(4) Cooling water shall be sampled at least once per week for TDS.

(5) Cooling water sampling shall be representative of the cooling tower feed water and shall be conducted using approved methods.

(a) The analysis method for TDS shall be EPA Method 160.1, ASTM D5907, and SM 2540 C [SM - 19th edition of Standard Methods for Examination of Water]. Water samples should be capped upon collection, and transferred to a laboratory area for analysis.

(b) Alternate sampling and analysis methods may be used to comply with (5)(a) with written approval from the TCEQ Regional Director. If approved by the TCEQ Regional Director, the permit holder shall submit a permit application to incorporate the alternative sampling and analysis method into the permit within 2 months of the date of written approval.

(c) Records of all instrument calibrations and test results and process measurements used for the emission calculations shall be retained.

(6) Emission rates of PM, PM_{10} and $PM_{2.5}$ shall be calculated using the measured TDS, the design drift rate and the daily maximum and average actual cooling water circulation rate for the short term and annual average rates. Alternately, the design

maximum circulation rate may be used for all calculations. Emission records shall be updated monthly.

Fugitive Emissions Control

31. Piping, Valves, Flanges, Pumps, and Compressors in VOC Service - Intensive Directed Maintenance - 28 VHP

Except as may be provided for in the special conditions of this permit, the following requirements apply to the above-referenced equipment.

A. These conditions shall not apply (1) where the VOC has an aggregate partial pressure or vapor pressure of less than 0.044 psia at 68˚F or (2) the operating pressure is at least 5 kilopascals (0.725 psi) below ambient pressure. Equipment excluded from this condition shall be identified in a list or by one of the methods described below to be made readily available upon request.

The exempted components may be identified by one or more of the following methods:

(1) piping and instrumentation diagram (PID);
(2) a written or electronic database or electronic file;
(3) color coding;
(4) a form of weatherproof identification; or
(5) designation of exempted process unit boundaries.

B. Construction of new and reworked piping, valves, pump systems, and compressor systems shall conform to applicable American National Standards Institute (ANSI), API, American Society of Mechanical Engineers (ASME), or equivalent codes.

C. New and reworked underground process pipelines shall contain no buried valves such that fugitive emission monitoring is rendered impractical. New and reworked buried connectors shall be welded.

D. To the extent that good engineering practice will permit, new and reworked valves and piping connections shall be so located to be reasonably accessible for leak-checking during plant operation. Difficult-to-monitor and unsafe-to-monitor valves, as defined by Title 30 Texas Administrative Code Chapter 115 (30 TAC Chapter 115), shall be identified in a list to be made readily available upon request. The difficult-to-monitor and unsafe-to-monitor valves may be identified by one or more of the methods described in subparagraph A above. If an unsafe-to-monitor component is not considered safe to monitor within a calendar year, then it shall be monitored as soon as possible during safe-to-monitor times. A difficult-to-monitor component for which quarterly monitoring is specified may instead be monitored annually.

E. New and reworked piping connections shall be welded or flanged. Screwed connections are permissible only on piping smaller than two-inch diameter. Gas or hydraulic testing of the new and reworked piping connections at no less than operating pressure shall be performed prior to returning the components to service or they shall be monitored for leaks using an approved gas analyzer within 15 days of the components being returned to service. Adjustments shall be made as necessary to obtain leak-free performance. Connectors shall be inspected by visual, audible, and/or olfactory means at least weekly by operating personnel walk-through.

Each open-ended valve or line shall be equipped with an appropriately sized cap, blind flange, plug, or a second valve to seal the line. Except during sampling, both valves shall be closed. If the removal of a component for repair or replacement results in an open ended line or valve, it is exempt from the requirement to install a cap, blind flange, plug, or second valve for 72 hours. If the repair or replacement is not completed within 72 hours, the permit holder must complete either of the following actions within that time period: the line or valve must have a cap, blind flange, plug, or second valve installed; or the permit holder shall verify that there is no leakage from the open-ended line or valve. The open-ended line or valve shall be monitored on a weekly basis in accordance with the applicable permit condition for fugitive emission monitoring, except that a leak is defined as any VOC reading greater than background. Leaks must be repaired within 24 hours or a cap, blind flange, plug, or second valve must be installed on the line or valve. The results of this weekly check and any corrective actions taken shall be recorded.

F. Accessible valves shall be monitored by leak-checking for fugitive emissions at least quarterly using an approved gas analyzer. Sealless/leakless valves (including, but not limited to, welded bonnet bellows and diaphragm valves) and relief valves equipped with a rupture disc upstream or venting to a control device are not required to be monitored. For valves equipped with rupture discs, a pressure-sensing device shall be installed between the relief valve and rupture disc to monitor disc integrity. All leaking discs shall be replaced at the earliest opportunity but no later than the next process shutdown.

A check of the reading of the pressure-sensing device to verify disc integrity shall be performed weekly and recorded in the unit log or equivalent. Pressure-sensing devices that are continuously monitored with alarms are exempt from recordkeeping requirements specified in this paragraph.

The gas analyzer shall conform to requirements listed in Method 21 of 40 CFR part 60, appendix A. The gas analyzer shall be calibrated with methane. In addition, the response factor of the instrument for a specific VOC of interest shall be determined and meet the requirements of Section 8 of Method 21. If a mixture of VOCs are being monitored, the response factor shall be calculated for the average composition of the process fluid. A calculated average is not required when all of the compounds in the mixture have a response factor less than 10 using methane. If a response factor less than 10 cannot be achieved using methane, then the instrument may be calibrated with one of the VOC to be measured or any other VOC so long as the instrument has a response factor of less than 10 for each of the VOC to be measured.

Replaced components shall be re-monitored within 15 days of being placed back into VOC service.

G. Except as may be provided for in the special conditions of this permit, all pump and compressor seals shall be monitored with an approved gas analyzer at least quarterly or be equipped with a shaft sealing system that prevents or detects emissions of VOC from the seal. Seal systems designed and operated to prevent emissions or seals equipped with an automatic seal failure detection and alarm system need not be monitored. These seal systems may include (but are not limited to) dual pump seals with barrier fluid at higher pressure than process pressure, seals degassing to vent control systems kept in good working order, or seals equipped with an automatic seal failure detection and alarm system. Submerged pumps or sealless pumps (including, but not limited to, diaphragm, canned, or magnetic-driven pumps) may be used to satisfy the requirements of this condition and need not be monitored.

H. Damaged or leaking valves or connectors found to be emitting VOC in excess of 500 ppmv or found by visual inspection to be leaking (e.g., dripping process fluids) shall be tagged and replaced or repaired. Damaged or leaking pump and compressor seals found to be emitting VOC in excess of 2,000 ppmv or found by visual inspection to be leaking (e.g., dripping process fluids) shall be tagged and replaced or repaired. A first attempt to repair the leak must be made within 5 days. Records of the first attempt to repair shall be maintained.

I. Every reasonable effort shall be made to repair a leaking component, as specified in this paragraph, within 15 days after the leak is found. If the repair of a component would require a unit shutdown that would create more emissions than the repair would eliminate, the repair may be delayed until the next scheduled shutdown. All leaking components which cannot be repaired until a scheduled shutdown shall be identified for such repair by tagging within 15 days of the detection of the leak. A listing of all components that qualify for delay of repair shall be maintained on a delay of repair list. The cumulative daily emissions from all components on the delay of repair list shall be estimated by multiplying by 24 the mass emission rate for each component calculated in accordance with the instructions in 30 TAC 115.782 (c)(1)(B)(i)(II). The calculations of the cumulative daily emissions from all components on the delay of repair list shall be updated within ten days of when the latest leaking component is added to the delay of repair list. When the cumulative daily emission rate of all components on the delay of repair list times the number of days until the next scheduled unit shutdown is equal to or exceeds the total emissions from a unit shutdown as calculated in accordance with 30 TAC 115.782 (c)(1)(B)(i)(I), the TCEQ Regional Manager and any local programs shall be notified and may require early unit shutdown or other appropriate action based on the number and severity of tagged leaks awaiting shutdown. This notification shall be made within 15 days of making this determination.

J. Records of repairs shall include date of repairs, repair results, justification for delay of repairs, and corrective actions taken for all components. Records of instrument monitoring shall indicate dates and times, test methods, and instrument readings. The instrument monitoring record shall include the time that monitoring took place for no less than 95% of the instrument readings recorded. Records of physical inspections shall be noted in the operator's log or equivalent.

K. Alternative monitoring frequency schedules of 30 TAC §§ 115.352 through 115.359 or National Emission Standards for Organic Hazardous Air Pollutants, 40 CFR Part 63, Subpart H, may be used in lieu of Items F through G of this condition.

Compliance with the requirements of this condition does not assure compliance with requirements of 30 TAC Chapter 115, an applicable New Source Performance Standards (NSPS), or an applicable National Emission Standard for Hazardous Air Pollutants (NESHAPS) and does not constitute approval of alternative standards for these regulations.

32. Pump and compressor seals shall be monitored for fugitive leakage monthly rather than quarterly as specified by SC No. 31. The leak definitions, recordkeeping, and corrective actions of those conditions still apply to these components.

33. In addition to the weekly physical inspection required by Item E of SC No. 31, all accessible valve connectors in gas or vapor and light liquid service shall be monitored quarterly with an approved gas analyzer in accordance with Items F through J of SC No. 31.

In lieu of the monitoring frequency specified in the above paragraph, connectors may be monitored on a semiannual basis if the percent of connectors leaking for two consecutive quarterly monitoring periods is less than 0.5 percent.

Connectors may be monitored on an annual basis if the percent of connectors leaking for two consecutive semiannual monitoring periods is less than 0.5 percent.

If the percent of connectors leaking for any semiannual or annual monitoring period is 0.5 percent or greater, the facility shall revert to quarterly monitoring until the facility again qualifies for the alternative monitoring schedules previously outlined in the paragraph.

The percent of connectors leaking used in paragraph B shall be determined using the following formula:

(Cl + Cs) x 100/Ct = Cp

Where:

Cl = the number of connectors found leaking by the end of the monitoring period, either by Method 21 or sight, sound, and smell.

Cs = the number of connectors for which repair has been delayed and are listed on the facility shutdown log.

Ct = the total number of connectors in the facility subject to the monitoring requirements, as of the last day of the monitoring period, not including nonaccessible and unsafe-to-monitor connectors.

Cp = the percentage of leaking connectors for the monitoring period.

Process Piping, Valves, Pumps, and Compressors in H_2S and Hydrogen Fluoride (HF) Service.

34. This condition shall apply to all process streams with greater than 2 weight percent H_2S and all process streams with greater than 0.5 weight percent HF.

    A. Audio, olfactory, and visual checks for H_2S and HF leaks within the operating area shall be made once a shift. **(date – Project No. 326326)**

    B. Immediately, but no later than one hour upon detection of a leak, plant personnel shall take the following actions:

        (1) Isolate the leak.

        (2) Commence repair or replacement of the leaking component.

        (3) If immediate repair is not possible, a leak collection or containment system will be used to prevent or minimize the leak or the facility shall be shutdown in an orderly manner until repair or replacement can be made. Containment can include adjustment of bolts, fittings, packing glands, and pump or compressor seals to contain the leak.

        Records shall be maintained of all inspections, leaks noted, repairs, and replacements made. These records shall be maintained at the plant site for a period of five years and shall be made immediately available at the request of TCEQ personnel.

Wastewater Collection and Treatment

35. The wastewater collection and treatment system shall comply with the requirements of this permit and with the requirements for wastewater systems in 40 CFR Part 60, Subparts A and QQQ,

except as described in the following sentence. Components for which construction, modification, or reconstruction has not commenced after May 4, 1987, in the process units that follow, shall comply with the requirements of this permit and with the requirements of applicable State regulations, but are exempt from 40 CFR Part 60, Subparts A and QQQ.

Process Unit	
Heavy Oil Cracker	Vacuum Unit
HDS Unit	HF Alky Unit
SMR Unit	Boilerhouse
Crude Unit	SWS/Amine
SRU/Sulften	Tank Farm

36. The wastewater collection systems which are routed to a control device shall comply with the following requirements: **(TBD)**

A. Process wastewater drains shall be equipped with water seals or equivalent. Lift stations (with the exception of the HOC Gas Plant lift station), manholes, junction boxes, any other wastewater collection system components, conveyance, storage, and treatment system to the biological treatment unit shall be equipped with a closed vent system that routes all organic vapors to an API Separator Combustor or a back-up CAS. The HOC Gas Plant lift station shall be routed to the CAS (EPN CAS-HOCPP).

B. Water seals shall be checked by visual or physical inspection quarterly for indications of low water levels or other conditions that would reduce the effectiveness of water seal controls. Water seals shall be restored as necessary within 24 hours. Records shall be maintained of these inspections and of corrective actions taken.

C. The HOC Gas Plant lift station shall vent through a CAS (EPN CAS-HOCPP) consisting of at least two activated carbon canisters that are connected in series.

(1) The CAS shall be sampled every two weeks or at 30 percent of the minimum potential saturation time, whichever is soonest, to determine breakthrough of volatile organic compounds (VOC). The sampling point shall be at the outlet of the initial canister but before the inlet to the second or final polishing canister. Sampling shall be done during routine operation of the lift station when wastewater is being generated by process units.

(2) The VOC sampling and analysis shall be performed using an instrument with a flame ionization detector (FID), or a TCEQ-approved alternative detector. The instrument/FID must meet all requirements specified in Section 8.1 of EPA Method 21 (40 CFR 60, Appendix A). Sampling and analysis for VOC breakthrough shall be performed as follows:

(a) Immediately prior to performing sampling, the instrument/FID shall be calibrated with zero and span calibration gas mixtures. Zero gas shall be certified to contain less than 0.1 ppmv total hydrocarbons. Span calibration gas shall be methane at a concentration within ± 10 percent of 5 ppmv, and certified by the manufacturer to be ± 2 percent accurate. Calibration error for the zero and span calibration gas checks must be less than ± 5 percent of the span calibration gas value before sampling may be conducted.

(b) The sampling point shall be at the outlet of the initial canister but before the inlet to the second or final polishing canister. Sample ports or connections must be designed such that air leakage into the sample port does not occur during sampling.

(c) During sampling, data recording shall not begin until after two times the instrument response time. The VOC concentration shall be monitored for at least 5 minutes, recording 1-minute averages, during the maximum flow rate from the lift station.

(3) Breakthrough shall be defined as the highest 1 minute average measured VOC concentration at or exceeding 100 ppmv or benzene concentration at or exceeding 5 ppmv. When the condition of breakthrough of VOC from the initial saturation canister occurs, the waste gas flow shall be switched to the second canister and a fresh canister shall be placed as the new final polishing canister within 24 hours. Sufficient new activated carbon canisters shall be maintained at the site to replace spent carbon canisters such that replacements can be done in the above specified time frame.

(4) Records of the CAS monitoring maintained at the plant site, shall include (but are not limited to) the following:

(a) Sample time and date.

(b) Monitoring results (ppmv).

(c) Corrective action taken including the time and date of that action.

(d) Process operations occurring at the time of sampling.

(5) Alternate monitoring or sampling requirements that are equivalent or better may be approved by the TCEQ Regional Manager. Alternate requirements must be approved in writing before they can be used for compliance purposes.

37. The daily wastewater flow into the wastewater treatment plant shall be monitored and recorded. The rolling 12-month wastewater flow shall be totaled on a monthly basis.

38. The minimum mixed liquor total suspended solids (MLSS) concentration in the aeration basins on a daily average basis shall not be less than 2000 mg/L. The MLSS concentration is the arithmetic average of all samples collected during the 24-hour period. The MLSS concentrations shall be monitored and recorded daily using Method 160.2 (Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020 or Method 2540D (Standard Methods of the Examination of Water and Wastewater, 18th Edition, American Public Health Association).

Compliance Testing

39. The permit holder shall perform stack sampling and other testing as required to establish the actual pattern and quantities of air contaminants being emitted into the atmosphere from all heaters and boilers with firing rates greater than 40 MMBtu/hr, Scot Tail Gas Incinerator (EPN 121 or 121a), Sulften Tail Gas Incinerator (EPN 121 or 121a), Caustic Scrubber (EPN 121), Marine Loading VRU (EPN VRU), and Vapor Combustors (EPNs TRUCKCOMB and 124), to demonstrate compliance with the maximum allowable emissions rate table (MAERT). Sampling shall be performed

upstream and downstream of the SMR condensate stripper vent condenser to demonstrate compliance with SC No. 46. The permit holder is responsible for providing sampling and testing facilities and conducting the sampling and testing operations at his expense. Sampling shall be conducted in accordance with the appropriate procedures of the TCEQ Sampling Procedures Manual and the U.S. Environmental Protection Agency (EPA) Reference Methods. **(02/18)**

Requests to waive testing for any pollutant specified in this condition shall be submitted to the TCEQ Office of Air, Air Permits Division. Test waivers and alternate/equivalent procedure proposals for40 CFR Part 60 testing which must have EPA approval shall be submitted to the TCEQ Regional Director.

A. The appropriate TCEQ Regional Office shall be notified not less than 30 days prior to sampling.

The notice shall include:

(1) Proposed date for pretest meeting.

(2) Date sampling will occur.

(3) Name of firm conducting sampling.

(4) Type of sampling equipment to be used.

(5) Method or procedure to be used in sampling.

(6) Description of any proposed deviation from the sampling procedures specified in this permit or TCEQ/EPA sampling procedures.

(7) Procedure/parameters to be used to determine worst case emissions, such as production rate, to set operating parameters and limits to be monitored during the sampling period.

The purpose of the pretest meeting is to review the necessary sampling and testing procedures, to provide the proper data forms for recording pertinent data, and to review the format procedures for the test reports.

B. Air contaminants to be tested from sources:

(1) Air contaminants emitted from the heaters and boilers to be tested for include (but are not limited to) NO_x and CO.

(2) Air contaminants emitted from the caustic scrubber to be tested for include (but are not limited to) sulfur dioxide (SO_2), NO_x, PM (both front and back-half of the sampling train), sulfuric acid, and CO. Stack testing of the Belco Scrubber (EPN 121) shall be accomplished by temporarily routing the Sulften and Scot Tail gas to EPN 121a. The sulfuric acid mist stack sample shall be performed using both TCEQ Method 24 and EPA Method 8. The lower of the two sampling results may be used to demonstrate compliance.

(3) Air contaminants emitted from the Sulften and Scot tail gas incinerators to be tested for include (but are not limited to) SO_2, NO_x, CO, PM (both front and back half of the sampling train), and total reduced sulfur.

(4) Air contaminants emitted from the vapor combustors to be tested for include (but are not limited to) VOC, NO_x, and CO.

(5) Air contaminants to be tested for the SMR condensate stripper vent condenser include methanol.

C. Requests for additional time to perform sampling shall be submitted to the TCEQ Corpus Christi Regional Office. Additional time to comply with the applicable requirements of 40 CFR Part 60 and 40 CFR Part 61 requires the EPA approval. Sampling of air contaminants shall occur as follows:

(1) Air contaminants monitored with a CEMS as specified under SC No. 40 shall be sampled to support CEMS operation as required by that condition.

(2) Sampling of air contaminants not monitored by CEMS under SC No. 40 shall occur as follows:

(a) Within 180 days of the issuance of this permit unless the emission point had been sampled within the last 5 years.

(b) Each emission point shall be sampled within 60 days of achieving maximum operation, not to exceed 180 days after initial operation, if new burners have been installed or if an operational change has been made allowing emissions to increase more than 10 percent greater than determined by the last stack sample.

(c) Each emission point shall be sampled as may be required by the Executive Director of the TCEQ.

D. The facility shall operate at maximum production rates during stack emission testing. Primary operating parameters that enable determination of production rates shall be monitored and recorded during the stack test. Any additional parameters shall be determined at the pretest meeting and shall be stated in the sampling report. Permit conditions and parameter limits may be waived during stack testing performed under this condition if the proposed condition/parameter range is identified in the test notice specified in paragraph A and accepted by the TCEQ Regional Office. Permit allowable emissions and emission control requirements are not waived and still apply during stack testing periods.

During subsequent operations, if an operating parameter as determined in the previous paragraph is greater than that recorded during the test period, stack sampling shall be performed at the new operating conditions within 120 days. This sampling may be waived by the TCEQ Air Section Manager for the Region.

E. One copy of the final sampling report shall be forwarded to the TCEQ within 60 days after sampling is completed. Sampling reports shall comply with the attached conditions of Chapter 14 of the TCEQ Sampling Procedures Manual. The reports shall be distributed as follows:

One copy to the TCEQ Corpus Christi Regional Office.

Continuous Determination of Compliance

40. The holder of this permit shall install, calibrate, and maintain a CEMS to measure and record the in-stack concentration of VOC from the marine VRU; CO, NO_x, and O_2 from the heaters and boilers with firing rates greater than 100 MMBtu/hr; SO_2 and O_2 from the SRU/Sulften Tail Gas Incinerator (exhausts to EPN 121 or 121a); SO_2 and O_2 from the SRU/Scot Tail Gas Incinerator (exhausts to EPN 121 or 121a), and NO_x, CO, O_2, and SO_2 from the Caustic Scrubber (exhausts to EPN 121). The monitoring system shall meet the following section of Requirements for CEMS. **(02/18)**

Requirements for CEMS

A. The CEMS shall meet the design and performance specifications, pass the field tests, and meet the installation requirements and the data analysis and reporting requirements specified in the applicable Performance Specification Nos. 1 through 7, 40 CFR Part 60, Appendix B. If there are no applicable performance specifications in 40 CFR Part 60, Appendix B, contact the TCEQ Office of Air, Air Permits Division for requirements to be met.

B. Section 1 below applies to sources subject to the quality-assurance requirements of 40 CFR Part 60, Appendix F; section 2 applies to all other sources:

(1) The permit holder shall assure that the CEMS meets the applicable quality-assurance requirements specified in 40 CFR Part 60, Appendix F, Procedure 1. Relative accuracy exceedances, as specified in 40 CFR Part 60, Appendix F, § 5.2.3 and any CEMS downtime shall be reported to the appropriate TCEQ Regional Manager, and necessary corrective action shall be taken. Supplemental stack concentration measurements may be required at the discretion of the appropriate TCEQ Regional Manager.

(2) The system shall be zeroed and spanned daily, and corrective action taken when the 24-hour span drift exceeds two times the amounts specified in the applicable Performance Specification Nos. 1 through 9, 40 CFR Part 60, Appendix B, or as specified by the TCEQ if not specified in Appendix B. Zero and span is not required on weekends and plant holidays if instrument technicians are not normally scheduled on those days, unless the monitor is required by a subpart of NSPS or NESHAPS, in which case zero and span shall be done daily without exception.

Each monitor shall be quality-assured at least quarterly using Cylinder Gas Audits (CGA) in accordance with 40 CFR Part 60, Appendix F, Procedure 1, Section 5.1.2, with the following exception: a relative accuracy test audit (RATA) is not required once every four quarters (i.e., four successive quarterly CGA may be conducted). An equivalent quality-assurance method approved by the TCEQ may also be used. Successive quarterly audits shall occur no closer than two months.

All CGA exceedances of +15 percent accuracy indicate that the CEMS is out of control.

C. The monitoring data shall be reduced to hourly average concentrations at least once weekly, using a minimum of four equally-spaced data points from each one-hour period. The individual average concentrations shall be reduced to units of the permit allowable emission rate in pounds/hr at least once every week and cumulative tons per year (TPY) on a 12-month rolling average at least once every month.

D. All monitoring data and quality-assurance data shall be maintained by the source for a period of five years and shall be made available to the TCEQ Executive Director or his designated representative upon request. The data from the CEMS may, at the discretion of the TCEQ, be used to determine compliance with the conditions of this permit.

E. All cylinder gas audit exceedances of ±15 percent accuracy and any CEMS downtime associated with emissions from EPNs 121 and 121a shall be reported to the appropriate TCEQ Regional Director within three days of any downtime, and necessary corrective action shall be taken. If the CEMS downtime for a specific emission point occurs when emissions are not being routed to that stack, that time period shall not be considered reportable CEMS downtime for the purposes of this special condition. Exceedances at other emission points shall be reported in Semiannual Excess Emission Reports. Supplemental stack concentration measurements may be required at the discretion of the appropriate TCEQ Regional Director.

F. The appropriate TCEQ Regional Office shall be notified at least 30 days prior to any required RATA in order to provide them the opportunity to observe the testing.

G. Quality-assured (or valid) data must be generated when each emitting facility is operating, except during the performance of a daily zero and span check. Loss of valid data due to periods of monitor break down, out-of-control operation (producing inaccurate data), repair, maintenance, or calibration may be exempted, provided that it does not exceed 5 percent of the time (in minutes) that the facility operated over the previous rolling 12-month period. The measurements missed shall be estimated using engineering judgment and the methods used recorded. Options to increase system reliability to an acceptable value, including a redundant CEMS, may be required by the TCEQ Regional Manager.

H. This paragraph applies to the NO_x, SO_2, and O_2 CEMS on the Caustic Scrubber (exhausts to EPN 121) and to the heaters and boilers in listed in SC No. 16 with NO_x CEMS. In addition to the requirements of SC No. 40.A-G., the CEMS shall be installed, certified, calibrated, maintained and operated in accordance with the provisions of 40 CFR §60.13 which are applicable only to CEMs (excluding those provisions applicable only to continuous opacity monitoring systems) and Part 60, Appendices A and F, and the applicable performance specification test of 40 CFR Part 60, Appendix B. With respect to 40 CFR Part 60 Appendix F, in lieu of the requirements of 40 CFR Part 60, Appendix F §§5.1.1, 5.1.3 and 5.1.4, the source must conduct either a RAA or a RATA on each CEMS at least once every three (3) years. The source must also conduct CGA each calendar quarter during which a RAA or a RATA is not performed. **(02/18)**

41. Pollutant concentrations at the outlet from the Caustic Scrubber (exhausts to EPN 121) shall not exceed the following values at dry conditions, zero percent O_2:

Pollutant	Maximum Allowable	Averaging Period
SO_2	50 ppm	1.0 hour
SO_2	50 ppm	7-day rolling average **(04/16)**
SO_2	25 ppm	365-day rolling average **(04/16)**
CO	500 ppm	1.0 hour
NO_x	150 ppm	1.0 hour

Pollutant concentrations at the outlet from the SCOT Stack (EPN 121a) shall not exceed the following values at dry conditions, zero percent O_2:

Pollutant	Maximum Allowable	Averaging Period
SO_2	250 ppm	1.0 hour
CO	332 ppm	1.0 hour
NO_x	50 ppm	1.0 hour

42. The continuous monitoring data will be used to determine violations of the limitations in this permit. For purposes of enforcement, the following averaging periods shall be utilized unless otherwise specified in this permit with respect to a specific emission point and pollutant:

Pollutant	Averaging Period
SO_2	1.0 hour
CO	1.0 hour
H_2S	1.0 hour
Opacity	6.0 minutes
NO_x	1.0 hour

HF Control Measures

43. The HF detection paint shall be used on all potential fugitive sources and possible leak sites. Locations with HF detection paint shall be inspected every shift during the audio, visual, and olfactory checks required by SC No. 34. If leaks are detected, corrective action shall be taken immediately as described in SC No. 34. If there is a problem with HF sensitive paint availability, the holder of this permit shall notify the TCEQ Corpus Christi Regional Office and request additional time for painting or request alternate leak detection methods pending availability of the HF sensitive paint.

44. In the event of an HF release which may have the potential for off-site impacts, the holder of this permit shall implement the procedures outlined in the emergency response plans.

45. There shall be no overhead work in the HF process unit where equipment is being lifted over unprotected vessels or lines without first completing a safe work checklist in accordance with Occupational Safety and Health Administration Process Safety Management rules. The safe work checklist shall be used to ensure that every effort is made to minimize the potential for an accident that would result in loss of integrity of HF-containing equipment.

    The holder of this permit is required to notify the TCEQ Corpus Christi Regional Office no less than eight hours prior to conducting work over unprotected vessels or lines containing more than 5 percent by weight HF.

Miscellaneous

46. The SMR stripper vent condenser shall collect 98 percent of the methanol in the stripper vent on an hourly averaging period. The stripper exhaust gas temperature shall be maintained below that maintained during the most recent stack sample following the initial stack test.

    The condenser exhaust gas temperature shall be continuously monitored and recorded when the stripper is operating. The temperature measurement device shall reduce the temperature readings to an averaging period of six minutes or less and record it at that frequency. The temperature measurement device shall be installed, calibrated, and maintained according to accepted practice and the manufacturer's specifications. The device shall have an accuracy of the greater of ±0.75 percent of the temperature being measured expressed in degrees Celsius or ±2.5˚C.

47. Flares: BUP Flare, Main Flare and Ground Flare shall be operated in accordance with the New Source Performance Standards for Petroleum Refineries, 40 CFR Part 60 Subpart Ja. **(04/16)**

48. After December 31, 2008 the maximum allowable emission limit of NO_x from the West Plant Heavy Oil Cracker (HOC) (EPN 121) shall not exceed 37 ppmv (dry, zero percent O_2 basis) on a 365-day rolling average and shall not exceed 74 ppmv (dry, zero percent O_2 basis) on a 7-day rolling average. **(04/16)**

Maintenance, Startup, and Shutdown

49. Planned startup and shutdown emissions due to the activities identified in SC No. 50 are authorized from facilities and emission points identified in Attachment 1, Boiler 30-B-03 (EPN: 163) in Permit 20740, the Xylene Splitter Reboiler Heater 49-H-91 (EPN: 49-H-91) in Permit 20992, emission points identified in SC No. 16 in Permit 106965, and emission points identified in SC No. 25 in Permit 109543, provided the facility and emissions are compliant with the routine emission caps and SC No. 60 of this permit. **(02/14)**

50. This permit authorizes the emissions for the planned MSS activities summarized in the MSS Activity Summary (Attachment 4) attached to this permit. This permit also authorizes emissions from the following temporary facilities used to support planned MSS activities at permanent site facilities: frac tanks, containers, vacuum trucks, facilities used for painting or abrasive blasting, portable control devices identified in SC No. 61, and controlled recovery systems. Emissions from temporary facilities are authorized provided the temporary facility (a) does not remain on the plant site for more than 12 consecutive months, (b) is used solely to support planned MSS activities at the permanent site facilities listed in Attachment 1, and (c) does not operate as a replacement for an existing authorized facility.

    Attachment 2 identifies the inherently low emitting MSS activities that may be performed at the refinery. Emissions from activities identified in Attachment 2 shall be considered to be equal to the potential to emit represented in the permit application. The estimated emissions from the activities listed in Attachment 2 must be revalidated annually. This revalidation shall consist of the estimated emissions for each type of activity and the basis for that emission estimate.

    Routine maintenance activities, as identified in Attachment 3 may be tracked through the work orders or equivalent. Emissions from activities identified in Attachment 3 shall be calculated using the number of work orders or equivalent that month and the emissions associated with that activity identified in the permit application.

    The performance of each planned MSS activity not identified in Attachments 2 or 3 and the emissions associated with it shall be recorded and include at least the following information: **(date – Project No. 326326)**

    A. the process unit at which emissions from the MSS activity occurred, including the emission point number and common name of the process unit;

    B. the type of planned MSS activity and the reason for the planned activity;

    C. the common name or the facility identification number, if applicable, of the facilities at which the MSS activity and emissions occurred;

    D. the date and time on which the MSS activity occurred;

E. the estimated quantity of each air contaminant, or mixture of air contaminants, emitted with the data and methods used to determine it. The emissions shall be estimated using the methods identified in the permit application, consistent with good engineering practice.

All MSS emissions shall be summed monthly and the rolling 12-month emissions shall be updated on a monthly basis. A sum of all hourly MSS emissions shall be kept during all times when MSS activities are occurring to demonstrate that the MAERT hourly MSS Cap is not exceeded.

51. Process units and facilities, with the exception of those identified in SC Nos. 54 (related to Floating Roof Tanks), 55 (related to Fixed Roof Tanks), 57 (related to frac or temporary tanks), and activities listed in Attachment 2, shall operate in accordance with the following requirements during MSS.

A. The process equipment shall be depressurized to a control device or a controlled recovery system prior to venting to atmosphere, degassing, or draining liquid. Equipment that only contains material that is liquid with VOC true vapor pressure (TVP) less than 0.50 psi at the normal process temperature and 95°F may be opened to atmosphere and drained in accordance with paragraph C of this special condition without depressuring or degassing to a control device. The vapor pressure at 95°F may be used if the actual temperature of the liquid is verified to be less than 95°F and the temperature is recorded.

B. If mixed phase materials must be removed from process equipment, the cleared material shall be routed to a knockout drum or equivalent to allow for managed initial phase separation. If the VOC TVP is greater than 0.50 psi at either the normal process temperature or 95°F, any vents in the system must be routed to a control device or a controlled recovery system. The vapor pressure at 95°F may be used if the actual temperature of the liquid is verified to be less than 95°F and the temperature is recorded. Control must remain in place until degassing has been completed or the system is no longer vented to atmosphere.

C. All liquids from process equipment shall be removed to the maximum extent practical prior to opening equipment to commence degassing and/or maintenance. Liquids with a VOC partial pressure greater than or equal to 0.044 psia at 68°F shall be drained into a closed vessel or to a controlled oily water system, unless prevented by the physical configuration of the equipment. If it is necessary to drain liquid into an open pan or sump, the liquid shall be covered or transferred to a covered vessel within one hour of being drained. After draining is complete, empty open pans may remain in use for housekeeping reasons to collect incidental drips.

D. If the VOC TVP is greater than 0.50 psi at the normal process temperature or 95°F, facilities shall be degassed using good engineering practice to ensure air contaminants are removed from the system through the control device or controlled recovery system to the extent allowed by process equipment or storage vessel design. The vapor pressure at 95°F may be used if the actual temperature of the liquid is verified to be less than 95°F and the temperature is recorded.

The following requirements do not apply to fugitive components, pumps, compressors.

(1) For MSS activities identified in Attachment 3, the following option may be used in lieu of (2) below. The facilities being prepared for maintenance shall not be vented directly to atmosphere, except as necessary to verify an acceptable VOC concentration and establish isolation of the work area, until the VOC concentration has been verified to be less than 10 percent of the lower explosive limit (LEL) per the site safety procedures.

(2) The locations and/or identifiers where the purge gas or steam enters the process equipment or storage vessel and the exit points for the exhaust gases shall be recorded (PFD's, P&ID's, or Turnaround and Inspection [T&I] plans may be used to demonstrate compliance with the requirement). Documented refinery procedures used to deinventory equipment to a control device for safety purposes (i.e., hot work or vessel entry procedures) that achieve at least the same level of purging may be used in lieu of the above. If the process equipment is purged with a gas, purge gas must have passed through the control device or controlled recovery system for a sufficient period of time in accordance with the applicable site operating procedures before the vent stream may be sampled to verify acceptable VOC concentration prior to uncontrolled venting. The VOC sampling and analysis shall be performed using an instrument meeting the requirements of SC No. 52. The sampling point shall be upstream of the inlet to the control device or controlled recovery system. The sample ports and the collection system must be designed and operated such that there is no air leakage into the sample probe or the collection system downstream of the process equipment or vessel being purged. The facilities shall be degassed to a control device or controlled recovery system until the VOC concentration is less than or equal to 10,000 ppmv or 10 percent of the LEL.

(3) Alternatively, the process equipment may filled with a liquid with a VOC vapor pressure less than 0.147 psi while venting to control. If it can be verified that the liquid filled the entire process equipment or vessel, no sampling is necessary. If not, the VOC concentration shall be verified to be less than 10,000 ppmv or 10 percent of the LEL using an instrument meeting the requirements of SC No. 52 while purging to control immediately after draining the liquid from the system. The locations and/or identifiers where the liquid enters the process equipment or storage vessel and the exit points for the exhaust gases shall be recorded (PFDs, P&IDs, or T&I plans may be used to demonstrate compliance with the requirement).

E. Equipment containing materials with VOC TVP greater than 0.50 psi may be vented directly to atmosphere if all the following criteria are met:

(1) It is not technically practicable to depressurize or degas, as applicable, into the process.

(2) There is not an available connection to a plant control system (flare).

(3) There is no more than 50 lb of air contaminants to be vented to atmosphere during each shutdown or startup of a piece of equipment, as applicable.

All instances of venting directly to atmosphere per SC No. 51.D must be documented when occurring as part of any MSS activity. The emissions associated with venting without control must be included in the work order, shift logs, or equivalent for those planned MSS activities identified in Attachment 3. **(02/18)**

52. Air contaminant concentration shall be measured using an instrument/detector meeting one set of requirements specified below.

A. The VOC concentration shall be measured using an instrument meeting all the requirements specified in EPA Method 21 (40 CFR Part 60, Appendix A) with the following exceptions:

(1) The instrument shall be calibrated within 24 hours of use with a calibration gas. The calibration gas used and its concentration, and the vapor to be sampled and its approximate response factor (RF), shall be recorded. If the RF of the VOC (or mixture

of VOCs) to be monitored is greater than 2.0, the VOC concentration shall be determined as follows:

VOC Concentration = Concentration as read from the instrument*RF

(2) Sampling shall be performed as directed by this permit in lieu of section 8.3 of Method 21. During sampling, data recording shall not begin until after two times the instrument response time. The date and time shall be recorded, and VOC concentration shall be monitored for at least 5 minutes and the greatest VOC concentration recorded. This VOC concentration shall not exceed the specified VOC concentration limit prior to uncontrolled venting.

(3) If a TVA-1000 series FID analyzer calibrated with methane is used to determine the VOC concentration, a measured concentration of 34,000 ppmv may be considered equivalent to 10,000 ppmv as VOC.

B. Colorimetric gas detector tubes may be used to determine air contaminant concentrations if they are used in accordance with the following requirements.

(1) The air contaminant concentration measured is less than 80 percent of the range of the tube. If the maximum range of the tube is greater than the release concentration defined in (3), the concentration measured is at least 20 percent of the maximum range of the tube.

(2) The tube is used in accordance with the manufacturer's guidelines.

(3) At least 2 samples taken at least 5 minutes apart must satisfy the following prior to uncontrolled venting:

measured contaminant concentration (ppmv) < release concentration.

Where the release concentration is:

10,000*mole fraction of the total air contaminants present that can be detected by the tube.

The mole fraction may be estimated based on process knowledge. The release concentration and basis for its determination shall be recorded.

Records shall be maintained of the tube type, range, measured concentrations, and time the samples were taken.

C. Lower explosive limit measured with a lower explosive limit detector.

(1) The detector shall be calibrated monthly with a certified pentane gas standard at 25 percent of the lower explosive limit (LEL) for pentane. Records of the calibration date/time and calibration result (pass/fail) shall be maintained.

(2) A daily functionality test shall be performed on each detector using the same certified gas standard used for calibration. The LEL monitor shall read no lower than 90 percent of the calibration gas certified value. Records, including the date/time and test results, shall be maintained.

(3) A certified methane gas standard equivalent to 25 percent of the LEL for pentane may be used for calibration and functionality tests provided that the LEL response is within 95 percent of that for pentane.

D. For measuring benzene breakthrough on Carbon Adsorption Systems in SC No. 61.A.(4), a portable gas chromatograph using a flame ionization detector or photo ionization detector may be used. Alternatively a photo-ionization detector equipped with a benzene separation tube consistent with manufacturer requirements may be used. The monitor shall have the sensitivity and specificity to quantify low level benzene concentrations. The monitor device shall be calibrated within 24 hours of use with a certified calibration gas containing ~5 ppm benzene. Records of the calibration date/time and calibration result shall be maintained.

53. If the removal of a component for repair or replacement results in an open ended line or valve, the open ended line is exempt from any New Source Review (NSR) permit condition requirement to install a cap, blind flange, plug, or second valve for 72 hours. If the repair or replacement is not completed within 72 hours, the permit holder must complete either of the following actions within that time period;

A. a cap, blind flange, plug, or second valve must be installed on the line or valve, or demonstrate that the line, valve, component, etc, has been double blocked from the process; or

B. the permit holder shall verify that there is no leakage from the open-ended line or valve. The open-ended line or valve shall be monitored on a weekly basis in accordance with the applicable NSR permit condition for fugitive emission monitoring except that a leak is defined as any VOC reading greater than background. Leaks must be repaired within 24 hours or a cap, blind flange, plug, or second valve must be installed on the line or valve. The results of this weekly check and any corrective actions taken shall be recorded.

54. This permit authorizes emissions from the storage tanks identified in Attachment 1 during planned floating roof landings. Tank floating roofs may only be landed for changes of tank service or tank inspection/maintenance as identified in the permit application, except when the VOC vapors below the floating roof are routed to a control device or a controlled recovery system while the roof is landed. Tank change of service includes landings to accommodate seasonal RVP spec changes and landings to correct off-spec material that cannot be blended into finished product tanks. Tank roof landings include all operations when the tank floating roof is on its supporting legs. These emissions are subject to the maximum allowable emission rates indicated on the MAERT. The following requirements apply to tank roof landings.

A. The tank liquid level shall be continuously lowered after the tank floating roof initially lands on its supporting legs until the tank has been drained to the maximum extent practicable without entering the tank. Liquid level may be maintained steady for a period of up to two hours if necessary to allow for valve lineups and pump changes necessary to drain the tank. This requirement does not apply where the vapor under a floating roof is routed to control during this process.

B. If the VOC TVP of the liquid previously stored in the tank is greater than 0.50 psi at 95°F tank refilling or degassing of the vapor space under the landed floating roof must begin within 24 hours after the tank has been drained. Floating roof tanks with liquid capacities less than 100,000 gallons may be degassed without control if the VOC TVP of the standing liquid in the tank has been reduced to less than 0.02 psia prior to ventilating the tank. Controlled degassing of the vapor space under landed roofs shall be completed as follows:

(1) Any gas or vapor removed from the vapor space under the floating roof must be routed to a control device or a controlled recovery system and controlled degassing must be maintained until the VOC concentration is less than 10,000 ppmv or 10 percent of the LEL. The locations and identifiers of vents other than permanent roof fittings and seals, control device or controlled recovery system, and controlled exhaust stream

shall be recorded. There shall be no other gas/vapor flow out of the vapor space under the floating roof when degassing to the control device or controlled recovery system.

(2) The vapor space under the floating roof shall be vented using good engineering practice to ensure air contaminants are flushed out of the tank through the control device or controlled recovery system to the extent allowed by the storage tank design.

(3) A volume equivalent to twice the volume of the vapor space under the floating roof must have passed through the control device or into a controlled recovery system, before the vent stream may be sampled to verify acceptable VOC concentration. The volume measurement shall not include any make-up air introduced into the control device or recovery system. The VOC sampling and analysis shall be performed as specified in SC No. 52.

(4) The sampling point shall be upstream of the inlet to the control device or controlled recovery system. The sample ports and the collection system must be designed and operated such that there is no air leakage into the sample probe or the collection system downstream of the process equipment or vessel being purged.

(5) If ventilation is to be maintained with emission control, the VOC concentration shall be recorded once an hour.

(6) Degassing must be performed every 24 hours unless there is no standing liquid in the tank or the VOC TVP of the remaining liquid in the tank is less than 0.15 psia.

C. The tank shall not be opened except as necessary to set up for degassing and cleaning, or ventilated without control, until either all standing liquid has been removed from the tank or the liquid in the tank has a VOC TVP less than 0.02 psia. These criteria may be demonstrated in any one of the following ways.

(1) Low VOC TVP liquid that is soluble with the liquid previously stored may be added to the tank to lower the VOC TVP of the liquid mixture remaining in the tank to less than 0.02 psia. This liquid shall be added during tank degassing if practicable. The estimated volume of liquid remaining in the drained tank and the volume and type of liquid added shall be recorded. The liquid VOC TVP may be estimated based on this information and engineering calculations.

(2) If water is added or sprayed into the tank to remove standing VOC, one of the following must be demonstrated:

(a) Take a representative sample of the liquid remaining in the tank and verify no visible sheen using the static sheen test from 40 CFR Part 435 Subpart A Appendix 1.

(b) Take a representative sample of the liquid remaining in the tank and verify hexane soluble VOC concentration is less than 1000 ppmw using EPA method 1664 (may also use 8260B or 5030 with 8015 from SW-846).

(c) Stop ventilation and close the tank for at least 24 hours. When the tank manway is opened after this period, verify VOC concentration is less than 1000 ppmv through the procedure in MSS SC No. 52.

(3) No standing liquid verified through visual inspection.

The permit holder shall maintain records to document the method used to release the tank.

D. Tanks shall be refilled as rapidly as practicable until the roof is off its legs unless the vapor space is routed to control during refilling except as required by SC No. 69.

E. The occurrence of each roof landing and the associated emissions shall be recorded and the rolling 12-month tank roof landing emissions shall be updated on a monthly basis. These records shall include at least the following information:

(1) the identification of the tank and emission point number, and any control devices or recovery systems used to reduce emissions;

(2) the reason for the tank roof landing;

(3) for the purpose of estimating emissions, the date and time of each of the following events:

(a) the roof was initially landed,

(b) all liquid was pumped from the tank to the extent practical,

(c) start and completion of controlled degassing, and total volumetric flow,

(d) all standing liquid was removed from the tank or any transfers of low VOC TVP liquid to or from the tank including volumes and vapor pressures to reduce tank liquid VOC TVP to <0.02 psi,

(e) if there is liquid in the tank, VOC TVP of liquid, start and completion of uncontrolled degassing, and total volumetric flow,

(f) refilling commenced, liquid filling the tank, and the volume necessary to float the roof; and

(g) tank roof off supporting legs, floating on liquid;

(4) the estimated quantity of each air contaminant, or mixture of air contaminants, emitted between events (c) and (g) with the data and methods used to determine it. The emissions associated with roof landing activities shall be calculated using the methods described in Section 7.1.3.2 of AP-42 "Compilation of Air Pollution Emission Factors, Chapter 7 - Storage of Organic Liquids" dated November 2006 and the permit application.

55. Fixed-roof storage tanks shall not be ventilated without control, until either all standing liquid has been removed from the tank or the liquid in the tank has a VOC TVP less than 0.02 psia. This shall be verified and documented through one of the criteria identified in MSS SC No. 52.C. Storage tanks manways may be opened without emission controls when there is standing liquid with a VOC TVP greater than 0.02 psia as necessary to set up for degassing and cleaning. One manway may be opened to provide access to the tank when necessary to allow access to remove or de-volatilize the remaining liquid. The emission control system shall meet the requirements of SC Nos. 54.B.(1) through 54.B.(5) and records maintained per SC No. 54.E.(3)c through 54.E.(3)e, and 54.E.(4). Low vapor pressure liquid may be added to and removed from the tank as necessary to lower the vapor pressure of the liquid mixture remaining in the tank to less than 0.02 psia.

56. The following requirements apply to vacuum and air mover truck operations at this site:

A. Vacuum pumps and blowers shall not be operated on trucks containing or vacuuming liquids with VOC TVP greater than 0.50 psi at 95F unless the vacuum/blower exhaust is routed to a control device or a controlled recovery system.

B. Equip fill line intake with a "duckbill" or equivalent attachment if the hose end cannot be submerged in the liquid being collected.

C. A daily record containing the information identified below is required for each vacuum truck in operation at the site each day.

(1) Prior to initial use, identify any liquid in the truck. Record the liquid level and document that the VOC TVP is less than 0.50 psi if the vacuum exhaust is not routed to a control device or a controlled recovery system. After each liquid transfer, identify the liquid transferred and document that the VOC TVP is less than 0.50 psi if the vacuum exhaust is not routed to a control device or a controlled recovery system.

(2) For each liquid transfer made with the vacuum operating, record the duration of any periods when air may have been entrained with the liquid transfer. The reason for operating in this manner and whether a "duckbill" or equivalent was used shall be recorded. Short, incidental periods, such as those necessary to walk from the truck to the fill line intake, do not need to be documented.

(3) If the vacuum truck exhaust is controlled with a control device other than an engine or oxidizer, VOC exhaust concentration upon commencing each transfer, at the end of each transfer, and as required by SC No. 61, measured using an instrument meeting the requirements of MSS SC No. 52.

(4) The volume in the vacuum truck at the end of the day, or the volume unloaded, as applicable.

D. The permit holder shall determine the vacuum truck emissions each month using the daily vacuum truck records and the calculation methods utilized in the permit application. If records of the volume of liquid transferred for each pick-up are not maintained, the emissions shall be determined using the physical properties of the liquid vacuumed with the greatest potential emissions. Rolling 12 month vacuum truck emissions shall also be determined on a monthly basis.

E. If the VOC TVP of all the liquids vacuumed into the truck is less than 0.10 psi, this shall be recorded when the truck is unloaded or leaves the plant site and the emissions may be estimated as the maximum potential to emit for a truck in that service as documented in the permit application. The recordkeeping requirements in SC Nos. 56.A through 56.D do not apply.

57. The following requirements apply to frac, or temporary, tanks and vessels used in support of MSS activities.

A. Except for labels, logos, etc. not to exceed 15 percent of the tank/vessel total surface area, the exterior surfaces of these tanks/vessels that are exposed to the sun shall be white or aluminum. This requirement does not apply to tanks/vessels that only vent to atmosphere when being filled. This requirement also does not apply to frac tanks which are heated for the purpose of mixing liquids with VOC TVP less than 0.10 psi at 95°F. **(03/16)**

B. These tanks/vessels must be covered and equipped with fill pipes that discharge within 6 inches of the tank/vessel bottom.

C. These requirements do not apply to vessels storing less than 25 barrels of liquid that are closed such that the vessel does not vent to atmosphere.

D. The permit holder shall maintain an emissions record which includes calculated emissions of VOC from all frac tanks during the previous calendar month and the past consecutive 12 month period. The record shall include tank identification number, dates put into and removed from service, control method used, tank capacity and volume of liquid stored in gallons, name of the material stored, VOC molecular weight, and VOC TVP at the estimated monthly average material temperature in psia. Filling emissions for tanks shall be calculated using the TCEQ publication titled “Technical Guidance Package for Chemical Sources - Loading Operations” and standing emissions determined using: the TCEQ publication titled “Technical Guidance Package for Chemical Sources Storage Tanks.”

E. If the tank/vessel is used to store liquid with VOC TVP less than 0.10 psi at 95F, records may be limited to the days the tank is in service and the liquid stored. Emissions may be estimated based upon the potential to emit as identified in the permit application.

58. The term “true vapor pressure (TVP)” is used in lieu of the term “partial pressure” in this permit.

59. The MSS activities represented in the permit application may be authorized under permit by rule only if the procedures, emission controls, monitoring, and recordkeeping are the same as those required by this permit.

60. All permanent facilities must comply with all operating requirements, limits, and representations in the permits identified in Attachment 1 during planned startup and shutdown unless alternate requirements and limits are identified in this permit. Alternate requirements for emissions from routine emission points are identified below:

A. Heaters, boilers, and furnaces are exempt from NO_x and CO operating requirements identified in other special conditions this permit during planned startup and shutdown if the following criteria are satisfied. This exemption does not include NO_x 365-day rolling average limits. **(08/16)**

(1) The routine maximum allowable emission caps are not exceeded.

(2) Except as noted in SC 60 A(4) below the startup period does not exceed 8 hours in duration and the firing rate does not exceed 75 percent of the design firing rate. The time it takes to complete the shutdown does not exceed 4 hours.

(3) Control devices are started and operating properly when venting a waste gas stream.

(4) Startup times exceeding 8 hours for specific facilities are allowed as identified below: **(date – Project No. 326326)**

Heater, Boiler, or Furnace FIN	EPN	Maximum Hours Allowed for Startup of each FIN
12-H01A and 12-H01B	115A and 115B	48
13-H-01A, 13-H-01B, and 13-H-01C	118	28
31-H-01	117	12
38-H-01, 38-H-02,38-H-03	162	45
47-H-03 and 47-H-04	150	10
48-H-01	151	12
49-H-01, 49-H-02, 49-H-03, 49-H-04	152	16

Heater, Boiler, or Furnace FIN	EPN	Maximum Hours Allowed for Startup of each FIN
52-H-01	195	24

B. The limits identified below apply to the operations of the specified facilities during startup and shutdown. All other routine operating limitations apply during planned startup and shutdown.

(1) The HOC startup period shall not exceed 86 hours and the hourly average CO concentration during this period shall not exceed 1200 ppmvd corrected to zero percent O_2. All HOC emissions during startup are in the MSS emission caps.

(2) The sulfur recovery requirements and SRU tail gas incinerator sulfur dioxide concentration limits in SC Nos. 22 and 41 do not apply during SRU startup. Operation in the hot standby mode shall be minimized. The SRU tailgas incinerator shall be operated in accordance with SC No. 24 during this period. A SRU incinerator shall not operate in this mode for more than 72 hours in any rolling 12 month period.

(3) Paragraph (2) of this condition does not apply when SRU vent gasses from a TGI are routed through the HOC caustic scrubber prior to being discharged to the atmosphere. This paragraph applies instead. The HOC caustic scrubber shall be monitored with a SO_2 CEMS.

C. A record shall be maintained indicating that the start and end times for each of the activities identified above occur and documentation that the requirements for each have been satisfied.

61. Control devices required by this permit for emissions from planned MSS activities are limited to those types identified in this condition. Control devices shall be operated with no visible emissions except periods not to exceed a total of five minutes during any two consecutive hours. Each device used must meet all the requirements identified for that type of control device.

Controlled recovery systems identified in this permit shall be directed to an operating refinery process or to a collection system that is vented through a control device meeting the requirements of this permit condition.

A. Carbon Adsorption System (CAS).

(1) The CAS shall consist of 2 carbon canisters in series with adequate carbon supply for the emission control operation.

(2) The CAS shall be sampled downstream on the first can and the concentration recorded at least once every hour of CAS run time to determine breakthrough of the VOC. The sampling frequency may be extended using either of the following methods:

(a) The CAS systems equipped with an upstream liquid scrubber may be sampled once every 12 hours of CAS run time to determine breakthrough.

(b) Sampling frequency may be extended to up to 30 percent of the minimum potential saturation time for a new can of carbon. The permit holder shall maintain records including the calculations performed to determine the minimum saturation time.

(c) The carbon sampling frequency may be extended to longer periods based on previous experience with carbon control of a MSS waste gas stream. The past experience must be with the same VOC, type of facility, and MSS activity. The basis for the sampling frequency shall be recorded. If breakthrough is monitored on the initial sample of the upstream can when the polishing can is put in place, a permit deviation shall be recorded.

(3) The method of VOC sampling and analysis shall be by detector meeting the requirements of SC No. 52.

(4) Breakthrough is defined as the highest measured VOC or benzene concentration at or exceeding 100 ppmv or 5 ppmv, respectively, above background. When the condition of breakthrough of VOC from the initial saturation canister occurs, the waste gas flow shall be switched to the second canister and a fresh canister shall be placed as the new final polishing canister within twenty-four hours. In lieu of replacing canisters, the flow of waste gas may be discontinued until the canisters are switched. Sufficient new activated carbon canisters shall be available to replace spent carbon canisters such that replacements can be done in the above specified time frame.

(5) Records of CAS monitoring shall include the following:

(a) Sample time and date.

(b) Monitoring results (ppmv).

(c) Canister replacement log.

(6) Single canister systems are allowed if the time the carbon canister is in service is limited to no more than 30 percent of the minimum potential saturation time. The permit holder shall maintain records for these systems, including the calculations performed to determine the saturation time. The time limit on carbon canister service shall be recorded and the expiration date attached to the carbon can.

(7) Liquid scrubbers may be used upstream of carbon canisters to enhance VOC capture provided such systems are closed systems and the spent absorbing solution is discharged into a closed container, vessel, or system.

B. Thermal Oxidizer and Vapor Combustion Units (VCUs) **(date – Project No. 326326)**

(1) The thermal oxidizer or VCU six minute average firebox exit temperature shall be maintained at not less than 1400°F and waste gas flows shall be limited to assure at least a 0.5 second residence time in the fire box while waste gas is being fed into the oxidizer.

(2) The thermal oxidizer or VCU exhaust temperature shall be continuously monitored and recorded when waste gas is directed to the oxidizer or VCU. The temperature measurements shall be made at intervals of six minutes or less and recorded at that frequency. Temperature measurements recorded in continuous strip charts may be used to meet the requirements of this section.

The temperature measurement device shall be installed, calibrated, and maintained according to accepted practice and the manufacturer's specifications. The device shall have an accuracy of the greater of ±0.75 percent of the temperature being measured expressed in degrees Celsius or ±2.5ºC.

(3) As an alternative to 61.B.(1) of this condition, the thermal oxidizer or VCU may be tested to confirm a minimum 99 wt percent destruction efficiency. The results of the test will be used to determine the minimum operating temperature and residence time. Stack Test must have been performed within the last 12 months. Stack VOC concentrations and flow rates shall be measured in accordance with applicable United

States Environmental Protection Agency (EPA) Reference Methods. A copy of the test report shall be maintained with the thermal oxidizer or VCU and a summary of the testing results shall be included with the emission calculations.

(4) As an alternative to 61.B.(1)-(2) of this condition, the thermal oxidizer or VCU may be equipped with continuous VOC monitors (inlet and outlet). The VOC monitors shall be calibrated and maintained according to SC No. 52, except 52.C. In order to demonstrate compliance with this requirement, inlet VOC and outlet VOC concentrations and flows shall be measured at least every 15 minutes and this information used to determine inlet and outlet VOC mass rates on an hourly basis to confirm a minimum of 99 percent destruction efficiency or an exhaust concentration not greater than 20 ppmv.

C. Internal Combustion Engine.

(1) The internal combustion engine shall have a VOC destruction efficiency of at least 99 percent.

(2) The engine must have been stack tested with butane to confirm the required destruction efficiency within the past 12 months. VOC shall be measured in accordance with the applicable United States EPA Reference Method during the stack test and the exhaust flow rate may be determined from measured fuel flow rate and measured oxygen concentration. A copy of the stack test report shall be maintained with the engine. There shall also be documentation of acceptable VOC emissions following each occurrence of engine maintenance which may reasonably be expected to increase emissions including oxygen sensor replacement and catalyst cleaning or replacement. Stain tube indicators specifically designed to measure VOC concentration shall be acceptable for this documentation, provided a hot air probe or equivalent device is used to prevent error due to high stack temperature, and three sets of concentration measurements are made and averaged. Portable VOC analyzers meeting the requirements of SC No. 52 are also acceptable for this documentation.

(3) The engine shall be operated with an oxygen sensor-based air-to-fuel ratio (AFR) controller. Documentation for each AFR controller that the, manufacturer's, or supplier's recommended maintenance has been performed, including replacement of the oxygen sensor as necessary for oxygen sensor-based controllers shall be maintained with the engine. The oxygen sensor shall be replaced at least quarterly in the absence of a specific written recommendation.

D. The plant flare system

(1) The heating value and velocity requirements in 40 CFR 60.18 shall be satisfied during operations authorized by this permit.

(2) The flare shall be operated with a flame present at all times and/or have a constant pilot flame. The pilot flame shall be continuously monitored by a thermal couple or an infrared monitor. The time, date, and duration of any loss of pilot flame shall be recorded. Each monitoring device shall be accurate to, and shall be calibrated at a frequency in accordance with, the manufacturer's specifications.

(3) Each flare shall be equipped with one of the following:

(a) Operation and maintenance of a flare gas recovery system.

(b) A continuous flow monitor and composition analyzer that provides a record of the flare gas flow and composition of either the total VOC or heating value of the flare gas.

The flow monitor and analyzer sample point shall be installed as near as possible to the flare inlet such that the total vent stream to the flare is measured and analyzed. Readings shall be taken at least once every 15 minutes and the average hourly values of the flow and composition shall be recorded each hour. The flow monitors shall be calibrated on an annual basis to meet the following accuracy specifications: the flow monitor must be calibrated to manufacturer's specifications; the temperature monitor must be calibrated to within ± 2.0 percent at absolute temperature; the pressure monitor must be calibrated to within ± 5.0 mmHg.

i. If VOC monitoring is chosen: Calibration of the analyzer shall follow the procedures and requirements of Section 10.0 of 40 CFR Part 60, Appendix B, Performance Specification 9, as amended through October 17, 2000, (65 FR 61744), except that the multi-point calibration procedure in Section 10.1 of Performance Specification 9 shall be performed at least once every calendar quarter instead of once every month, and the mid-level calibration check procedure in Section 10.2 of Performance Specification 9 shall be performed at least once every calendar week instead of once every 24 hours. The on-line analyzer system must be capable of measuring constituents sufficient to determine the net heating value of the gas combusted in the flare to within 5.0%, or be calibrated with certified standards of the top two constituents affecting net heating value, whichever is more stringent and the ranges of calibration standards may be based on the typical concentrations observed rather than the full potential range of concentrations. The calibration gases used for calibration procedures shall be in accordance with Section 7.1 of Performance Specification 9. Net heating value of the gas combusted in the flare shall be calculated according to the equation given in 40 CFR § 60.18(f)(3) as amended through October 17, 2000, (65 FR 61744).

ii. If heating value is chosen: The calorimeter shall be calibrated, installed, operated, and maintained, in accordance with manufacturer recommendations, to continuously measure and record the net heating value of the gas sent to the flare, in British thermal units/standard cubic foot of the gas.

E. Single Carbon Adsorption or Scrubber System

A single liquid scrubbing or single carbon canister adsorption system may be used as a sole control device if the requirements below are satisfied.

(1) The exhaust to atmosphere shall be continuously monitored with a CEM. The VOC concentration shall be recorded at least once every 15 minutes when waste gas is directed to the CAS or scrubber.

(2) The method of VOC sampling and analysis shall be by detector meeting the requirements of SC No. 52 except 52.C.

(3) An alarm shall be installed such that an operator is alerted when outlet VOC concentration exceeds 100 ppmv above background. The MSS activity shall be stopped as soon as possible when the VOC concentration exceeds 100 ppmv above

background for more than one minute. The date and time of all alarms and the actions taken shall be recorded.

F. A closed loop refrigerated vapor recovery system

(1) The vapor recovery system shall be installed on the facility to be degassed using good engineering practice to ensure air contaminants are flushed from the facility through the refrigerated vapor condensers and back to the facility being degassed. The vapor recovery system and facility being degassed shall be enclosed except as necessary to insure structural integrity (such as roof vents on a floating roof tank).

(2) VOC concentration in vapor being circulated by the system shall be sampled and recorded at least once every 4 hours at the inlet of the condenser unit with an instrument meeting the requirements of SC No. 52.

(3) The quantity of liquid recovered from the tank vapors and the tank pressure shall be monitored and recorded each hour. The liquid recovered must increase with each reading and the tank pressure shall not exceed one inch water pressure while the system is operating.

G. Other control devices approved by the TCEQ through a permit amendment application or a pollution control permit application.

62. The following requirements apply to capture systems for the plant flare system.

A. Each capture system for the plant flare system shall comply with one of the following:

(1) Conduct a once a month visual, audible, and/or olfactory inspection of the capture system to verify there are no leaking components in the capture system; or

(2) verify the capture system is leak-free by inspecting in accordance with 40 CFR Part 60, Appendix A, Test Method 21 once a year. Leaks shall be indicated by an instrument reading greater than or equal to 500 ppmv above background.

B. The control device shall not have a bypass.

C. If any of the inspections under A of this condition is not satisfactory, the permit holder shall promptly take necessary corrective action. Records shall be maintained documenting the performance and results of the inspections required in this condition.

63. If spray guns are used to apply paint, they shall be airless, high volume low pressure (HVLP), or have the same or higher transfer efficiency as airless or HVLP spray guns.

64. Emissions from all painting activities, except for minor painting identified in Attachment 2 to this permit, at this site must satisfy the criteria below. New compounds may also be added through the use of the procedure below.

A. Short-term (pounds per hour [lb/hr]) and annual (TPY) emissions shall be determined for each chemical in the paint as documented in the permit application. The calculated emission rate shall not exceed the maximum allowable emissions rate at any emission point.

B. The Effect Screening Level (ESL) for the material shall be obtained from the current TCEQ ESL list or by written request to the TCEQ Toxicology Division.

C. The total painting emissions of any compound must satisfy one of the following conditions:

(1) The total emission rate is less than 0.1 lb/hr and the ESL greater than or equal to 2 μg/m^3; or

(2) The emission rate of the compound in pounds per hour is less than the ESL for the compound divided by 171.5 (ER<ESL/171.5).

D. The permit holder shall maintain records of the information below and the demonstrations in steps A though C above. The following documentation is required for each compound:

(1) Chemical name(s), composition, and chemical abstract registry number if available.

(2) Material Safety Data Sheet.

(3) Maximum concentration of the chemical in weight percent

(4) Paint usage and the associated emissions shall be recorded each month and the rolling 12 month total emissions updated.

65. No visible emissions shall leave the property due to painting or abrasive blasting.

66. Black Beauty and Garnet Sand may be used for abrasive blasting. The permit holder may also use blast media that meet the criteria below:

A. The media shall not contain asbestos or greater than 1.0 weight percent crystalline silica.

B. The weight fraction of any metal in the blast media with a short term ESL less than 50 micrograms per cubic meter as identified in the most recently published TCEQ ESL list shall not exceed the ESLmetal/1000.

C. The MSDS for each media used shall be maintained on site.

D. Blasting media usage and the associated emissions shall be recorded each month and the rolling 12 month total emissions updated.

67. Planned maintenance activities must be conducted in a manner consistent with good practice for minimizing emissions, including the use of air pollution control equipment, practices and processes. All reasonable and practical efforts to comply with SC Nos. 49 through 66, 68, and 69 must be used when conducting the planned maintenance activity, until the commission determines that the efforts are unreasonable or impractical, or that the activity is an unplanned maintenance activity.

68. Slab cleaning activities are limited to water washing small pieces of process equipment, empty vacuum trucks, and empty portable frac containers. Records shall be maintained of the number of items cleaned each day and the emissions determined each month based on the number of items cleaned as estimated in the permit amendment application, PI-1 dated December 21, 2006. The permit holder may assume that all vacuum trucks and frac tanks used on the site as recorded in SC Nos. 56 and 57 are cleaned in lieu of maintaining cleaning records for those items.

69. The following requirements ensure satisfactory impacts off-site during MSS.

A. A maximum of 3 frac or temporary storage tanks or vessels may be filled with naphtha during any one hour period.

B. Emissions from refilling tanks with a landed roofs with a liquid with a vapor pressure greater than 0.50 psia shall be routed to a control device meeting the requirements of SC No. 61 unless the tank has been cleaned and degassed.

C. While filling a tank with a landed roof with a liquid with vapor pressure greater than 0.50 psia without emission control, no other tanks with landed roofs may be degassed or filled with that type of liquid.

D. If a cleaned and degassed tank with a landed roof has been refilled with a liquid with vapor pressure greater than 0.50 psia without emission control in the past 12 months, emissions from refilling the tank with a landed roof shall be routed to a control device meeting the requirements of SC No. 61 if the liquid has a vapor pressure greater than 0.50 psia.

70. Records shall be maintained in accordance with SC No. 50 for planned MSS on the Air Liquide Large Industries SMR (Permit 34245, RN103120929). Total waste gas directed to the Valero flares during these operations shall not exceed the total identified in the permit amendment application, PI-1 dated September 23, 2014. **(03/16)**

71. The following steps shall take place before the catalyst is removed from the HDS unit for transfer to the catalyst pad. The reactor shall be cooled prior to opening and the catalyst shall be flushed with gas oil followed by hydrogen recycle gas circulation. The catalyst shall then be neutralized with a demineralized water and soda ash solution.

72. Each of the following EPNs may not exceed the hours of MSS operation per calendar year shown in the table. **(03/16)**

Emission Point Number	Hours of MSS operation per calendar year
30-B-04MSS	36
16-P-11	52
16-P-12	52
16-P-13	52
16-P-14	52

Permit References

73. The permit holder shall maintain a copy of the effective permit at the site together with complete copies of all confidential documents that are referenced in the above permit conditions as attachments. The permit and attachments shall be made available to TCEQ personnel at the site upon request.

Emission Cap Compliance Recordkeeping

74. Recordkeeping programs for those facilities authorized by the permit shall be established and maintained such that the ability to demonstrate compliance with all authorized emission caps and individual emission rate limits (short-term and annual) is ensured. Records of all compliance testing, CEMS/PEMS results, and process parameters necessary to demonstrate compliance with the emission rate caps shall be maintained on-site for a period of five years.

Emissions calculations for verifying compliance with the emission caps shall be performed at least once every quarter to demonstrate compliance with the annual rolling average requirement. The holder of this permit shall maintain all records necessary to demonstrate compliance with the short-term (lb/hr) and annual TPY emissions cap and provide such demonstration of compliance to the TCEQ Corpus Christi Regional Office upon request.

The emissions shall be determined using the following techniques: **(02/18)**

Fugitive	Component counts using the emission factors and method specified in the permit application.
Cooling Towers	Measured strippable VOC concentration as specified in SC No. 30 and the cooling tower circulation rate.
Tanks	As specified in SC No. 28.
Heaters/Boilers	If a CEMS is installed, as specified in SC No. 40. If stack tested per SC No. 39, using the most recent stack test result and recorded firing rate for the period. If no sampling is required, using the emission factor in the permit application and the recorded firing rate for the period.
Loading	Fugitive emissions from loading operations shall be calculated using: (a) AP 42 loading equation listed in Chapter 5.2 and (b) the TCEQ publication titled "Technical Guidance for Chemical Sources Loading Operations." Emissions from control devices shall be determined using the emission factor (in mg/l) determined through testing and the volume loaded. The manufacturer's guaranteed emission factor may be used if the most recent stack testing has verified that factor.
SRU/HOC	If a CEMS is installed, as specified in SC No. 40.
Scrubber	If stack tested per SC No. 38, using the most recent stack test result and recorded operating rate for the period. If no sampling is required, using the emission factor in the flexible permit application and the average value of the appropriate operating parameter for the period.
Diesel Engines	Emissions calculated based on hours of operation and emission factors listed on Table D-1 in the confidential section of the permit amendment application dated November 16, 2004.

These and all other records required by any previous condition of this permit shall be made available to the TCEQ Executive Director or his representative upon request.

Federal Applicability

75. These facilities shall comply with all applicable requirements of the U.S. Environmental Protection Agency (EPA) regulations on Standards of Performance for New Stationary Sources promulgated for the following:

    A. Petroleum Refineries in 40 CFR Part 60, Subparts A , J, and Ja as follows: **(04/16)**

        (1) All heaters and boilers – Subpart J, except as noted below;

(2) Desalter Heater (EPN 114), Heater 31-H-01 (EPN: 117), Boiler 30-B-04 (EPN: 30-04), and Boiler 30-B-05 (EPN 30-B-05) – Subpart Ja **(02/18)**

(3) HOC – Subpart J

(4) HOC – Subpart Ja (upon startup of the HOC Reconfiguration Project (Project 333877)

(5) SRU's – Subpart J

(6) BUP Flare, Main Flare, and Ground Flare – Subpart Ja

B. Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and Prior to May 19, 1978, in 40 CFR Part 60, Subparts A and K.

C. Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984, in 40 CFR Part 60, Subparts A and Ka.

D. Volatile Organic Liquid Storage Vessels (including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced after July 23, 1984, in 40 CFR Part 60, Subparts A and Kb.

E. Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry (SOCMI) for which Construction, Reconstruction, or Modification Commenced After January 5, 1981, and on or Before November 7, 2006, in 40 CFR Part 60, Subparts A and VV.

F. Bulk Gasoline Terminals in 40 CFR Part 60, Subparts A and XX.

G. Petroleum Refineries for which Construction, Reconstruction, or Modification Commenced after January 4, 1983, and on or Before November 7, 2006, in 40 CFR Part 60, Subparts A and GGG.

H. The VOC Emissions from SOCMI Distillation Operations in 40 CFR Part 60, Subparts A and NNN.

I. The VOC Emissions from Petroleum Refinery Wastewater Systems in 40 CFR Part 60, Subparts A and QQQ.

J. The VOC Emissions from SOCMI Reactor Processes in 40 CFR Part 60, Subparts A and RRR.

76. These facilities shall comply with all applicable requirements of EPA regulations on National Emission Standards for Hazardous Air Pollutants (NESHAPS) promulgated for the following:

A. Asbestos in 40 CFR Part 63, Subparts A and M.

B. Benzene Waste Operations in 40 CFR Part 63, Subparts A and FF.

77. These facilities shall comply with all applicable requirements of EPA regulations on National Emission Standards for Hazardous Air Pollutants (NESHAPS) for Source Categories promulgated for the following:

A. Marine Tank Vessel Loading Operations in 40 CFR Part 63, Subparts A and Y.

B. Hazardous Air Pollutants from Petroleum Refineries in 40 CFR Part 63, Subparts A and CC.

C. Hazardous Air Pollutants for Petroleum Refineries: Catalytic Cracking Units, Catalytic Reforming Units, and Sulfur Recovery Units in 40 CFR Part 63, Subparts A and UUU.

D. Industrial, Commercial, and Institutional Boilers and Process Heaters in 40 CFR Part 63, Subparts A and DDDDD. **(02/18)**

E. Hazardous Air Pollutants: Site Remediation in 40 CFR Part 63, Subparts A and GGGGG.

Referenced Permit by Rule Authorizations

78. The following sources and/or activities are authorized under a Permit by Rule (PBR) by Title 30 Texas Administrative Code Chapter 106 (30 TAC Chapter 106). These lists are not intended to be all inclusive and can be altered without modifications to this permit. **(date – Project No. 326326)**

Authorization	Source or Activity
PBR No. 155846	Control of liquid petroleum gas (LPG) unloading with a portable vapor combustion unit.

Sour Water Storage Tanks

79. The sour water storage tanks shall be subject to the following conditions: **(TBD)**

A. The sour water storage tank system shall be maintained by either of the following methods:

(1) A minimum sour water retention time of 2.0 days in conjunction with a hydrocarbon detection and flow diversion system designed to prevent hydrocarbon carryover to the SRUs by routing sour waters with unacceptable levels of hydrocarbons to the tanks listed in A of this condition. Retention time shall be calculated and recorded daily using the daily average combined tank volume of all sour water tanks and the daily average combined feed rates to the sour water strippers.

(2) A minimum sour water retention time of 3.0 days

B. If acid gas flaring takes place that might be traced to hydrocarbon carryover from the sour water system, the operator shall engage a third-party consultant to complete a Root Cause Failure Analysis (RCFA) within 90 days after the acid gas flaring event in question. The Beaumont Regional Office shall be supplied with a copy of the RFCA within 10 days of it being completed. If the RCFA determines that the acid gas flaring event can be traced to sour water system hydrocarbon carryover that is partially or totally caused by inadequate retention or hold up times, the holder of this permit shall implement one of the following options within 60 days after completion of the RFCA:

(1) The holder of this permit shall submit design information and a proposed implementation schedule to the TCEQ Office of Permitting and Registration for three days of sour water retention and hold up time based on maximum expected feed rates to the sour water strippers, or

(2) Design information and implementation schedule of a proposed alternative other than increased sour water retention time.

C. For periods of planned maintenance activity for the sour water tank, the sour water stripper surge system shall have a reduced minimum on-line retention time of one and a half days based on the sour water flow rate into the tanks. Records of these periods and the corresponding maintenance activity must be maintained and made available upon request.

Greenhouse Gas Emissions

80. Permit holders must keep records sufficient to demonstrate compliance with 30 Texas Administrative Code § 116.164. If construction, a physical change or a change in method of operation results in Prevention of Significant Deterioration (PSD) review for criteria pollutants, records shall be sufficient to demonstrate the amount of emissions of GHGs from the source as a result of construction, a physical change or a change in method of operation does not require authorization under 30 TAC §116.164(a). If there is construction, a physical change or change in the method of operation that will result in a net emission increase of 75,000 tpy or more CO_{2e} and PSD review is triggered for criteria pollutants, greenhouse gas emissions are subject to PSD review. **(TBD)**

81. Monitoring, quality assurance/quality control requirements, emission calculation methodologies, record keeping, and reporting requirements related to Greenhouse Gas (GHG) emissions shall adhere to the applicable requirements in 40 CFR Part 98 and in this permit. **(TBD)**

82. Beginning after the start-up of the new and modified sources associated with the HOC Reconfiguration Project (TCEQ Project 333877), modification and construction, permittee shall calculate the CO_{2e} emissions on a 12-month rolling basis, based on the procedures and Global Warming Potentials (GWP) contained in Greenhouse Gas Regulations, 40 CFR Part 98, Subpart A, Table A-1. This condition applies to the following EPNs: 121 (HOC contribution only), FUG-CAP (new components added for Project 333877), and 30-B0-05**(TBD)**

83. Records of emissions of GHG, and how they were determined, in compliance with Special Condition Nos. 80, 81, and 82 must be maintained by the holder of this permit in a form suitable for inspection for a period of five years after collection and must be made available upon request to representatives of the TCEQ, EPA, or any local air pollution control program having jurisdiction. **(TBD)**

84. Operational and Monitoring requirements for Boiler 30-B-05

    A. Boiler 30-B-05 shall be operated with a net thermal efficiency of no less than 78 percent on a 12-month rolling average, excluding periods of maintenance, startup and shutdown. This shall be ensured by using the following good combustion practices: operating the boiler at an optimum air-fuel ratio, limiting the boiler's operating temperature to the extent practicable, and reducing heat loss through the use of insulating materials where feasible.

    B. Thermal efficiency shall be calculated and recorded at least monthly using equation G-1 from American Petroleum Institute (API) method 560 (4th ed. or later), Annex G using monitoring data collected as required under this permit, other quality-assured data, and engineering judgment.

       If the maximum range between twelve or more consecutive monthly efficiency calculations does not exceed 5 percentage points, and each calculation demonstrates compliance with the minimum efficiency requirements of this paragraph, the permit holder may elect to reduce the frequency of performing the calculation to quarterly (skipping up to two monthly calculations); provided, however, that:

(1) In case a quarterly efficiency calculation yields an efficiency value outside of the maximum range specified in this previous paragraph, monthly efficiency calculations shall be resumed.

(2) In case a quarterly efficiency calculation shows non-compliance with the minimum efficiency requirement of this paragraph, the permit holder shall assume that a condition of non-compliance occurred during each month of the previous quarter where a calculation was skipped.

Date: TBD

Attachment 1

Permit Numbers 38754, PSDTX324M15, and GHGPSDTX211

Permit Emission Points by Type

Category	EPN	Description
Fired Units	1	Crude Heater
	16-P-04	Diesel Pump
	16-P-07	Diesel Pump
	16-P-11	Diesel Pump
	16-P-12	Diesel Pump
	16-P-13	Diesel Pump
	16-P-14	Diesel Pump
	49-H-90	C7 Splitter Reboiler
	74	Vacuum Unit Heater
	83-P-136A	Diesel Pump
	83-P-136B	Diesel Pump
	114	Desalter Heater
	115	HDS Charge Heaters
	116	HDS Heavy Oil Preheater
	117	Alky Fract Reboiler
	118	Hydrogen Reformer Heater
	119	Sulften Heater
	120	Butamer Heater
	121	HOC (incinerator and scrubber stack)
	121a	SRU Bypass Stack
	124	API Separator Combustor
	131	Crude Preflash Heater
	132	Crude Stabilizer Heater
	150	HCU Heater
	151	NHT Heater
	152	CRU Heaters
	153	Boiler 30-B-02
	162	Oleflex Heaters

	172	RSU Heater
	30-B-04	Boiler 30-B-04
	30-B-04MSS	Boiler 30-B-04MSS
	195	GD Charge Heater
	900	Crude Charge Heater (Permit No. 106965)
	TRUCKCOMB	Truck Loading Combustor
	30-B-05	Boiler 30-B-05
Flares	126	Main Flare
	127	MTBE Flare
	135	Acid Gas Flare (Pilots Only)
	158	Ground Flare
Tanks	69	Tank No. 9
	83-TK-26	Tank No. 26
	83-TK-155	Tank No. 155
	83-TK-159	Tank No. 159
	83-TK-160	Tank No. 160
	83-TK-162	Tank No. 162
	187	Tank No. 25 (Sour Water Tank)
	902	Tank No. 165 (Permit No. 106965)
Fugitive	1F	Crude Unit
	2F	Vacuum Unit
	4F	LEU
	07F	BUP Flare
	08F	08 FLR/Day Tanks
	11F	Desalter Unit
	12F	HDS Unit
	13F	SMR
	18F	HRLEU Unit
	20F	LRU
	21/22F	HOC Unit
	30F	Boilerhouse

	31F	HF Alkylation Unit
	36F	Butamer Unit
	37F	MTBE
	38F	Oleflex
	41F	SRU Unit
	42F	SWS
	46-24F	SULF/SEU
	47F	HCU
	47PSAF	PSA
	48F	NHT
	49F	CRU
	52F	Gasoline Desulfurization
	54F	SHU
	83F	WWT
	175	49-RSU/XFU
	201	Railcar Unloading
	DOCKS	Docks
	LPGSTGF	LPG Storage
	MVRUF	MVRU
	TERM-F	Terminals
	TRKRACKFUG	Truck Rack
	903	Crude Unit Fugitives (Permit No. 106965)
	904	Crude Unit BWS Fugitives (Permit No. 106965)
	908	Crude Storage Fugitives (Permit No. 109543)
	##F	Selective Hydrogenation Unit
	##F	LPG Gas Plant
	##F	Boiler 30-B-05
Loading	31	Barge Loading (Heavy Oil)
	SHIP FUG	Ship Dock Fugitives
	TRUCKFUG	Truck Loading
	VRU	Marine loading VRU

	907	Crude Loading Fugitives (Permit No. 109543)
	909	Crude Loading Vapor Combustor (Permit No. 109543)
Other	1CT	CU/VRU Cooling Tower
	01-01	Crude/Vac Pump Alley
	01-02	North of Vac Unit
	01-03	North of Vac Unit
	50-01	East of Tank 62
	52-01	NW of GDU MCC
	70-01	East of Tank 55
	70-02	NW of Tank 106
	70-03	West of Tank 94
	72-01	East of Tank 111
	73-01	North of Tank 152
	73-01	Between TK 8 & TK 164
	83-01	WWT-Hydroblast Pad
	01-04	NW of Vac Unit
	03-01	North of tanks 156/161
	11-01	Desalter Pump Alley
	21BH	Magnacat Unit
	41-01	North of 43-TK-08
	41-02	West of 41-V-05
	49-01	NW of XFU
	49-02	North of NHT
	49-03	NHT Pump Alley
	83-02	WWT-Desalter Lift
	83-03	WWT-East of KOH Trtr
	83-04	WWT- NE of Tank 159
	83-05	WWT-North Lift
	83-06	WWT-North of V-68
	83-07	WWT-South of V-55

	83-09	WWT-BSRP
	83-10	WWT-83-V-99
	83-12	WWT-83-V-28
	83-TK-23	Equalization Tank
	83-TK-27	Bio Oxidation Tank
	83-V-58	Tank No. 58
	83-V-59	Tank No. 59
	83-V-97	Tank No. 97
	98-02	WP MSAT Rail Rack
	122	HOC Cooling Tower
	123	ALKY Cooling Tower
	124a	API Sep Back Up
	155	CCU CCR
	901	Crude Unit Cooling Tower (Permit No. 106965)
	168	Oleflex CCR
	AE-49601A/B	Analyzer Vent AE-49601A/B
	167-CT	BUP Cooling Tower
	AE-49900A/B	Analyzer Vent AE-49900A/B
	AE-49901A/B	Analyzer Vent AE-49901A/B
	V-201	WP MSAT Rail Rack
	WWTP-AERB	Aeration Basin
	WWTP-CLRF	Clarifier
	WWTP-OWS	WW Collection System
	WWTP-SLB	Salin Basin
	HOC-PP-CT	Cooling Tower -Propylene Project
	XX-01	HOC PP Gas Plant CAS

Date: TBD

Attachment 2

Permit Numbers 38754, PSDTX324M15, and GHGPSDTX211

Inherently Low Emitting Activities

	Emissions				
Activity	**VOC**	**NO_x**	**CO**	**PM**	**H_2S/SO_2**
Catalyst activation/deactivation	x				
Management of sludge from pits, ponds, sumps, and water conveyances	x				
Aerosol Cans	x				
Calibration of analytical equipment and process instrumentation	x	x	x		x
Carbon canister replacement	x				
Catalyst charging/handling				x	
Instrumentation/analyzer maintenance	x				
Meter proving	x				
Replacement of analyzer filters and screens	x				
Maintenance on water treatment systems (cooling, boiler, potable)	x				
Soap and other aqueous based cleaners	x				
Cleaning sight glasses	x				
Aerosol and miscellaneous chemical usage	x				

Date: January 22, 2016

Attachment 3

Permit Numbers 38754, PSDTX324M15, and GHGPSDTX211

Routine Maintenance Activities

Pump repair/replacement

Fugitive component (valve, pipe, flange) repair/replacement

Compressor repair/replacement

Heat exchanger repair/replacement

Vessel repair/replacement

Date: January 22, 2014

Attachment 4

Permit Numbers 38754, PSDTX324M15, and GHGPSDTX211

MSS Activity Summary

Facilities	Description	Emissions Activity	EPN
all process units and tanks	shutdown/depressurize/drain/startup (includes SRU shutdowns, FCCU startups and Air Liquide MSS activities)	Vent to control	MSS Turnaround (MSS-TA) Routine MSS (MSS-MA)
all process units and tanks	process unit purgegas/drain/startup (except FCCU and SRU)	Vent to atmosphere	MSS-TA Uncontrolled MSS-MA Uncontrolled
Vacuum Trucks	removal and transfer of process and/or waste liquids	Vent to atmosphere	MSS-TA Uncontrolled MSS-MA Uncontrolled
Process units and tanks	Painting	Vent to atmosphere	MSS-TA Uncontrolled MSS-MA Uncontrolled
Process units and tanks	Miscellaneous chemical usage	Vent to atmosphere	MSS-TA Uncontrolled MSS-MA Uncontrolled
FRAC tanks	Temporary storage of process liquids and/or waste liquids	Vent to atmosphere	MSS-TA Uncontrolled MSS-MA Uncontrolled
Cleaning Slab	Washing of portable or mobile MSS or process equipment	vent to atmosphere	MSS-TA Uncontrolled MSS-MA Uncontrolled
Process units and tanks	Abrasive blasting	Vent to atmosphere	MSS-TA Uncontrolled
HDS	Remove spent catalyst, store on pad prior to transfer	Vent to atmosphere	MSS-TA Uncontrolled
Boiler 30-B-04	Startup and shutdown	Vent to atmosphere	30-B-04 MSS
Firewater Pump Engines	Test runs	Vent to atmosphere	16-P-11, 16-P-12, 16-P-13, and 16-P-14

Date: TBD

Emission Sources - Maximum Allowable Emission Rates

Permit Numbers 38754 and PSDTX324M15

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)
MSS Caps	MSS Caps	CO	2,085.19	128.91
		H_2S	10.59	0.22
		NH_3	4.41	0.17
		NO_x	356.84	27.19
		PM	79.52	3.76
		PM_{10}	79.52	2.92
		$PM_{2.5}$	79.52	2.92
		SO_2	996.29	338.89
		VOC	578.44	70.04
		Exempt Solvents	1.76	0.60
1	Heater - Crude Heater (01-H-01)	CO	8.10	20.13
		NH_3	0.05	0.17
		NO_x	9.72	19.24
		PM	1.21	4.00
		PM_{10}	1.21	4.00
		$PM_{2.5}$	1.21	4.00
		SO_2	2.50	5.71
		VOC	0.87	2.90
131	Heater - Crude Preflash (01-H-02)	CO	0.62	2.71
		NH_3	<0.01	0.02
		NO_x	1.77	6.29
		PM	0.13	0.49
		PM_{10}	0.13	0.49
		$PM_{2.5}$	0.13	0.49
		SO_2	0.27	0.64

Emission Sources - Maximum Allowable Emission Rates

		VOC	0.10	0.35
132	Heater - Crude Stabilizer (01-H-03)	CO	0.17	0.72
		NH_3	<0.01	<0.01
		NO_x	0.48	2.06
		PM	0.04	0.15
		PM_{10}	0.04	0.15
		$PM_{2.5}$	0.04	0.15
		SO_2	0.07	0.22
		VOC	0.03	0.11
74	Vacuum Heater	CO	4.99	16.77
		NH_3	0.03	0.14
		NO_x	5.98	26.21
		PM	0.74	3.26
		PM_{10}	0.74	3.26
		$PM_{2.5}$	0.74	3.26
		SO_2	1.37	4.13
		VOC	0.54	2.36
114	Heater - Desalter Heater (11-H-01)	CO	3.54	15.52
		CO	3.54	15.52
		NH_3	0.03	0.14
		NO_x	3.96	17.34
		PM	0.74	3.23
		PM_{10}	0.74	3.23
		$PM_{2.5}$	0.74	3.23
		SO_2	1.52	4.60
		VOC	0.53	2.34
		H_2S	0.02	0.05
115	HDS Heaters	CO	8.08	32.91
		NH_3	0.05	0.22

Emission Sources - Maximum Allowable Emission Rates

		NO_x	9.70	42.07
		PM	1.20	5.22
		PM_{10}	1.20	5.22
		$PM_{2.5}$	1.20	5.22
		SO_2	2.49	7.45
		VOC	0.87	3.78
115	HDS Heaters	CO	8.08	32.91
		NH_3	0.05	0.22
		NO_x	9.70	42.07
		PM	1.20	5.22
		PM_{10}	1.20	5.22
		$PM_{2.5}$	1.20	5.22
		SO_2	2.49	7.45
		VOC	0.87	3.78
116	Heater - HDS Pre-Heater (12-H-02)	CO	0.31	1.10
		NH_3	<0.01	0.02
		NO_x	2.36	8.28
		PM	0.15	0.51
		PM_{10}	0.15	0.51
		$PM_{2.5}$	0.15	0.51
		SO_2	0.30	0.73
		VOC	0.11	0.37
118	Hydrogen Reformer Heater	CO	58.51	220.73
		NH_3	0.37	1.52
		NO_x	70.21	284.40
		PM	8.72	35.80
		PM_{10}	8.72	35.80
		$PM_{2.5}$	8.72	35.80
		SO_2	44.53	122.64

Emission Sources - Maximum Allowable Emission Rates

		VOC	9.95	25.91
153	Heater - HR Boiler (30-B-02)	CO	8.46	28.94
		NH_3	0.09	0.33
		NO_x	22.56	82.34
		PM	2.10	5.51
		PM_{10}	2.10	5.51
		$PM_{2.5}$	2.10	5.51
		SO_2	4.34	10.66
		VOC	1.52	3.99
30-B-04	Boiler 30-B-04	CO	19.84	48.14
		NH_3	2.41	5.86
		NO_x	8.25	20.02
		PM	4.10	9.95
		PM_{10}	4.10	9.95
		$PM_{2.5}$	4.10	9.95
		SO_2	8.65	14.47
		VOC	2.97	7.20
30-B-04MSS	Boiler 30-B-04	CO	198.55	3.57
		NO_x	55.00	0.99
117	Heater - Alky Frac. Reb. (31-H-01)	CO	2.51	8.83
		NH_3	0.05	0.17
		NO_x	5.64	19.86
		PM	1.17	4.11
		PM_{10}	1.17	4.11
		$PM_{2.5}$	1.17	4.11
		SO_2	2.41	5.86
		VOC	0.85	2.97
120	Heater - Butamer Heater (36-H-01)	CO	0.27	0.98
		NH_3	<0.01	0.02

Emission Sources - Maximum Allowable Emission Rates

		NO_x	2.00	4.30
		PM	0.12	0.26
		PM_{10}	0.12	0.26
		$PM_{2.5}$	0.12	0.26
		SO_2	0.26	0.41
		VOC	0.09	0.19
162	Oleflex Heater	CO	19.45	69.49
		NH_3	0.12	0.49
		NO_x	23.34	65.75
		PM	2.90	11.62
		PM_{10}	2.90	11.62
		$PM_{2.5}$	2.90	11.62
		SO_2	5.99	16.57
		VOC	2.10	8.41
119	Heater - Sulften Heater (46-H-01)	CO	0.35	1.49
		NH_3	0.01	0.03
		NO_x	2.62	5.21
		PM	0.16	0.32
		PM_{10}	0.16	0.32
		$PM_{2.5}$	0.16	0.32
		SO_2	0.34	0.63
		VOC	0.12	0.24
150	HCU Heater	CO	6.10	24.38
		NH_3	0.06	0.26
		NO_x	12.19	48.76
		PM	1.51	6.06
		PM_{10}	1.51	6.06
		$PM_{2.5}$	1.51	6.06
		SO_2	3.13	8.63

Emission Sources - Maximum Allowable Emission Rates

		VOC	1.10	4.38
151	Heater - NHU Heater (48-H-01)	CO	3.05	6.68
		NH_3	0.01	0.05
		NO_x	3.90	17.08
		PM	0.29	1.27
		PM_{10}	0.29	1.27
		$PM_{2.5}$	0.29	1.27
		SO_2	0.60	1.81
		VOC	0.21	0.92
152	CRU Heater	CO	16.85	57.02
		NH_3	0.18	0.60
		NO_x	39.31	133.06
		PM	4.18	14.16
		PM_{10}	4.18	14.16
		$PM_{2.5}$	4.18	14.16
		SO_2	9.80	22.69
		VOC	3.03	10.25
172	Heater - RSU Heater (49-H-71)	CO	3.30	12.72
		NH_3	0.02	0.08
		NO_x	3.96	15.26
		PM	0.49	1.90
		PM_{10}	0.49	1.90
		$PM_{2.5}$	0.49	1.90
		SO_2	1.02	2.70
		VOC	0.36	1.37
49-H-90	Heater - C7 Splitter Reb. (49-H-90)	CO	5.32	16.82
		NH_3	0.03	0.13
		NO_x	4.25	15.46
		PM	0.79	3.01

Emission Sources - Maximum Allowable Emission Rates

		PM_{10}	0.79	3.01
		$PM_{2.5}$	0.79	3.01
		SO_2	1.64	4.29
		VOC	0.57	2.18
195	Heater - GDU Charge Heater (52-H-01)	CO	13.65	34.29
		NH_3	0.05	0.20
		NO_x	5.80	14.69
		PM	1.23	4.61
		PM_{10}	1.23	4.61
		$PM_{2.5}$	1.23	4.61
		SO_2	2.55	6.57
		VOC	0.89	3.34
1F	Crude Unit	VOC	See Subcap	See Subcap
2F	Vacuum Unit	H_2S	See Subcap	See Subcap
		VOC	See Subcap	See Subcap
4F	LEU Unit	VOC	See Subcap	See Subcap
11F	Desalter Unit	VOC	See Subcap	See Subcap
12F	HDS Unit	H_2S	See Subcap	See Subcap
		VOC	See Subcap	See Subcap
13F	H_2 Reformer	VOC	See Subcap	See Subcap
18F	LEU -2	VOC	See Subcap	See Subcap
20F	LRU	VOC	See Subcap	See Subcap
21/22F	HOC	H_2S	See Subcap	See Subcap
		VOC	See Subcap	See Subcap
30F	Boiler House	VOC	See Subcap	See Subcap
07F	#07 BUP Flare	VOC	See Subcap	See Subcap
31F	Alky Unit	H_2S	See Subcap	See Subcap
		HF	0.52	2.30
		VOC	See Subcap	See Subcap

Emission Sources - Maximum Allowable Emission Rates

36F	Butamer Unit	VOC	See Subcap	See Subcap
37F	Iso-Octene	VOC	See Subcap	See Subcap
38F	Oleflex Unit	VOC	See Subcap	See Subcap
46-24F	SULF-10 Fugitives (5)	H_2S	See Subcap	See Subcap
		VOC	See Subcap	See Subcap
41F	SRU Unit Fugitives (5)	H_2S	See Subcap	See Subcap
		VOC	See Subcap	See Subcap
47F	HCU Unit	H_2S	See Subcap	See Subcap
		VOC	See Subcap	See Subcap
47PSA	PSA Unit	VOC	See Subcap	See Subcap
48F	NHT Unit	H_2S	See Subcap	See Subcap
		VOC	See Subcap	See Subcap
49F	CRU Unit	VOC	See Subcap	See Subcap
175	XFU/RFU/C7Split Unit	VOC	See Subcap	See Subcap
52F	GDU Unit	VOC	See Subcap	See Subcap
DOCKS	DK-Docks	VOC	See Subcap	See Subcap
08F	#08FLR/Day Tanks	VOC	See Subcap	See Subcap
LPG STGF	LPG STORAGE	VOC	See Subcap	See Subcap
MVRUF	MVRU	VOC	See Subcap	See Subcap
TERM-F	#TM-Terminal	VOC	See Subcap	See Subcap
TRKRACKFUG	TRUCK RACK (5)	VOC	See Subcap	See Subcap
83F	Wastewater Treatment Plant	VOC	See Subcap	See Subcap
54F	Selective Hydrogenation Unit	VOC	See Subcap	See Subcap
42F	Sour Water Stripper	H_2S	See Subcap	See Subcap
		VOC	See Subcap	See Subcap
##F	Selective Hydrogenation Unit	VOC	See Subcap	See Subcap
##F	LPG Gas Plant	VOC	See Subcap	See Subcap
##F	Boiler 30-B-05	VOC	See Subcap	See Subcap
168	Oleflex CCR	Cl_2	<0.01	0.04

Emission Sources - Maximum Allowable Emission Rates

		H_2SO_4	<0.01	0.01
		HCl	0.06	0.28
		SO_2	0.04	0.19
69	Tank - 9	VOC	3.10	0.49
122	Cooling Tower - HOC	PM	3.54	13.17
		PM_{10}	3.36	12.52
		$PM_{2.5}$	0.53	1.96
		VOC	5.67	21.09
123	Cooling Tower - Alky	PM	0.71	2.00
		PM_{10}	0.70	1.98
		$PM_{2.5}$	0.19	0.55
		VOC	1.26	3.55
167-CT	Cooling Tower - BUP	PM	4.52	19.26
		PM_{10}	4.30	18.33
		$PM_{2.5}$	0.67	2.88
		VOC	1.47	6.27
1CT	Cooling Tower - Crude	PM	0.34	1.13
		PM_{10}	0.34	1.11
		$PM_{2.5}$	0.06	0.21
		VOC	0.17	0.55
16-P-04	Engine - 16-P-04	CO	2.20	0.06
		NO_x	8.00	0.21
		PM	0.73	0.02
		PM_{10}	0.73	0.02
		$PM_{2.5}$	0.73	0.02
		SO_2	0.68	0.02
		VOC	0.83	0.02
16-P-07	Engine - 16-P-07	CO	2.67	0.04
		NO_x	9.69	0.15

Emission Sources - Maximum Allowable Emission Rates

		PM	0.88	0.01
		PM_{10}	0.88	0.01
		$PM_{2.5}$	0.88	0.01
		SO_2	0.82	0.01
		VOC	1.01	0.02
16-P-11	Engine - 16-P-11	CO	0.80	0.02
		NO_x	3.32	0.09
		PM	0.11	<0.01
		PM_{10}	0.11	<0.01
		$PM_{2.5}$	0.11	<0.01
		SO_2	0.10	<0.01
		VOC	0.12	<0.01
16-P-12	Engine - 16-P-12	CO	0.80	0.02
		NO_x	3.32	0.09
		PM	0.11	<0.01
		PM_{10}	0.11	<0.01
		$PM_{2.5}$	0.11	<0.01
		SO_2	0.10	<0.01
		VOC	0.12	<0.01
16-P-13	Engine - 16-P-13	CO	0.80	0.02
		NO_x	3.32	0.09
		PM	0.11	<0.01
		PM_{10}	0.11	<0.01
		$PM_{2.5}$	0.11	<0.01
		SO_2	0.10	<0.01
		VOC	0.12	<0.01
16-P-14	Engine - 16-P-14	CO	0.80	0.02
		NO_x	3.32	0.09
		PM	0.11	<0.01

Emission Sources - Maximum Allowable Emission Rates

		PM_{10}	0.11	<0.01
		$PM_{2.5}$	0.11	<0.01
		SO_2	0.10	<0.01
		VOC	0.12	<0.01
126	Main Flare	CO	See Subcap	See Subcap
		H_2S	See Subcap	See Subcap
		NO_x	See Subcap	See Subcap
		SO_2	See Subcap	See Subcap
		VOC	See Subcap	See Subcap
158	Ground Flare	CO	See Subcap	See Subcap
		H_2S	See Subcap	See Subcap
		NO_x	See Subcap	See Subcap
		SO_2	See Subcap	See Subcap
		VOC	See Subcap	See Subcap
127	BUP Flare	CO	See Subcap	See Subcap
		H_2S	See Subcap	See Subcap
		NO_x	See Subcap	See Subcap
		SO_2	See Subcap	See Subcap
		VOC	See Subcap	See Subcap
135	Acid Gas Flare (pilot only)	CO	See Subcap	See Subcap
		H_2S	See Subcap	See Subcap
		NO_x	See Subcap	See Subcap
		SO_2	See Subcap	See Subcap
		VOC	See Subcap	See Subcap
Various	Flares Subcap	CO	113.27	121.03
		H_2S	0.04	0.11
		NO_x	23.04	20.77
		SO_2	3.55	10.43
		VOC	291.17	63.51

Emission Sources - Maximum Allowable Emission Rates

31	Loading - Heavy Oil	VOC	14.96	4.72
SHIP FUG	Loading - Ships Fugitives (5)	VOC	237.46	91.74
VRU	Loading - MVRU	VOC	61.33	23.13
TRUCKFUG	Loading - Truck Fugitives (5)	VOC	11.86	15.87
TRUCKCOMB	Loading - Truck Combustor	CO	15.28	22.76
		NO_x	7.64	11.38
		SO_2	0.02	0.03
		VOC	8.18	13.61
		PM	0.23	0.34
		PM_{10}	0.23	0.34
		$PM_{2.5}$	0.23	0.34
AE-49601A/B	AE-49601A/B Analyzer Vent	VOC	0.01	0.01
AE-49900A/B	AE-49900A/B Analyzer Vent	VOC	0.01	0.01
AE-49901A/B	AE-49901A/B Analyzer Vent	VOC	0.01	0.01
121 (6)	HOC Belco Scrubber	CO	958.40	1559.15
		HCN	80.47	320.40
		H_2SO_4	49.00	199.30
		NO_x	384.12	473.81
		PM	140.00	569.40
		PM_{10}	140.00	569.40
		$PM_{2.5}$	140.00	569.40
		SO_2	223.08	437.03
		VOC	30.42	123.79
		H_2S	<0.01	<0.01
		NH_3	4.84	17.88
121 (6)	SRU Incinerators Cap	CO	220.75	678.85
		H_2S	5.82	18.73
		NO_x	54.64	239.31
		PM	24.72	98.38

Emission Sources - Maximum Allowable Emission Rates

		PM_{10}	24.72	98.38
		$PM_{2.5}$	24.72	98.38
		SO_2	191.32	837.99
		VOC	0.96	3.46
121 (6)	Temporary SRU Stack	CO	10.04	7.23
		H_2S	0.047	0.03
		NO_x	1.233	0.72
		PM	1.205	0.87
		PM_{10}	1.205	0.87
		$PM_{2.5}$	1.205	0.87
		SO_2	13.816	9.95
FUG-CAP	Fugitives Subcap (5)	VOC	112.45	492.32
		H_2S	0.59	2.58
		NH_3	0.01	0.06
155	CRU CCR	HCl	0.07	0.29
118	SMR Condenser Vent	VOC	3.64	15.94
21 BH	MAGNACAT Unit	PM	0.18	0.60
		PM_{10}	0.18	0.60
		$PM_{2.5}$	0.18	0.60
187	Tank 25	H_2S	0.02	0.04
		NH_3	<0.01	<0.01
		VOC	1.43	5.33
83-P-136A	Engine 83-P-136A-EN	CO	2.48	0.06
		NO_x	7.43	0.19
		PM	0.38	<0.01
		PM_{10}	0.38	<0.01
		$PM_{2.5}$	0.38	<0.01
		SO_2	0.88	0.02
		VOC	7.43	0.19

Emission Sources - Maximum Allowable Emission Rates

83-P-136B	Engine 83-P-136B-EN	CO	2.48	0.06
		NO_x	7.43	0.19
		PM	0.38	<0.01
		PM_{10}	0.38	<0.01
		$PM_{2.5}$	0.38	<0.01
		SO_2	0.88	0.02
		VOC	7.43	0.19
WWTP-OWS	WW collection system	VOC	8.62	37.77
83-TK-26	Tank 26	VOC	0.12	0.45
83-TK-159	Tank 159	VOC	0.15	0.39
83-TK-160	Tank 160	VOC	0.15	0.39
83-V-97	Tank 97	VOC	0.18	0.40
83-V-58	Tank 58	VOC	0.11	0.44
83-V-59	Tank 59	VOC	0.11	0.44
83-TK-162	Tank 162	VOC	0.39	1.77
83-TK-155	Tank 155	VOC	0.39	1.77
124	API/DGF Combustor	CO	1.65	7.22
		NO_x	0.45	1.76
		SO_2	0.03	0.13
		VOC	2.94	12.88
83-TK-23	Equalization Tank	VOC	0.81	3.51
83-TK27	Bio Oxidation Reactor Tank	VOC	0.51	2.22
WWTP-AERB	Aeration Basin	VOC	0.25	1.09
WWTP-CLRF	Clarifier	VOC	<0.01	0.04
WWTP-SLB	Saline Basin	VOC	<0.01	<0.01
01-01	Crude/Vacuum Unit Pump Alley	VOC	<0.01	0.02
01-02	North Side of Vacuum Unit	VOC	<0.01	0.02
01-03	North Side of Vacuum Unit	VOC	<0.01	0.02
01-04	Northwest Side of Vacuum Unit - Main Sump	VOC	<0.01	0.03

Emission Sources - Maximum Allowable Emission Rates

03-01	N of Tanks 156/161	VOC	0.02	0.08
98-02	WP MSAT Rail Rack	VOC	0.02	0.08
11-01	Desalter Pump Alley	VOC	<0.01	0.02
41-01	North of 43-TK-08 (Amine Tank)	VOC	<0.01	0.02
41-02	W of 41-V-05 (Acid Gas K.O. Drum)	VOC	<0.01	0.02
49-01	Northwest of XFU	VOC	<0.01	0.02
49-02	North Side of NHT (Unit 48)	VOC	<0.01	0.02
49-03	NHT (Unit 48) Pump Alley	VOC	<0.01	0.02
50-01	East of Tank 62	VOC	<0.01	0.02
52-01	NW of GDU MCC Room	VOC	<0.01	0.02
70-01	East of Tank 55	VOC	<0.01	0.02
70-02	Northwest of Tank 106	VOC	<0.01	0.02
70-03	West of Tank 94 (S&D Main Sump)	VOC	<0.01	0.03
72-01	East of Tank 111	VOC	<0.01	0.02
73-01	North of Tank 152 (Terminal 2A)	VOC	<0.01	0.02
73-02	Between TK 8 & TK 164 (Terminal 2)	VOC	<0.01	0.02
83-01	WWT (Hydroblast Pad)	VOC	0.02	0.07
83-02	WWT (Desalter Lift Station)	VOC	0.01	0.05
83-03	WWT (East of KOH Treater)	VOC	0.02	0.07
83-04	WWT (Northeast of Tank 159)	VOC	<0.01	0.02
83-05	WWT (North Lift Station)	VOC	<0.01	0.03
83-06	WWT (North of V-68)	VOC	<0.01	0.02
83-07	WWT (South of V-55)	VOC	<0.01	0.02
83-09	WWT (BSRP)	VOC	<0.01	0.02
83-10	WWT 83-V-99 (Diversion Box)	VOC	0.02	0.07
83-12	WWT 83-V-28 (SE of Catalyst Pad)	VOC	0.02	0.07
V-201	WP MSAT Rail Rack	VOC	0.51	2.23

Emission Sources - Maximum Allowable Emission Rates

124a	WP WWT API Combustor Backup	VOC	0.02	0.08
16-V-11	FWP 16-P-11 Diesel Tank	VOC	0.03	<0.01
16-V-12	FWP 16-P-12 Diesel Tank	VOC	0.03	<0.01
16-V-13	FWP 16-P-13 Diesel Tank	VOC	0.03	<0.01
16-V-14	FWP 16-P-14 Diesel Tank	VOC	0.03	<0.01
FWP-FUG	Firewater Pump Engine Fugitives	VOC	0.06	0.26
30-B-05	Boiler 30-B-05	CO	33.48	70.84
		NH_3	2.18	8.68
		NO_x	7.16	30.14
		PM	3.56	14.16
		PM_{10}	3.56	14.16
		$PM_{2.5}$	3.56	14.16
		SO_2	11.56	38.06
		H_2S	<0.01	<0.01
		VOC	2.81	11.30
30-B-05	Boiler 30-B-05 (MSS)	NO_x	71.61	--
HOC-PP-CT	Cooling Tower-Propylene Project	PM	0.78	3.42
		PM_{10}	0.18	0.81
		$PM_{2.5}$	<0.01	0.01
		VOC	1.09	4.78
CAS-HOCPP	HOC PP Gas Plant CAS	VOC	<0.01	0.02

Emission Sources - Maximum Allowable Emission Rates

(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) Cl_2 - chlorine
CO - carbon monoxide
HCN - hydrogen cyanide
HF - hydrogen fluoride
H_2S - hydrogen sulfide
H_2SO_4 - sulfuric acid
MSS - Maintenance, Startup and Shutdown
NH_3 - ammonia
NO_x - total oxides of nitrogen
PM - total particulate matter, suspended in the atmosphere, including PM_{10} and $PM_{2.5}$, as represented
PM_{10} - total particulate matter equal to or less than 10 microns in diameter, including $PM_{2.5}$, as represented
$PM_{2.5}$ - particulate matter equal to or less than 2.5 microns in diameter
SO_2 - sulfur dioxide
VOC - volatile organic compounds as defined in Title 30 Texas Administrative Code § 101.1
(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.

Date: TBD

Emission Sources - Maximum Allowable Emission Rates

Permit Number GHGPSDTX211

This table lists the maximum allowable emission rates of greenhouse gas (GHG) emissions, as defined in Title 30 Texas Administrative Code § 101.1, for all sources of GHG air contaminants on the applicant's property that are authorized 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 authorized by this permit.

Air Contaminants Data

Emission Point No. (1)	**Source Name (2)**	**Air Contaminant Name (3)**	**Emission Rates**
			TPY (4)
121	HOC Belco Scrubber	CO_2 (5)	2,451,673.00
		CH_4 (5)	72.08
		N_2O (5)	14.42
		CO_2e	2,457,772.00
Various (FUG-CAP)	Fugitives Subcap	CH_4 (5)	3.59
		CO_2e	90.00
30-B-05	Boiler 30-B-05	CO_2 (5)	222,364.00
		CH_4 (5)	4.19
		N_2O (5)	0.42
		CO_2e	22,594.00

(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) CO_2 - carbon dioxide
N_2O - nitrous oxide
CH_4 - methane
CO_2e - carbon dioxide equivalents based on the following Global Warming Potentials (1/2015): CO_2 (1), N_2O (298), CH_4(25)
(4) Compliance with annual emission limits (tons per year) is based on a 12-month rolling period. These rates include emissions from maintenance, startup, and shutdown.
(5) Emission rate is given for informational purposes only and does not constitute enforceable limit.

Date: TBD

From:	Marquard, Meagan
To:	Cara Hill
Cc:	Arnosky, David; Joe Kupper; Almaraz, Aimee; R6AirPermitsTX@epa.gov; Kelly Ruble; Jeff Saitas
Subject:	Permit 38754 Valero HOC Project NOD & AQA Response
Date:	Friday, April 8, 2022 1:17:18 PM
Attachments:	Response TCEQ"s 03-11-2022 AQA (Permit# 38754) Request for Additional.pdf

Cara,

The attached letter addresses the comment and questions related to the Air Quality Analysis. The following address your three questions in your letter dated 4/1/2022:

1. *The application states that process vessel purge gases will be routed to one of three West Plant flares. Please provide clarification as to which three flares the purge gases will be routed to (EPN and source name).*

RESPONSE: The gases from process units associated with the proposed project will be routed to the Main Flare (EPN 126) and/or the Ground Flare (EPN 158). The project emissions were modeled from EPN 158 since it has a lower release height and Unit Impact modeling determined that EPN 158 results in maximum off-property concentrations.

2. *The PSD Increment modeling section of the AQA states that the short-term PM2.5 emission rate increase for Model IDs 153 and 163 are calculated by subtracting the 2008/2009 average annual emission rate from the permit allowable emission rate and converting to a pound per hour emission rate. The short-term emission rates should be based on the worst-case hourly emissions. Please either provide a correction to the short-term rates or provide clarification as to why using annual emissions to determine the short-term rate is appropriate for these facilities.*

RESPONSE: The use of actual annual emission rates for determining the emission rate increase is conservative because the annual emissions converted to an equivalent average pounds per hour rate results in a lower rate than the maximum rate that would have occurred during the same two-year period. Subtracting a lower value from the allowable emission rates results in a higher emission increase for the modeling. This approach is described on page 15 of the Air Quality Guidelines (APDG 6232) as follows:

> ***If the applicant has data on actual short-term emission rates, then these data can be used to determine representative short-term emission rates over the appropriate averaging time period. If these data are not available, the short-term emission rates can be derived from the actual annual emission rates. Using the derived short-term emission rates may result in larger emission rates to model, which is a reasonable approach.***

3. *In the previous NOD, justification as to why the proposed boiler (EPN 30-B-5) would be unable to meet the routine hourly CO emission rate during MSS was requested. The response indicated that the Diamond Green Diesel plant (Project 312721) had separate startup mass emission rate limits on the MAERT, and it would be appropriate to have similar emission*

limits on the MAERT. While a higher performance limit (lb/MMBtu) during start-up is allowed, the routine hourly CO emission rate is expected to be met during start-up despite the firing rate. Generally, the boiler should be operated in a manner such that the firing rate is increasing while the CO emissions are decreasing, and the hourly rates are not exceeded. Please provide technical justification as to why this boiler would be unable to meet the routine hourly CO emission rate during MSS. A statement referencing another permit is not sufficient to justify the proposed emission rate.

RESPONSE: After further review, Valero agrees that the routine hourly CO mass emission limit is not expected to be exceeded during the start-up of Boiler 30-B-05; therefore, the higher MSS mass rate is not needed for the MAERT.

Meagan Marquard
Superintendent Environmental
Valero - Bill Greehey Refineries
Office: (361) 299-8913
Mobile: (520) 249-5349

Trinity Consultants
9737 Great Hill Trail, Ste 340, Austin, TX 78759 / P 512.693.4186 / trinityconsultants.com

April 7, 2022

Via Email

Mr. Justin Cherry
Air Permits Division - MC 163
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, Texas 78711-3087

Re: Permit Application
Permit Numbers: 138754, PSDTX324M15, and GHGPSDTX211
Valero Corpus Christi Refinery West Plant
Corpus Christi, Nueces County
Regulated Entity Number: RN100214386
Customer Reference Number: CN600127468

Dear Justin:

Please find the additional information requested in your email dated March 11, 2022, regarding the air quality analysis (AQA) supporting the permit application for the Valero Refining-Texas L.P. Heavy Oil Cracker (HOC) Unit Reconfiguration Project at the Corpus Christi West Plant.

RESPONSE TO MODELING NOD QUESTIONS

1. *Please note that the SO_2 annual emissions for Model ID MSSFLR was not reported. Please provide this information for review.*

Response: The SO_2 annual emissions for Model ID MSSFLR are shown on the second page of Table 4-5 in the AQA report (MSSFLR = 19.48 tpy).

2. *For H2S modeling, emissions were reported for Model ID 126 but not modeled. Emissions were modeled for Model ID 158 but not reported. Please address these discrepancies.*

Response: The reported and modeled rates are correct. The H_2S emissions are shown on Table 4-4 of the AQA report. The emissions shown for the combined cells of EPN MSS Caps include the three flares: 126, 127, and 158. Per footnote 1 on Table 4-4, the unit impact for flare 158 was the maximum unit impact among the three flares; therefore, flare 158 used as the worst-case flares in the project modeling.

3. *1-hr UIMs reported for Model IDs 126, 127, and 158 are inconsistent with the modeling output file. 1-hr UIM reported for Model ID HOCPPCT in the AQA is inconsistent with the modeling output file but is consistent with the reported value in the EMEW. Please address these discrepancies and update the health effects review as applicable.*

Response: The model results are correct. The results have been updated on the AQA Table 6-4 and in the EMEW, as applicable. The updated table and EMEW are included with this submittal.

4. *The 24-hr PM_{10} modeling reported impacts for each individual source but did not address the overall impact. Unless these sources do not operate simultaneously, the applicant will need to update the modeling to determine the overall impact. Please address.*

Response: The model has been rerun to include the "ALL" source group. The updated results are still below the significant impact level (SIL); therefore, no further modeling is required. An updated results Table 6-1 and the updated model files are included with this submittal.

5. *Please demonstrate how the selected criteria (i.e. source emissions and heights) are representative of the project sources for the MERPs demonstrations.*

Response: The majority of project emissions are from EPN: 121 and this stack is 225 ft tall. The emissions characteristics of the Valero site include dense industry along an industrial ship channel. The chemical (dense industry) and physical (urban area; coastal influence) characteristics in the vicinity of the hypothetical Harris County sources modeled by the EPA are conservatively representative of the project site. For these reasons, it is appropriate to use the MERPs selected for this analysis.

6. *Related to item 5, the reported 24-hr and annual NO2 and 24-hr SO2 MERPs in the AQA are inconsistent with the MERPs in Appendix R of the TCEQ's modeling guidelines (APDG 6232). In addition, the annual NO2 MERP was used for the 24-hr SO2 MERP in the AQA calculation. The reported VOC MERP in the AQA is inconsistent with the MERP in Appendix S of the TCEQ's modeling guidelines. Please address these discrepancies.*

Response: The MERPs used in the secondary analysis are the most current MERPs available from the EPA's database located at the following URL: https://www.epa.gov/scram/merps-view-qlik

The report values were compared to the EPA data summarized below and all values used in the Secondary Impact Analysis on Table 4-6 are correct.

State	County	Metric	Precursor	Emissions	Stack	**MERP**	MaxConc
Texas	Harris	8-hr Ozone	NOx	500	90	**639**	0.782070756
Texas	Harris	8-hr Ozone	VOC	1000	90	**3817**	0.261975378
Texas	Harris	Annual PM2.5	NOx	500	90	**47789**	0.002092538
Texas	Harris	Annual PM2.5	SO2	500	90	**10387**	0.009626963
Texas	Harris	Daily PM2.5	NOx	500	90	**15274**	0.039282899
Texas	Harris	Daily PM2.5	SO2	500	90	**1493**	0.401878923

The 24-hr SO2 MERP has been corrected on the attached revised Table 4-6.

7. *Based on the ADMT's review, the applicant may need to reevaluate the annual PM2.5 increment once secondary formation of PM2.5 is updated and combined with the direct impacts.*

Response: Based on the revised 24-hour secondary impact, revised receptor grids were determined for use in revised full 24-hour $PM_{2.5}$ NAAQS and PSD Increment modeling.

8. *As noted in the protocol, the ADMT's review of PM2.5 monitoring data was different than what the applicant reported. Please provide the monitoring data that was used to support the values utilized by the applicant.*

Response: The monitoring data from the Donna Park ambient monitor is summarized in the workbook "*PM2.5 2018-2020 Donna Park.xlsx*", which is provided with this submittal.

During the data collection, several severe Saharan Dust events occurred and were captured in the PM data recorded at the Donna Park monitor (and many monitors along the coast of Texas and inland). The EPA's 2019 memo[1], *Additional Methods, Determinations, and Analyses to Modify Air Quality Data Beyond Exceptional Events*, addresses situations where ambient data may be excluded, selected, or adjusted. The memo lists the most common determinations and analyses not covered by the Exceptional Events Rule and clarifies for each whether there is a separate existing mechanism (apart from the Exceptional Events Rule) under which the exclusion, selection, or adjustment of air quality monitoring data may be appropriate. The memo specifically identifies AQA's being prepared in support of a PSD permit application as one type of analysis for which exclusion, selection, or adjustment may be allowed. Table 1 of the memo clearly notes that ambient data not representative to characterize the background concentration for use in a NAAQS analysis may be excluded. This includes data "influenced by an atypical, extreme, or unrepresentative event". For this AQA, the two severe Saharan dust episodes were identified and excluded from the ambient data.

The first event occurred from late June to early July of 2018. On data source[1] notes that "a very significant extent of Saharan dust was evident in satellite imagery covering much of the Atlantic south of 25N and extending to the west over Puerto Rico, Hispaniola, and at least the eastern portion of Cuba. The dust also covers most of the Caribbean south of Cuba and stretches to the west into a portion of Central America and eastern Mexico and over the southern and western part of the Gulf of Mexico reaching as far west as southern and southeastern Texas."

An additional reference[2] notes that dust "from Africa impacted southeast Texas 6/30-7/1, 7/15-16, and 8/12-13 and probably a number of other days in 2018. These days represent 28 of the 32 high $PM_{2.5}$ measurements that the TCEQ reports each year on their website. These 32 measurements represent the four highest $PM_{2.5}$ daily averages at each of their monitoring sites with continuous $PM_{2.5}$ measurements." Note that additional days could likely be excluded, if necessary, for a future analysis.

The second event occurred from late June to early July of 2020. The EPA's AirNow data[3] shows the high $PM_{2.5}$ values along the gulf coast with unhealthy air quality index starting on June 26 and remaining in the

[1] https://www.ssd.noaa.gov/PS/FIRE/DATA/SMOKE/2018/2018F291720.html

[2] https://www.airqualityhouston.com/air-quality-highlight-the-success-story

[3] https://gispub.epa.gov/airnow/index.html?tab=3&monitors=pm25&showlegend=yes&archivedates=06/26/2020, https://gispub.epa.gov/airnow/index.html?tab=3&monitors=pm25&showlegend=yes&archivedates=06/27/2020

unhealthy category through June 27th. The TCEQ's air quality reports mention the presence of African dust through July 2nd, when they note that "moderate to heavy amounts of African dust will continue from the slightly more intense dust cloud on Wednesday, with the heaviest intensities along the coastal bend of Texas as well as in Southeast and East Texas." Several additional references documenting the event are provided in the monitoring data spreadsheet, "*PM2.5 2018-2020 Donna Park.xlsx*", provided with this submittal (see column AB of the "*2020 DP EPA AirDataPM2.5*" tab.

The "*PM2.5 2018-2020 Donna Park.xlsx*" spreadsheet provided with this submittal documents the details of the hourly data and the specific events that were excluded, as well as the newly calculated 98th percentile and annual average values used in this AQA.

It should also be noted that this monitor is located less than one mile from the site and the surrounding industrial sources are also explicitly included in the model, which means the emissions in the area are being double-counted (modeled and added in the ambient data); therefore, this is a very conservative NAAQS analysis.

9. *For the SO2 pre-application analysis, the applicant only addressed the 1-hr and 24-hr averaging times. Please address the 3-hr and annual averaging times as well.*

Response: Conservatively applying the 1-hour (14.5 mg/m^3) and 24-hour (3.1 mg/m^3) SO_2 ambient data provided in the AQA to the 3-hr and annual pre-application analyses, respectively, results in the demonstration that existing data is available and less than the NAAQS for all averaging periods.

Averaging Period: Ambient Data < NAAQS Value
3-hr: 14.5 mg/m^3 < 1,300 mg/m^3
Annual: 3.1 mg/m^3 < 80 mg/m^3

10. *Several of the reported tier heights for the buildings in the EMEW are inconsistent with the modeled tier heights. Please address these discrepancies.*

Response: The tank heights were inadvertently entered in the EMEW for both height and diameter. The EMEW has been updated with the correct diameter information and is provided with this submittal.

One building height was not consistent across all the model runs (BLDG14 height = 34 m). This discrepancy has been addressed and the updated modeling files are included with this submittal along with the updated EMEW and results tables. The modeling results did not change significantly, and many decreased with this update. The sitewide SO2 SPL model run was correct; therefore, no updated modeling is provided for this analysis.

The revised EMEW, "*PM2.5 2018-2020 Donna Park.xlsx*" spreadsheet, and modeling files, will be uploaded to the TCEQ ftp site and will be shared with you. If you have any questions or comments about the information presented in this letter, please do not hesitate to call me at 512.693.4186.

Sincerely,

Joe M. Kupper
Principal Consultant

Enclosures

cc: Air Section Manager, Region 14 – Corpus Christi (via email)
Air Permits Section Chief, New Source Review Section (6PD-R), U.S. Environmental Protection Agency, Region 6, Dallas (via email)

Table 4-6 *Updated April 7, 2022*

Secondary Impact Analysis

HOC Reconfiguration Project

Valero Refining - Texas - West Plant Refinery, Corpus Christi

Ozone

Averaging Period	NOx Increase (tpy)		NOx MERP (tpy)				VOC Increase (tpy)		VOC MERP (tpy)				Preliminary Impact
8-Hour	252.34	/	639	=	0.39	+	81.2	/	3817	=	0.02	=	0.42

	Preliminary Impact	
8-Hour	0.42	Result is less than 1 - Cumulative impact is not required

PM2.5 - NAAQS

Averaging Period	Direct PM2.5 Impact (µg/m3)		PM2.5 SIL (µg/m3)		PM2.5		NOx Increase (tpy)		NOx MERP (tpy)		NOx		SO2 Increase (tpy)		SO2 MERP (tpy)		SO2		Preliminary Impact
24-Hour	4.0	/	1.2	=	3.33	+	252.34	/	15274	=	0.02	+	428.23	/	1,493	=	0.29	=	3.64
Annual	0.8	/	0.2	=	4.05	+	252.34	/	47789	=	0.005	+	428.23	/	10387	=	0.041	=	4.09

	Preliminary Impact	
24-Hour	3.64	Result is greater than 1 - Cumulative impact is required
Annual	4.09	Result is greater than 1 - Cumulative impact is required

Secondary Value used for Cumulative Analysis

Averaging Period	NOx Increase (tpy)		NOx MERP (tpy)		NOx		SO2 Increase (tpy)		SO2 MERP (tpy)		SO2				PM2.5 SIL (µg/m3)		
24-Hour	252.34	/	15,274	=	0.02	+	428.23	/	1,493	=	0.29	=	0.30	*	1.2	=	0.36
Annual	252.34	/	47,789	=	0.01	+	428.23	/	10,387	=	0.04	=	0.05	*	0.2	=	0.009

Table 4-6

Secondary Impact Analysis

HOC Reconfiguration Project

Valero Refining - Texas - West Plant Refinery, Corpus Christi

Updated April 7, 2022

PM2.5 - Increment

Averaging Period	Direct PM2.5 Impact (µg/m3)		PM2.5 SIL (µg/m3)		PM2.5		NOx Increase (tpy)		NOx MERP (tpy)		NOx		SO2 Increase (tpy)		SO2 MERP (tpy)		SO2		Preliminary Impact
24-Hour	4.82	/	1.2	=	4.01	+	252.34	/	15274	=	0.02	+	428.23	/	1493	=	0.29	=	4.32
Annual	0.89	/	0.2	=	4.47	+	252.34	/	47789	=	0.01	+	428.23	/	10387	=	0.04	=	4.52

	Preliminary Impact	
24-Hour	4.32	Result is greater than 1 - Cumulative impact is required
Annual	4.52	Result is greater than 1 - Cumulative impact is required

Secondary Value used for Cumulative Analysis

Averaging Period	NOx Increase (tpy)		NOx MERP (tpy)		NOx		SO2 Increase (tpy)		SO2 MERP (tpy)		SO2				PM2.5 SIL (µg/m3)		
24-Hour	252.34	/	15,274	=	0.02	+	428.23	/	1,493	=	0.29	=	0.30	*	1.2	=	0.36
Annual	252.34	/	47,789	=	0.01	+	428.23	/	10,387	=	0.04	=	0.05	*	0.2	=	0.009

MERP Values and Basis

	Ozone		24-Hour PM2.5		Annual PM2.5	
	NOX	VOC	NOX	SO2	NOX	SO2
MERP (tpy):	639	3,817	15,274	1,493	47,789	10,387
Basis:	Harris County 500 tpy High	Harris County 1000 tpy High	Harris County 500 tpy High	Harris County 500 tpy High	Harris County 500 tpy High	Harris County 500 tpy High

Table 6-1

Updated April 7, 2022

Significant Impact Analysis Modeling Results

HOC Reconfiguration Project

Valero Refining - Texas - West Plant Refinery, Corpus Christi

Constituent and Analysis	Averaging Period	Meteorological Data Years	Significant Impact Level (SIL) (Deminimis)	Significant Monitoring Concentration (SMC)	Project GLCmax	Secondary $PM_{2.5}$	Total Project GLCmax[1]	Is Project Greater than SIL?	Is Project Greater than SMC?
			µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	yes/no	yes/no
Nitrogen Dioxide (NO_2) NAAQS	1-Hour	2014-2018	7.5	---	30.2	---	30.2	Yes	No
NO_2 NAAQS and PSD Increment	Annual	2014	1.0	14	1.8	---	1.8	Yes	No
		2015	1.0	14	1.7	---	1.7	Yes	No
		2016	1.0	14	1.5	---	1.5	Yes	No
		2017	1.0	14	1.7	---	1.7	Yes	No
		2018	1.0	14	1.8	---	1.8	Yes	No
Carbon Monoxide (CO) NAAQS	1-Hour	2014-2018	2000	---	361.9	---	361.9	No	No
	8-Hour	2014-2018	500	575	319.2	---	319.2	No	No
PM_{10} NAAQS and PSD Increment	24-Hour	2014-2018	5	10	4.8	---	4.8	No	No
PM_{10} PSD Increment	Annual	2014	1	---	0.8	---	0.8	No	No
		2015	1	---	0.8	---	0.8	No	No
		2016	1	---	0.7	---	0.7	No	No
		2017	1	---	0.8	---	0.8	No	No
		2018	1	---	0.9	---	0.9	No	No
$PM_{2.5}$ NAAQS	1-Hour	2014-2018	1.2	---	4.0	0.36	4.4	Yes	No
	Annual	2014-2018	0.2	---	0.8	0.01	0.8	Yes	No

Table 6-1

Significant Impact Analysis Modeling Results

HOC Reconfiguration Project

Valero Refining - Texas - West Plant Refinery, Corpus Christi

Updated April 7, 2022

Constituent and Analysis	Averaging Period	Meteorological Data Years	Significant Impact Level (SIL) (Deminimis)	Significant Monitoring Concentration (SMC)	Project GLCmax	Secondary $PM_{2.5}$	Total Project GLCmax[1]	Is Project Greater than SIL?	Is Project Greater than SMC?
			µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	yes/no	yes/no
$PM_{2.5}$ PSD Increment	1-Hour	2014	1.2	—	3.4	0.36	3.8	Yes	No
		2015	1.2	—	4.7	0.36	5.1	Yes	No
		2016	1.2	—	4.3	0.36	4.6	Yes	No
		2017	1.2	—	3.8	0.36	4.2	Yes	No
		2018	1.2	—	4.3	0.36	4.7	Yes	No
	Annual	2014	0.2	—	0.8	0.01	0.8	Yes	No
		2015	0.2	—	0.8	0.01	0.8	Yes	No
		2016	0.2	—	0.7	0.01	0.7	Yes	No
		2017	0.2	—	0.8	0.01	0.8	Yes	No
		2018	0.2	—	0.9	0.01	0.9	Yes	No
Sulfur Dioxide (SO_2) State Property Line	30-min	2014-2018	20.42	—	21.1	—	21.1	Yes	No
SO_2 NAAQS	1-Hour	2014-2018	7.8	—	20.1	—	20.1	Yes	No
SO_2 NAAQS and PSD Increment	3-Hour	2014-2018	25	—	20.2	—	20.2	No	No
SO_2 PSD Increment	24-Hour	2014-2018	5	13	15.52	—	15.52	Yes	Yes
	Annual	2014	1	—	1.7	—	1.7	Yes	No
		2015	1	—	1.7	—	1.7	Yes	No
		2016	1	—	1.5	—	1.5	Yes	No
		2017	1	—	1.6	—	1.6	Yes	No
		2018	1	—	1.8	—	1.8	Yes	No

Table 6-1

Significant Impact Analysis Modeling Results

Updated April 7, 2022

HOC Reconfiguration Project

Valero Refining - Texas - West Plant Refinery, Corpus Christi

Constituent and Analysis	Averaging Period	Meteorological Data Years	Significant Impact Level (SIL) (Deminimis)	Significant Monitoring Concentration (SMC)	Project GLCmax	Secondary $PM_{2.5}$	Total Project GLCmax[1]	Is Project Greater than SIL?	Is Project Greater than SMC?
			μg/m³	μg/m³	μg/m³	μg/m³	μg/m³	yes/no	yes/no
Hydrogen Sulfide (H_2S) State Property Line	30-min (Residential)	2016	2.16	---	0.4	---	0.4	No	No
	30-min (Industrial)	2016	3.24	---	0.4	---	0.4	No	No
Sulfuric Acid (H_2SO_4) State Property Line	1-Hour	2016	1	---	6.7	---	6.7	**Yes**	No
	24-Hour	2016	0.3	---	2.5	---	2.5	**Yes**	No

[1] The "Total GLCmax" is the maximum ground-level concentration from modeling the project emissions (i.e., "Project GLCmax") for all constituents, except $PM_{2.5}$. For $PM_{2.5}$, the "Total GLCmax" is the "Project GLCmax" plus the "Secondary PM2.5" contribution.

Table 6-2

NAAQS and State Property Line Modeling Results

HOC Reconfiguration Project

Valero Refining - Texas - West Plant Refinery, Corpus Christi

Updated April 7, 2022

Constituent	Averaging Period	Meteorological Data Years	Site-wide plus Off-Property GLCmax [1]	Secondary $PM_{2.5}$	Background Concentration	Total GLCmax [2]	Standard	Is Project Greater than Standard?
			µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	yes/no
Nitrogen Dioxide (NO_2)	1-Hour	2014-2018	120.8	---	33.9	154.7	188	No
	Annual	2014	16.2	---	4.5	20.8	100	No
		2015	16.5	---	4.5	21.0	100	No
		2016	16.2	---	4.5	20.7	100	No
		2017	16.6	---	4.5	21.1	100	No
		2018	16.7	---	4.5	21.2	100	No
$PM_{2.5}$	24-Hour	2014-2018	14.7	0.03	19.6	34.4	35	No
	Annual	2014-2018	3.5	0.01	7.7	11.3	12	No
Sulfur Dioxide (SO_2)	30-minute	2014-2018	182.9	---	---	182.9	1021	No
	1-Hour	2014-2018	151.0	---	14.5	165.4	196	No
Sulfuric Acid (H_2SO_4)	1-Hour	2016	8.5	---	---	8.5	50	No
	24-Hour	2016	3.1	---	---	3.1	15	No

[1] The "Site-wide plus Off-Property GLCmax" is the maximum modeled concentration from the site-wide emissions plus the off-property emissions inventory for all constituents and averaging periods, except the 30-minute SO_2 and 1-hour and 24-hour H_2SO_4 State Property Line analyses. These analyses only include the site-wide emissions (i.e., no off-property sources or background concentrations are added).

[2] The "Total GLCmax" is the sum of the "Site-wide plus Off-Property GLCmax" plus the "Secondary $PM_{2.5}$", where applicable, plus the "Background Concentration".

Table 6-3

PSD Increment Results

HOC Reconfiguration Project

Valero Refining - Texas - West Plant Refinery, Corpus Christi

Updated April 7, 2022

Constituent	Averaging Period	Meteorological Data Years	Site-wide plus Off-property GLCmax	Secondary $PM_{2.5}$	Total GLCmax[1]	PSD Increment	Is GLCmax Greater than PSD Increment?
			µg/m^3	µg/m^3	µg/m^3	µg/m^3	yes/no
Nitrogen Dioxide (NO_2)	Annual [2]	2014	16.2	---	16.2	25	No
		2015	16.5	---	16.5	25	No
		2016	16.2	---	16.2	25	No
		2017	16.6	---	16.6	25	No
		2018	16.7	---	16.7	25	No
$PM_{2.5}$	24-Hour	2014	7.6	0.03	7.6	9	No
		2015	7.9	0.03	7.9	9	No
		2016	8.4	0.03	8.4	9	No
		2017	8.6	0.03	8.6	9	No
		2018	8.2	0.03	8.2	9	No
	Annual	2014	2.8	0.01	2.8	4	No
		2015	2.9	0.01	2.9	4	No
		2016	2.8	0.01	2.8	4	No
		2017	2.9	0.01	2.9	4	No
		2018	2.8	0.01	2.8	4	No
Sulfur Dioxide (SO_2)	24-Hour	2014-2018	70.6	---	70.6	91	No
	Annual	2014	10.3	---	10.3	20	No
		2015	10.8	---	10.8	20	No
		2016	10.8	---	10.8	20	No
		2017	10.9	---	10.9	20	No
		2018	11.0	---	11.0	20	No

[1] The "Total GLCmax" is the maximum ground-level concentration from the modeling of the project emissions (i.e., "Project GLCmax") for all constituents, except $PM_{2.5}$. For $PM_{2.5}$, the "Total GLCmax" is the "Project GLCmax" plus the "Secondary PM2.5" contribution.

[2] The NAAQS results for annual NO2 were conservatively used to demonstrate compliance with the annual PSD Increemnt for NO2.

Table 6-4

MERA Step 3

HOC Reconfiguration Project

Valero Refining - Texas - West Plant Refinery, Corpus Christi

Updated April 7, 2022

Component Name	CAS#	1-hour ESL	Annual ESL	Is Annual Review Required?								GLCmax [1]	% of ESL	Is GLCmax < 10% of ESL
					Unit Impact Multiplier ($\mu g/m^3$ per lb/hr) >>>	1.733	0.125	27.837	7.181	0.125	28.968			
					EPN >>	30-B-05	121	FUG-CAP	HOC-PP-CT	121/30-B-05	CAS-HOCPP			
					Model ID >>	30_B_05	121HOC	FUGCAP	HOCPPCT	121HOC	CASHOCPP			
		$\mu g/m^3$	$\mu g/m^3$	yes/no		lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	$\mu g/m^3$		yes/no
Ammonia (NH_3)	7664-41-7	180	92	no		2.2	4.8	0.01	-	-	-	4.7	2.6%	yes
Refinery Lights (distillates (petroleum), light catalytic cracked)	64741-59-9	3,500	350	no		-	-	6.7	1.09	0.24	0.005	194.5	5.6%	yes

[1] The "GLCmax" is the sum of the individual unit impact multiplier times the constituent specific emission rate for each source.

Prevention of Significant Deterioration Permit Application

TCEQ Air Quality Permit Nos. 38754, PSDTX324M14
HOC Reconfiguration Project

See Electronic File Entitled:

"2022.04.08 Electronic Files.zip"

From:	Joe Kupper
To:	Justin Cherry
Cc:	Cara Hill; Chad Dumas; Meagan.Marquard@valero.com; "Arnosky, David (David.Arnosky@valero.com)"; Beth Echels
Subject:	RE: Valero Refining-Texas LP AQA (Permit# 38754) Second Request for Additional Information
Date:	Tuesday, April 12, 2022 2:13:00 PM
Attachments:	image001.png EMEW Valero West Plant HOC 38754 04-12-2022.xlsx 2019-2021 PM2.5 Ambient Data Donna Park.xlsx

Justin,

Responses to your questions are shown below. Please let me know if you have nay questions

Thanks, Joe

Joe Kupper, P.E.
Principal Consultant

9737 Great Hills Trail, Suite 340 Austin, TX 78759
P 512.693.4186 M 512.940.5516
Email: joe.kupper@trinityconsultants.com

A picture containing icon Description automatically generated

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From: Justin Cherry <justin.cherry@tceq.texas.gov>
Sent: Tuesday, April 12, 2022 6:47 AM
To: Joe Kupper <Joe.Kupper@trinityconsultants.com>
Cc: Cara Hill <Cara.Hill@Tceq.Texas.Gov>; Chad Dumas <Chad.Dumas@Tceq.Texas.Gov>
Subject: Valero Refining-Texas LP AQA (Permit# 38754) Second Request for Additional Information

Hey Joe,

The ADMT has some follow up items that need to be addressed before we can complete our review. Please address the following:

1. The release height and sigma z for Model ID CASHOCPP are reported as 4.57 meters and 4.25 meters, respectively but was modeled at 1.52 meters and 0.71 meters, respectively. Please address these discrepancies.

RESPONSE: The modeled values are correct. An updated EMEW is attached.

2. Please provide the calculations for the annual PM2.5 monitoring data.

RESPONSE: The annual average calculation has been added to the attached spreadsheet, "2019-2021 PM2.5 Ambient Data Donna Park.xlsx".

3. Although it doesn't change the overall conclusions, the reported 1-hr ammonia GLCmax is inconsistent with the ADMT's calculation. Please verify the 1-hr ammonia GLCmax.

RESPONSE: The Excel formulas (using SUMPRODCUT function) were checked and the results are the same as previously reported. The following shows the individual products of the emission rate * unit impact for each source and the sum of those products – this results is the same as previously reported.

	Emission Rate	Unit Impact	Product of Emission Rate * Unit Impact	
	lb/hr	mg/m^3 per lb/hr	mg/m^3	
30_B_05	2.18	1.73289	3.7777	
121HOC	4.84	0.12454	0.602774	
FUGCAP	0.01	27.83707	0.278371	
		TOTAL =	**4.658845**	**mg/m^3**

Failure to submit all of the requested information within 7 business days of the date of this notification will delay the technical review of your application.

Feel free to contact me if you require any clarification or have any questions.

Thanks,
justin

Justin Cherry, P.E.
TCEQ
Air Permits Division
Air Dispersion Modeling Team
512-239-0955

Texas Commission on Environmental Quality
Electronic Modeling Evaluation Workbook (EMEW)
General

EMEW Version No.: Version 2.3

Purpose Statement:
This workbook is completed by the applicant and submitted to the Texas Commission on Environmental Quality (TCEQ), specifically, the Air Dispersion Modeling Team (ADMT) for review. This workbook is a tool available for all projects using AERSCREEN, AERMOD, or ISC/ISCPrime for an impacts review and its use is required starting June 1, 2019. Provide the workbook with the permit application submittal for any Minor New Source Review project requiring a modeling impacts demonstration.

This workbook follows the guidance outlined in the Air Quality Modeling Guidelines (APDG 6232) which can be found here:
https://www.tceq.texas.gov/assets/public/permitting/air/Modeling/guidance/airquality-mod-guidelines6232.pdf

Workbook Instructions:
1. Save a copy of the workbook to your computer or desktop prior to entering data.
2. Complete all required sections leaving no blanks. You may use the "tab" button or the arrow keys to move to the next available cell. Use "enter" to move down a line. Note: drop-downs are case-sensitive.
3. Fill in the workbook in order, do not skip around as this will cause errors. Use caution if changing a previously entered entry.
4. Not applicable sections of this workbook will be hidden as data is entered. For example, answering "No" to "Is downwash applicable? " will hide these sections of the workbook required only for downwash entry.
5. Email the workbook electronic file (EMEW) and any attachments to the Air Permits Initial Review Team. The subject line should read "Company Name - Permit Number (if known) - NSR Permit Application". Email address: apirt@tceq.texas.gov
6. If printing the EMEW, follow the directions below to create a workbook header.
7. Printing the EMEW is not required for submitting to the Air Permits Division (APD); however, you may need to print it for sending to the regional offices, local programs, and for public access if notice is required. To print the workbook, follow the instructions below. Please be aware, several sheets contain large amounts of data and caution should be taken if printing, such as the Speciated Emissions sheet.
8. Updates may be necessary throughout the review process. Updated workbooks must be submitted in electronic format to APD. For submittal to regional offices, local programs, or public places you only have to print sheets that had updates. Be sure to change the headers accordingly.

Note: Since this will be part of the permit application, follow the instructions in the Form PI-1 General Application on where to send copies of your EMEW and permit application. The Form PI-1 General Application can be found here:
https://www.tceq.texas.gov/permitting/air/guidance/newsourcereview/nsrapp-tools.html

Create Headers Before Printing:
1. Right-click one of the workbook's sheet tabs and "Select All Sheets."
2. Enter the "Page Layout View" by using the navigation ribbon's View > Workbook Views > Page Layout, or by clicking the page layout icon in the lower-right corner of Excel.
3. Add the date, company name, and permit number (if known) to the upper-right header. Note that this may take up to a minute to update your spreadsheet. Select any tab to continue working on the spreadsheet.

Printing Tips:
While APD does not need a hard copy of the full workbook, you may need to print it for sending to the regional offices, local programs, and for public access if notice is required.
1. The default printing setup for each sheet in the workbook is set for the TCEQ preferred format. The print areas are set up to not include the instructions on each sheet.
2. You have access to change all printing settings to fit your needs and printed font size. Some common options include:
   - Change what area you are printing (whole active sheet or a selection);
   - Change the orientation (portrait or landscape);
   - Change the margin size; and
   - Change the scaling (all columns on one sheet, full size, your own custom selection, etc.).

VAL_000583

Texas Commission on Environmental Quality
Electronic Modeling Evaluation Workbook (EMEW)
General

Final Modeling Submittal:
Anytime final modeling files are being submitted the applicant should notify the following that modeling files are being sent: permit reviewer assigned, permit reviewer's supervisor, and the modeler assigned from the initial submittal.
The following options are available for an applicant to provide modeling (or any other files):
1. Applicant can mail or hand deliver the files on an external storage device.
2. Applicant can email files smaller than 25mb.
3. Applicant can transfer files through an FTP site:
   a. Applicant may have their own FTP site and can share the files with TCEQ staff.
   b. Applicants can use the TCEQ FTP site.

Instructions for setting up an account on the TCEQ FTP site are located at:
https://ftps.tceq.texas.gov/help/

Texas Commission on Environmental Quality

Date: March 25, 2022

Permit #s: 38754

Company Name: Valero Refining Company - Texas LP

Electronic Modeling Evaluation Workbook (EMEW)

General

Acknowledgement:	Select from the drop down:
I acknowledge that I am submitting an authorized TCEQ Electronic Modeling Evaluation Workbook and any necessary attachments. Except for inputting the requested data, I have not changed the TCEQ Electronic Modeling Evaluation Workbook in any way, including but not limited to changing formulas, formatting, content, or protections.	I agree

Administrative Information:	
Data Type:	**Facility Information:**
Project Number (6 digits):	333877
Permit Number:	38754
Regulated Entity ID (9 digits):	100214386
Facility Name:	Valero Corpus Christi Refinery West Plant
Facility Address:	5400 Up River Rd Corpus Christi, TX 78407
Facility County (select one):	Nueces
Company Name:	Valero Refining - Texas, L.P.
Company Contact Name:	Ms. Meagan Marquard
Company Contact Number:	(361) 299-8913
Company Contact Email:	Meagan.Marquard@valero.com
Modeling Company Name, as applicable:	DiSorbo Consulting, LLC
Modeling Contact Name:	Joe Kupper, P.E.
Modeling Contact Number:	(512) 693-4186
Modeling Contact Email:	jkupper@disorboconsult.com
New/Existing Site (select one):	Existing Site
Modeling Date (MM/DD/YYYY):	3/25/2022
Datum Used (select one):	NAD 83
UTM Zone (select one):	14

Sheet Instructions: Indicate in the Table of Contents which sections are applicable and included for this modeling demonstration. Select "X" from the drop down if the item below is included in the workbook. Note: This workbook is only for the following air dispersion models: AERSCREEN, ISC/ISCPrime, and/or AERMOD. If SCREEN3 is used, please use the separate Electronic Modeling Evaluation Workbook (EMEW) for SCREEN3 workbook.

Table of Contents:

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook (EMEW)

General

Date: March 25, 2022
Permit #s: 38754
Company Name: Valero Refining Company - Texas LP

Included Attachments Instructions: The following are attachments that must be included with any modeling analysis. If providing the plot plan and area map with the permit application, ensure there is also a copy with the EMEW. The copy can be electronic.	**Select an X from the dropdown menu if included:**
Plot Plan: Instructions: Mark all that apply in the attached plot plan. For larger properties or dense source areas, provide multiple zoomed in plot plans that are legible.	
Property/Fence Lines all visible and marked.	X
North arrow included.	X
Clearly marked scale.	X
All sources and buildings are clearly labeled.	X
Area Map:	
Instructions: Mark all that apply in the attached area map.	
Annotate schools within 3,000ft of source's nearest property line.	Choose an item
All property lines are included.	X
Non-industrial receptors are identified.	Choose an item
Additional Attachments (as applicable): *Note: These are just a few examples of attachments that may need to be included. There may be others depending on the scope of the modeling analysis.*	**Select an X from the dropdown menu if included:**
Processed Met Data Information	
Excel spreadsheet of processed meteorology data.	Choose an item
Meteorological Files (all input and outputs).	Choose an item
Source Group Descriptions	
Description of modeling source groups (could be in a tabulated format).	Choose an item
Modeling Techniques and Scenarios *Provide all justification and discussion on modeling scenarios used for the modeling analyses. The following boxes are examples of approaches that should be provided but is not all inclusive.*	
Discussion on modeling techniques not discussed in workbook.	Choose an item
Justification for exceedance refinements, as applicable.	Choose an item
Discussion and images for worst-case determination, as applicable.	Choose an item
Single Property Line Designation, as applicable	
Include Agreement, Order, and map defining each petitioner.	Choose an item
Post Processing using Unit Impact Multipliers (UIMs)	
Include documentation on any calculations used with the UIMs (i.e., Step 3 of the MERA).	X
Tier 3 NO_2 analysis *If OLM or PVMRM are used, provide all justification and documentation on using this approach.*	
Description of model setup.	Choose an item
Description and justification of model options selected (i.e., NO_2 to NO_x in-stack ratios).	Choose an item
Other Attachments *Provide a list in the box below of additional attachments being provided that are not listed above:*	

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Texas Commission on Environmental Quality

Date: March 25, 2022
Permit #s: 38754
Company Name: Valero Refining Company - Texas LP

Electronic Modeling Evaluation Workbook (EMEW)

Model Options

I. Project Information

A. Project Overview: In the box below, give a brief Project Overview. To type or insert text in box, double click in the box below. *Please limit your response to 2000 characters.*

Valero plans to undertake changes to the West Plant Heavy Oil Cracker (HOC), a type of fluidized catalytic cracking (FCC) unit. Due to the integrated nature of refinery operations, the project ("HOC Reconfiguration Project") will necessitate certain changes at other existing process units and will entail the construction of a new utility steam boiler, a new cooling tower, a new gas plant, a new sour water stripper, a new LPG Merox Treating Unit, a new Selective Hydrogenation Unit (SHU), a new C3/C4 Splitter Tower, and two new butane/butylene bullet tanks. MSS activities associated with the new equipment (e.g., new boiler) will be authorized as part of this project.

The non-PSD modeling information is contained in this EMEW (i.e., 1-hour SO2, H2S, H2SO4 SPL and MERA analyses).

II. Air Dispersion Modeling Preliminary Information

Instructions: Fill in the information below based on your modeling setup. The selections chosen in this sheet will carry throughout the sheet and workbook. Based on selections below, only portions of the sheet and workbook will be available. Therefore, it is vital the sheet and workbook are filled out in order, do NOT skip around.

For larger text boxes, double click to type or insert text.

A. Type of Model Used: *Select "X" in all that apply*

	AERSCREEN	X	AERMOD
21112	Enter in all applicable Model Version(s).		

B. Building Downwash

Yes	Is downwash applicable? *(Select "Yes" or "No")*
4274	Enter BPIP version (AERMOD and ISCPrime only).

C. Type of Analyses: (Select "X" in all that apply)
*PSD projects should submit a protocol and not utilize this form.

	Minor NSR NAAQS	X	State Property Line
X	Health Effects		

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Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook (EMEW)

Model Options

D. Constituents Evaluating: (Select "X" in all that apply)

[redacted]

Tier 2: ARM 2	Identify the 1-hr NO_2 tier used for the AERMOD or AERSCREEN analyses.
Tier 2: ARM 2	Identify the annual NO_2 tier used for the AERMOD or AERSCREEN analyses.

[redacted]

State Property Line: List all pollutants that require a modeling review. *(Select "X" in all that apply)*

X	H_2S	X	SO_2
X	H_2SO_4		

Health Effects: Fill in the Speciated Emissions sheet with all applicable pollutants, CAS numbers, and ESLs.

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Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook (EMEW)

Model Options

E. Dispersion Options: *If "Urban" has been selected and this project is using AERMOD or AERSCREEN, include the population used. Select "X" in the box to select an option.*

X	Urban	162728	Population Used

Provide any additional justification on the dispersion option selected above:

Justifcation is provided in the AQA report.

F. Determination of Surface Roughness: *If AERSCREEN or AERMOD is used, fill out the section below.*

Select basis for surface roughness: AERSURFACE

Select "X" in one of the three surface roughness categories:

	Low	X	Medium
			High

If you are using AERSURFACE, please complete the following section:

20060	AERSURFACE Version Number		
649301.8	Center UTM Easting (meters)	3077917.6	Center UTM Northing (meters)
1	Study Radius (km)		
No	Airport? (Select Yes or No)		
No	Continuous Snow Cover (Select Yes or No)		
Average	Surface Moisture (Select Wet, Dry, or Average)		
No	Arid Region? (Select Yes or No)		
Default	Month/Season Assignment		

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G. Meteorological Data:			
If AERMOD and/or ISC/ISCPrime are selected, please complete the following section:			
12924		Surface Station	
12924		Upper Air Station	
13.4	Meters (m)	Profile Base Elevation (AERMOD only)	
19191		AERMET Version Number	
Yes	Was TCEQ pre-processed data used?	Both	Years used
Please enter the year(s) selected for this meteorological data:			
2016	1 Year	2014-2018	5 Years
H2S, Generic, H2SO4		Which analysis(es) relied on 1 year?	
SO2		Which analysis(es) relied on 5 years?	
Provide any other justification for Meteorological Data, as applicable.			
Using 5-years of data for the 1-hour SO2 SPL modeling follows TCEQ's current guidance which notes that "if five years of meteorological data are used, then use the same five-year meteorological data for all applicable averaging periods for consistency."			

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Texas Commission on Environmental Quality
Electronic Modeling Evaluation Workbook (EMEW)
Model Options

H. Receptor Grid:

For AERMOD or ISC/ISCPrime, fill in the following information on your modeled receptor grid. Note: Receptor grid resolution (tight, fine, medium, coarse) are based on recommended receptor grid spacing per the AQMG, if something outside of this is used, fully describe it below.

25	Meters (m)	Tight Receptor Spacing
200	Meters (m)	Tight Receptor Distance
100	Meters (m)	Fine Receptor Spacing
1000	Meters (m)	Fine Receptor Distance
500	Meters (m)	Medium Receptor Spacing
10000	Meters (m)	Medium Receptor Distance
	Meters (m)	Coarse Receptor Spacing
	Meters (m)	Coarse Receptor Distance

Describe any other receptor grid designs (over water, GLC_{ni}, SPLD etc.):

I. Terrain:

X	Elevated
18081	AERMAP Version.

For additional justification on terrain selection, fill in the box below:

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook (EMEW)

Building Downwash

Date: March 25, 2022
Permit #s: 38754
Company Name: Valero Refining Company - Texas LP

Facility:

Downwash Type	Modeled Building ID	Tank Diameter (m)	Number of Tiers	Maximum Height (m)	Tier 1 Height (m)	Tier 2 Height (m)	Tier 3 Height (m)
Building	BLDG1		1	9.14	9.14		
Building	BLDG2		1	3.05	3.05		
Building	BLDG3		1	4.57	4.57		
Building	BLDG4		1	4.57	4.57		
Building	BLDG5		1	3.05	3.05		
Building	BLDG6		1	3.05	3.05		
Building	BLDG7		1	4.57	4.57		
Building	BLDG8		1	6.1	6.1		
Building	BLDG9		1	3.05	3.05		
Building	BLDG10		1	4.57	4.57		
Building	BLDG11		1	3.05	3.05		
Building	BLDG12		1	7.62	7.62		
Building	BLDG13		1	6.71	6.71		
Building	BLDG14		1	24.99	24.99		
Building	BLDG16		1	7.62	7.62		
Building	BLDG18		1	12	12		
Building	BLDG29		1	4.57	4.57		
Building	BLDG109		1	4.57	4.57		
Building	BLDG110		1	4.57	4.57		
Building	BLDG136		1	4.57	4.57		
Building	BLDG142		1	3.05	3.05		
Building	BLDG154		1	7.62	7.62		
Building	BLDG159		1	4.57	4.57		
Building	BLDG161		1	6.1	6.1		
Building	BLDG50		1	4.57	4.57		
Building	BLDG55		1	4.57	4.57		
Building	BLDG83		1	6.1	6.1		
Building	122CT		1	15.24	15.24		
Building	BUP_CT		1	13.72	13.72		
Building	BLDG156		1	12.19	12.19		
Building	BLDG89		1	7.62	7.62		
Building	BLDG90		1	3.66	3.66		
Building	BLDG91		1	4.57	4.57		
Building	BU_CR		1	15.24	15.24		
Building	MCC		1	12	12		

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook (EMEW)

Building Downwash

Date: March 25, 2022
Permit #s: 38754
Company Name: Valero Refining Company - Texas LP

Downwash Type	Modeled Building ID	Tank Diameter (m)	Number of Tiers	Maximum Height (m)	Tier 1 Height (m)	Tier 2 Height (m)	Tier 3 Height (m)
Building	Powerhou		3	15.24	3.66	7.92	15.24
Building	CT901		1	13.72	13.72		
Building	13L01V1		1	27.43	27.43		
Building	13L01V2		1	27.43	27.43		
Building	13L01V3		1	27.43	27.43		
Building	38VESE		1	27.43	27.43		
Building	38VESF		1	13.72	13.72		
Building	38VESG		1	13.72	13.72		
Building	38VESH		1	13.72	13.72		
Building	76-V-03A		1	4.57	4.57		
Building	76-V-03B		1	4.57	4.57		
Building	76-V-03C		1	4.57	4.57		
Building	76-V-03D		1	4.57	4.57		
Building	83V80		1	6.4	6.4		
Building	83V83		1	7.62	7.62		
Building	83V84		1	7.62	7.62		
Building	83V84B		1	4.57	4.57		
Building	83V87		1	6.4	6.4		
Building	col1		1	21	21		
Building	col2		1	21	21		
Building	col3		1	18	18		
Building	col4		1	13	13		
Building	col5		1	21	21		
Building	col6		1	21	21		
Building	col7		1	18	18		
Building	col8		1	13	13		
Tank	24TK01	9.36	1	12.19	12.19		
Tank	24TK02	9.13	1	7.32	7.32		
Tank	43TK08	4.46	1	6.1	6.1		
Tank	70a_tk66	24.99	1	16.46	16.46		
Tank	70a_tk67	24.99	1	16.46	16.46		
Tank	70a_tk68	24.99	1	16.46	16.46		
Tank	tank1	8	1	6.5	6.5		
Tank	tank2	8	1	6.5	6.5		
Tank	tank3	8	1	6.5	6.5		
Tank	tank4	10	1	10	10		
Tank	tank5	10	1	10	10		
Tank	TK-1	27.43	1	14.63	14.63		
Tank	TK-10	36.58	1	14.63	14.63		
Tank	TK-100	13.72	1	12.19	12.19		

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook (EMEW)

Building Downwash

Date: March 25, 2022
Permit #s: 38754
Company Name: Valero Refining Company - Texas LP

Downwash Type	Modeled Building ID	Tank Diameter (m)	Number of Tiers	Maximum Height (m)	Tier 1 Height (m)	Tier 2 Height (m)	Tier 3 Height (m)
Tank	TK-101	30.48	1	12.19	12.19		
Tank	TK-102	30.48	1	12.19	12.19		
Tank	TK-103	18.29	1	12.19	12.19		
Tank	TK-104	30.48	1	12.19	12.19		
Tank	TK-105	30.48	1	12.19	12.19		
Tank	TK-106	30.48	1	12.19	12.19		
Tank	TK-107	30.48	1	11.89	11.89		
Tank	TK-108	30.48	1	12.19	12.19		
Tank	TK-109	18.29	1	12.19	12.19		
Tank	TK-11	36.58	1	16.46	16.46		

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook (EMEW)

Building Downwash

Date: March 25, 2022
Permit #s: 38754
Company Name: Valero Refining Company - Texas LP

Downwash Type	Modeled Building ID	Tank Diameter (m)	Number of Tiers	Maximum Height (m)	Tier 1 Height (m)	Tier 2 Height (m)	Tier 3 Height (m)
Tank	TK-110	18.29	1	12.19	12.19		
Tank	TK-111	44.81	1	15.24	15.24		
Tank	TK-112	44.81	1	15.24	15.24		
Tank	TK-113	42.67	1	15.24	15.24		
Tank	TK-114	28.96	1	19.81	19.81		
Tank	TK-115	27.43	1	15.85	15.85		
Tank	TK-116	18.29	1	15.85	15.85		
Tank	TK-12	36.58	1	16.46	16.46		
Tank	TK-13	36.58	1	16.46	16.46		
Tank	TK-139	36.58	1	12.19	12.19		
Tank	TK-14	54.86	1	17.37	17.37		
Tank	TK-149	27.43	1	16.46	16.46		
Tank	TK-15	54.86	1	17.37	17.37		
Tank	TK-150	27.43	1	16.46	16.46		
Tank	TK-151	59.14	1	17.37	17.37		
Tank	TK-152	59.14	1	17.37	17.37		
Tank	TK-153	59.13	1	17.37	17.37		
Tank	TK-154	59.13	1	17.37	17.37		
Tank	TK-155	36.57	1	14.94	14.94		
Tank	TK-156	13.72	1	12.19	12.19		
Tank	TK-157	13	1	10	10		
Tank	TK-158	13	1	10	10		
Tank	TK-159	12.2	1	14.63	14.63		
Tank	TK-16	27.43	1	16.46	16.46		
Tank	TK-160	12.19	1	14.63	14.63		
Tank	TK-161	13.72	1	12.19	12.19		
Tank	TK-163	58.83	1	17.37	17.37		
Tank	TK-164	58.83	1	16.46	16.46		
Tank	TK-17	27.43	1	16.46	16.46		
Tank	TK-18	27.43	1	16.46	16.46		
Tank	TK-19	19.35	1	16.46	16.46		
Tank	TK-2	45.72	1	14.63	14.63		
Tank	TK-20	19.35	1	16.46	16.46		
Tank	TK-23	33.53	1	12.19	12.19		
Tank	TK-24	30.48	1	5.18	5.18		
Tank	TK-25	32.92	1	14.94	14.94		
Tank	TK-26	12.19	1	14.63	14.63		
Tank	TK-27	32.5	1	14.3	14.3		
Tank	TK-3	27.43	1	14.63	14.63		
Tank	TK-4	27.43	1	14.63	14.63		

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook (EMEW)

Building Downwash

Date: March 25, 2022
Permit #s: 38754
Company Name: Valero Refining Company - Texas LP

Downwash Type	Modeled Building ID	Tank Diameter (m)	Number of Tiers	Maximum Height (m)	Tier 1 Height (m)	Tier 2 Height (m)	Tier 3 Height (m)
Tank	TK-5	42.67	1	17.68	17.68		
Tank	TK-51	18.29	1	14.33	14.33		
Tank	TK-52	44.81	1	15.24	15.24		
Tank	TK-53	44.81	1	15.24	15.24		
Tank	TK-54	44.81	1	14.94	14.94		
Tank	TK-55	28.04	1	15.24	15.24		
Tank	TK-56	28.04	1	15.24	15.24		
Tank	TK-57	35.36	1	17.37	17.37		
Tank	TK-58	28.04	1	17.37	17.37		
Tank	TK-59	35.36	1	17.37	17.37		
Tank	TK-6	42.67	1	17.68	17.68		
Tank	TK-60	28.04	1	15.24	15.24		
Tank	TK-61	35.37	1	17.37	17.37		
Tank	TK-62	27.79	1	15.85	15.85		
Tank	TK-63	29.15	1	15.85	15.85		
Tank	TK-64	28.96	1	18.9	18.9		
Tank	TK-65	28.96	1	18.9	18.9		
Tank	TK-7	42.67	1	17.68	17.68		
Tank	TK-75	18.29	1	13.72	13.72		
Tank	TK-76	27.5	1	16.46	16.46		
Tank	TK-77	18.29	1	12.8	12.8		
Tank	TK-78	18.29	1	12.8	12.8		
Tank	TK-8	42.67	1	17.68	17.68		
Tank	TK-84	35	1	6.1	6.1		
Tank	TK-85	35	1	6.1	6.1		
Tank	TK-9	9.14	1	7.32	7.32		
Tank	TK-93	13.72	1	12.19	12.19		
Tank	TK-94	13.72	1	12.19	12.19		
Tank	TK-95	13.72	1	12.19	12.19		
Tank	TK-96	13.72	1	12.19	12.19		
Tank	TK-97	13.72	1	12.19	12.19		
Tank	TK-98	13.72	1	12.19	12.19		
Tank	TK-99	13.72	1	12.19	12.19		
Tank	TRIFIN-1	29.25	1	12.19	12.19		
Tank	TRIFIN-2	23.86	1	12.19	12.19		
Tank	TRIFIN-3	22.58	1	12.19	12.19		
Tank	TRIFIN-4	23.24	1	12.19	12.19		
Tank	TRIFIN-5	44.66	1	12.19	12.19		
Tank	TRIFIN-6	44.61	1	12.19	12.19		
Tank	TRIFIN-7	34.96	1	12.19	12.19		

Texas Commission on Environmental Quality
Electronic Modeling Evaluation Workbook (EMEW)
Building Downwash

Date: March 25, 2022
Permit #s: 38754
Company Name: Valero Refining Company - Texas LP

Downwash Type	Modeled Building ID	Tank Diameter (m)	Number of Tiers	Maximum Height (m)	Tier 1 Height (m)	Tier 2 Height (m)	Tier 3 Height (m)
Tank	TRIFIN-8	29.29	1	12.19	12.19		
Tank	TK_59WW	11.06	1	8.53	8.53		
Tank	TK_58WW	11.06	1	8.53	8.53		
Tank	TK-162	35.83	1	14.94	14.94		
Tank	TK16P04	1.52	1	1.52	1.52		
Tank	TK16P03	1.53	1	1.52	1.52		
Tank	TK16P02	1.53	1	1.52	1.52		
Tank	TK16P01	1.52	1	1.52	1.52		
Tank	TANK_A	10.94	1	6.1	6.1		
Tank	TK_97WW	4.54	1	9.14	9.14		
Tank	TK_C	10.39	1	7.62	7.62		
Tank	TK_D	6.92	1	7.62	7.62		
Tank	TK_E	4.07	1	7.62	7.62		
Tank	TK-167	68.58	1	18.29	18.29		
Tank	TK-166	68.58	1	18.29	18.29		
Tank	TK-188	59.14	1	17.37	17.37		

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook (EMEW)

Flare Source Parameters

Date: March 25, 2022

Permit #s: 38754

Company Name: Valero Refining Company - Texas LP

Facility:

EPN	Model ID	Modeling Scenario	Easting: X [m]	Northing: Y [m]	Base Elevation [m]	Height [m]	Exit Temperature [K]	Exit Velocity [m/s]	Heat Release (MMBtu/hr)	Molecular Weight	Gross Heat Release or q (cal/s)	Net Heat Release or q_n (cal/s)	Effective Diameter or D (meters)	Description
126	126		648976.00	3077720.00	9.18	83.82	1273.00	20.00	18.17	56.00	1272169.913	815207.6135	0.903	Main Flare
127	127		649943.00	3077713.00	8.45	83.82	1273.00	20.00	18.17	56.00	1272169.913	815207.6135	0.903	BUP Flare
158	158		648940.00	3077762.00	9.22	7.32	1273.00	20.00	18.17	56.00	1272169.913	815207.6135	0.903	Ground Flare
126	MSSFLR		648976.00	3077720.00	9.18	83.82	1273.00	20.00	1000.00	6.20	70000000	61633667.47	7.85	MSS Flaring
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	

VAL_000598

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook (EMEW)

Point Source Parameters

Date: March 25, 2022
Permit #s: 38754
Company Name: Valero Refining Company - Texas LP

Facility:

EPN	Model ID	Modeling Scenario	Source Description	Point Source Type	Point Source Justification	Easting: X [m]	Northing: Y [m]	Base Elevation [m]	Height [m]	Exit Temperature [K]	Exit Velocity [m/s]	Diameter [m]
121	121HOC		Heavy Oil Cracker (HOC) Belco Scrubber	POINT	Vertical stack; Actual Parameters	649347.00	3077978.00	9.02	68.58	358.150	21.063	4.267
HOC-PP-CT	HOCPPCT		New Cooling Tower	POINT	Vertical stack; Actual Parameters	649719.00	3077951.00	8.86	12.19	-5.500	7.315	7.315
121/ 30-B-05	MEROX		New MEROX Vent	POINT	Vertical stack; Actual Parameters	649645.00	3077940.00	8.89	18.29	422.039	14.592	2.388
30-B-05	30_B_05		Boiler 30-B-05 (Routine)	POINT	Vertical stack; Actual Parameters	649645.00	3077940.00	8.89	18.29	422.039	14.592	2.388
121	121SRU		Sulfur Recovery	POINT	Vertical stack; Actual Parameters	649347.00	3077978.00	9.02	68.59	358.148	21.063	4.267
168	168		Oleflex CCR	POINT	Vertical stack; Actual Parameters	649743.44	3077684.60	8.93	30.48	449.817	9.022	1.067
1	1		Heater - Crude Heater (01-H-01)	POINT	Vertical stack; Actual Parameters	648858.00	3077931.00	4.64	36.88	449.817	7.772	2.103
74	74		Vacuum Heater	POINT	Vertical stack; Actual Parameters	648842.04	3077900.86	4.59	33.83	666.483	10.119	1.707
114	114		Heater - Desalter Heater (11-H-01)	POINT	Vertical stack; Actual Parameters	649241.16	3077780.45	8.96	30.48	449.817	17.160	1.128
115	115		HDS Heaters	POINT	Vertical stack; Actual Parameters	649479.42	3077746.49	8.93	27.43	449.817	8.992	1.859
116	116		Heater - HDS Pre-Heater (12-H-02)	POINT	Vertical stack; Actual Parameters	649315.00	3077772.00	8.93	15.24	683.150	10.759	1.006
117	117		Heater - Alky Frac. Reb. (31-H-01)	POINT	Vertical stack; Actual Parameters	649489.17	3077810.44	8.95	27.43	449.817	21.031	1.067
118	118		Hydrogen Reformer Heater	POINT	Vertical stack; Actual Parameters	649222.00	3077857.00	8.94	36.88	449.817	15.057	3.627
119	119		Heater - Sulften Heater (46-H-01)	POINT	Vertical stack; Actual Parameters	649319.00	3078050.00	8.99	28.65	449.817	2.438	1.280
120	120		Heater - Butamer Heater (36-H-01)	POINT	Vertical stack; Actual Parameters	649707.70	3077865.45	8.82	24.69	449.817	1.585	1.280
124	124		WWTP Control Device	POINT	Vertical stack; Actual Parameters	649175.00	3078106.00	9.18	6.10	963.706	2.225	1.128
131	131		Heater - Crude Preflash (01-H-02)	POINT	Vertical stack; Actual Parameters	648844.00	3077912.00	4.61	9.14	449.817	9.022	1.067
132	132		Heater - Crude Stabilizer (01-H-03)	POINT	Vertical stack; Actual Parameters	648838.00	3077913.00	4.56	23.47	785.928	6.431	0.914
150	150		HCU Heater	POINT	Vertical stack; Actual Parameters	649415.00	3077685.00	8.97	39.93	449.817	12.040	1.920
151	151		Heater - NHU Heater (48-H-01)	POINT	Vertical stack; Actual Parameters	649237.61	3077636.79	9.16	35.36	622.039	4.877	1.219
152	152		CRU Heater	POINT	Vertical stack; Actual Parameters	649204.25	3077649.57	9.09	64.92	449.817	8.047	3.353
153	153		Heater - HR Boiler (30-B-02)	POINT	Vertical stack; Actual Parameters	649547.71	3077865.02	8.90	15.24	449.817	9.906	2.134
162	162		Oleflex Heater	POINT	Vertical stack; Actual Parameters	649715.06	3077645.35	8.94	64.92	449.817	5.334	3.048
172	172		Heater - RSU Heater (49-H-71)	POINT	Vertical stack; Actual Parameters	649197.60	3077741.90	8.99	44.81	449.817	13.015	1.295
195	195		Heater - GDU Charge Heater (52-H- 01)	POINT	Vertical stack; Actual Parameters	649108.50	3077696.70	9.16	52.73	550.372	5.852	2.743
16-P-04	16_P_04		Engine - 16-P-04	POINT	Vertical stack; Actual Parameters	649567.00	3077680.00	8.96	2.13	588.706	0.001	0.001
16-P-07	16_P_07		Engine - 16-P-07	POINT	Vertical stack; Actual Parameters	649595.00	3077662.00	8.96	2.13	588.706	0.001	0.001

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook (EMEW)

Point Source Parameters

Date: March 25, 2022
Permit #s: 38754
Company Name: Valero Refining Company - Texas LP

EPN	Model ID	Modeling Scenario	Source Description	Point Source Type	Point Source Justification	Easting: X [m]	Northing: Y [m]	Base Elevation [m]	Height [m]	Exit Temperature [K]	Exit Velocity [m/s]	Diameter [m]
16-P-11	16_P_11		Engine - 16-P-11	POINT	Vertical stack; Actual Parameters	649978.00	3077684.00	8.26	2.13	752.039	41.148	0.204
16-P-12	16_P_12		Engine - 16-P-12	POINT	Vertical stack; Actual Parameters	649981.00	3077690.00	8.26	2.13	752.039	41.148	0.204
16-P-13	16_P_13		Engine - 16-P-13	POINT	Vertical stack; Actual Parameters	649983.00	3077697.00	8.26	2.13	752.039	41.148	0.204
16-P-14	16_P_14		Engine - 16-P-14	POINT	Vertical stack; Actual Parameters	649985.00	3077703.00	8.26	2.13	752.039	41.148	0.204
30-B-04	30_B_04		Boiler 30-B-04	POINT	Vertical stack; Actual Parameters	649600.00	3077800.00	8.87	18.29	477.594	17.374	2.438
49-H-90	49_H_90		Heater - C7 Splitter Reb. (49-H-90)	POINT	Vertical stack; Actual Parameters	649185.64	3077705.19	9.00	48.77	449.817	4.420	1.524
83-P-136A	83P_136A		Engine 83-P-136A-EN	POINT	Vertical stack; Actual Parameters	649252.00	3078160.00	9.26	3.05	588.706	0.001	0.001
83-P-136B	83P_136B		Engine 83-P-136B-EN	POINT	Vertical stack; Actual Parameters	649253.20	3078164.00	9.26	3.05	588.706	0.001	0.001
TRUCKCOMB	TRKVCU		Loading - Truck Combustor	POINT	Vertical stack; Actual Parameters	648838.00	3077708.00	6.70	10.67	1033.150	4.572	1.829
MSS CAPS	MSSTK4		Tank MSS	POINT	Vertical stack; Actual Parameters	648701.00	3077843.00	4.86	3.89	1033.150	7.254	1.554
MSS CAPS	MSSTK7		Tank MSS	POINT	Vertical stack; Actual Parameters	648831.55	3078015.65	4.42	3.89	1033.150	7.254	1.554
MSS CAPS	MSSTK11		Tank MSS	POINT	Vertical stack; Actual Parameters	649145.84	3078271.94	4.33	3.89	1033.150	7.315	1.554
MSS CAPS	MSSTK12		Tank MSS	POINT	Vertical stack; Actual Parameters	649196.49	3078201.81	9.11	3.89	1033.150	7.254	1.554

Texas Commission on Environmental Quality

Date: March 25, 2022
Permit #s: 38754
Company Name: Valero Refining Company - Texas LP

Electronic Modeling Evaluation Workbook (EMEW)

Point Source Parameters

EPN	Model ID	Modeling Scenario	Source Description	Point Source Type	Point Source Justification	Easting: X [m]	Northing: Y [m]	Base Elevation [m]	Height [m]	Exit Temperature [K]	Exit Velocity [m/s]	Diameter [m]
MSS CAPS	MSSSRU		SRU Startup/Shutdown	POINT	Vertical stack; Actual Parameters	649347.00	3077978.00	9.02	68.58	358.150	21.063	4.267
MSS CAPS	MSSHOC		HOC Startup/Shutdown	POINT	Vertical stack; Actual Parameters	649347.00	3077978.00	9.02	68.58	358.150	21.063	4.267
MSS CAPS	MSSDECOK		Heater Decoking	POINT	Vertical stack; Actual Parameters	648865.00	3077905.00	4.69	6.10	533.150	42.988	0.203
163	163		Boiler 30-B-03	POINT	Vertical stack; Actual Parameters	649626.00	3077895.00	8.69	38.40	449.817	8.291	1.372
49-H-91	49_H_91		C8 Splitter Reboiler	POINT	Vertical stack; Actual Parameters	649194.46	3077724.36	8.99	51.21	449.817	19.873	2.057
900	900		Process Heater	POINT	Vertical stack; Actual Parameters	649611.34	3077685.95	8.96	54.86	422.039	4.206	3.536
909	909		Vapor Combustion Unit	POINT	Vertical stack; Actual Parameters	649495.49	3078163.69	2.19	18.29	1144.261	15.240	3.658
TKVCU	TKVCU		West Plant Storage Tank VCU	POINT	Vertical stack; Actual Parameters	648850.00	3077958.00	4.52	10.67	1033.150	9.144	2.347
PVCU	C_PVCU		LPG VCU	POINT	Vertical stack; Actual Parameters	649160.00	3078322.00	6.70	5.49	810.928	6.706	1.798

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook (EMEW)

Volume Source Calculations

Date: March 25, 2022

Permit #s: 38754

Company Name: Valero Refining Company - Texas LP

Facility:

EPN	Model ID	Footprint of Source Length (m)	Footprint of Source Width (m)	Length of Side (making it a square) SQRT(L * W)	Type of Volume Source (sigma y) *Pick from drop-down*	**Sigma Y** (m)	Vertical Span Min Release (m)	Vertical Span Max Release (m)
21/22F	22_21F	15.24	15.24	15.24	Single Volume Source	3.54	0.00	9.14
42F	42F	15.24	15.24	15.24	Single Volume Source	3.54	0.00	9.14
FUG-CAP	FUGCAP	45.72	45.72	45.72	Single Volume Source	10.63	0.00	9.14
CAS-HOCPP	CASHOCPP	0.30	0.30	0.30	Single Volume Source	0.07	0.00	3.05
				0.00		Incomplete		
				0.00		Incomplete		
				0.00		Incomplete		
				0.00		Incomplete		
				0.00		Incomplete		
				0.00		Incomplete		
				0.00		Incomplete		
				0.00		Incomplete		
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				0.00		Incomplete		
				0.00		Incomplete		

Texas Commission on Environmental Quality
Electronic Modeling Evaluation Workbook (EMEW)
Volume Source Calculations

Date: March 25, 2022
Permit #s: 38754
Company Name: Valero Refining Company - Texas LP

Vertical Dimension (m)	Type of Volume Source (sigma z) *Pick from drop-down*	Release Height (middle point of vertical span) (m)	Building Name (if on/adjacent to a building) *Pick from drop-down*	Adjacent Building Height, if applicable (m)	**Sigma Z** (m)
9.14	Surface-Based Source	4.57			4.25
9.14	Surface-Based Source	4.57			4.25
9.14	Surface-Based Source	4.57			4.25
3.05	Surface-Based Source	1.52			1.42
0.00		0.00			Incomplete
0.00		0.00			Incomplete
0.00		0.00			Incomplete
0.00		0.00			Incomplete
0.00		0.00			Incomplete
0.00		0.00			Incomplete
0.00		0.00			Incomplete
0.00		0.00			Incomplete
0.00		0.00			Incomplete
0.00		0.00			Incomplete
0.00		0.00			Incomplete
0.00		0.00			Incomplete
0.00		0.00			Incomplete
0.00		0.00			Incomplete
0.00		0.00			Incomplete
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0.00		0.00			Incomplete
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0.00		0.00			Incomplete
0.00		0.00			Incomplete
0.00		0.00			Incomplete
0.00		0.00			Incomplete
0.00		0.00			Incomplete
0.00		0.00			Incomplete

VAL_000603

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook (EMEW)

Volume Source Parameters

Date: March 25, 2022
Permit #s: 38754
Company Name: Valero Refining Company - Texas LP

Facility:

EPN	Model ID	Modeled Release Height [m]	Modeled Length X [m]	Lateral Dimension SigmaY [m]	Vertical Dimension SigmaZ [m]	Modeling Scenario	Easting: X [m]	Northing: Y [m]	Base Elevation [m]	Source Description	Volume Source Size Justification
21/22F	22_21F	4.57	15.24	3.54	4.25		649484.00	3077928.00	9.06	HOC Unit Fugitives	Represntatve size of the area where piping fugitives are located
42F	42F	4.57	15.24	3.54	4.25		649289.00	3078010.00	9.03	Sour Wtr, Stripper Fugitives	Represntatve size of the area where piping fugitives are located
FUG-CAP	FUGCAP	4.57	45.72	10.63	4.25		649628.00	3077970.00	9.07	Piping Fugitives	Represntatve size of the area where piping fugitives are located
CAS-HOCPP	CASHOCPP	1.52	0.30	0.07	1.42		649628.00	3077970.00	9.07	HOC Gas Plant Wastewater Lift Statation	Small source to represent the emissions for a CAS

VAL_000604

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook (EMEW)

Point + Flare Emissions

Date: March 25, 2022

Permit #s: 38754

Company Name: Valero Refining Company - Texas LP

Facility:

EPN	Model ID	Modeling Scenario	Pollutant	Modeled Averaging Time	Standard Type	Review Context	Intermittent Source?	Modeled Emission Rate [lb/hr]	Basis of Emission Rate	Scalars or Factors Used?
126	126	0	Generic	1-hr			No	1.00	Unit rate of 1 lb/hr	No
127	127	0	Generic	1-hr			No	1.00	Unit rate of 1 lb/hr	No
158	158	0	Generic	1-hr			No	1.00	Unit rate of 1 lb/hr	No
121	121HOC	0	Generic	1-hr			No	1.00	Unit rate of 1 lb/hr	No
HOC-PP-CT	HOCPPCT	0	Generic	1-hr			No	1.00	Unit rate of 1 lb/hr	No
121/30-B-05	MEROX	0	Generic	1-hr			No	1.00	Unit rate of 1 lb/hr	No
30-B-05	30_B_05	0	Generic	1-hr			No	1.00	Unit rate of 1 lb/hr	No
126	126	0	Generic	Annual			No	1.00	Unit rate of 1 tpy	No
127	127	0	Generic	Annual			No	1.00	Unit rate of 1 tpy	No
158	158	0	Generic	Annual			No	1.00	Unit rate of 1 tpy	No
121/30-B-05	MEROX	0	H2S	1-hr	State Property Line	Project Wide	No	0.00100	Project emission rate increase	No
121	121SRU	0	H2S	1-hr	State Property Line	Project Wide	No	0.110	Project emission rate increase	No
126	126	0	H2S	1-hr	State Property Line	Project Wide	No	1.00E-06	Project emission rate increase	No
21/22F	22_21F	0	H2S	1-hr	State Property Line	Project Wide	No	0.00432	Project emission rate increase	No
42F	42F	0	H2S	1-hr	State Property Line	Project Wide	No	4.11E-04	Project emission rate increase	No
FUG-CAP	FUGCAP	0	H2S	1-hr	State Property Line	Project Wide	No	0.0128	Project emission rate increase	No
121	121HOC	0	H2SO4	1-hr	State Property Line	Site Wide	No	49.00	Max allowable rate	No
168	168	0	H2SO4	1-hr	State Property Line	Site Wide	No	0.0100	Max allowable rate	No
121	121HOC	0	H2SO4	24-hr	State Property Line	Site Wide	No	49.00	Max allowable rate	No
168	168	0	H2SO4	24-hr	State Property Line	Site Wide	No	0.0100	Max allowable rate	No
30-B-05	30_B_05	0	SO2	1-hr	State Property Line	Site Wide	No	7.70	Max allowable rate	No
121/30-B-05	MEROX	0	SO2	1-hr	State Property Line	Site Wide	No	3.86	Max allowable rate	No
1	1	0	SO2	1-hr	State Property Line	Site Wide	No	2.50	Max allowable rate	No
74	74	0	SO2	1-hr	State Property Line	Site Wide	No	1.37	Max allowable rate	No
114	114	0	SO2	1-hr	State Property Line	Site Wide	No	1.52	Max allowable rate	No
115	115	0	SO2	1-hr	State Property Line	Site Wide	No	2.49	Max allowable rate	No
116	116	0	SO2	1-hr	State Property Line	Site Wide	No	0.300	Max allowable rate	No
117	117	0	SO2	1-hr	State Property Line	Site Wide	No	2.41	Max allowable rate	No
118	118	0	SO2	1-hr	State Property Line	Site Wide	No	44.53	Max allowable rate	No
119	119	0	SO2	1-hr	State Property Line	Site Wide	No	0.340	Max allowable rate	No
120	120	0	SO2	1-hr	State Property Line	Site Wide	No	0.260	Max allowable rate	No
121	121HOC	0	SO2	1-hr	State Property Line	Site Wide	No	219.22	Max allowable rate	No
121	121SRU	0	SO2	1-hr	State Property Line	Site Wide	No	191.32	Max allowable rate	No
124	124	0	SO2	1-hr	State Property Line	Site Wide	No	0.0300	Max allowable rate	No
131	131	0	SO2	1-hr	State Property Line	Site Wide	No	0.270	Max allowable rate	No
132	132	0	SO2	1-hr	State Property Line	Site Wide	No	0.0700	Max allowable rate	No
150	150	0	SO2	1-hr	State Property Line	Site Wide	No	3.13	Max allowable rate	No
151	151	0	SO2	1-hr	State Property Line	Site Wide	No	0.600	Max allowable rate	No
152	152	0	SO2	1-hr	State Property Line	Site Wide	No	9.80	Max allowable rate	No
153	153	0	SO2	1-hr	State Property Line	Site Wide	No	4.34	Max allowable rate	No
162	162	0	SO2	1-hr	State Property Line	Site Wide	No	5.99	Max allowable rate	No
172	172	0	SO2	1-hr	State Property Line	Site Wide	No	1.02	Max allowable rate	No
195	195	0	SO2	1-hr	State Property Line	Site Wide	No	2.55	Max allowable rate	No
16-P-04	16_P_04	0	SO2	1-hr	State Property Line	Site Wide	No	0.0475	Max allowable rate	No
16-P-07	16_P_07	0	SO2	1-hr	State Property Line	Site Wide	No	0.0575	Max allowable rate	No
16-P-11	16_P_11	0	SO2	1-hr	State Property Line	Site Wide	No	0.0197	Max allowable rate	No

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook (EMEW)

Point + Flare Emissions

Date: March 25, 2022
Permit #s: 38754
Company Name: Valero Refining Company - Texas LP

EPN	Model ID	Modeling Scenario	Pollutant	Modeled Averaging Time	Standard Type	Review Context	Intermittent Source?	Modeled Emission Rate [lb/hr]	Basis of Emission Rate	Scalars or Factors Used?
16-P-12	16_P_12	0	SO2	1-hr	State Property Line	Site Wide	No	0.0197	Max allowable rate	No
16-P-13	16_P_13	0	SO2	1-hr	State Property Line	Site Wide	No	0.0197	Max allowable rate	No
16-P-14	16_P_14	0	SO2	1-hr	State Property Line	Site Wide	No	0.0197	Max allowable rate	No
30-B-04	30_B_04	0	SO2	1-hr	State Property Line	Site Wide	No	8.65	Max allowable rate	No
49-H-90	49_H_90	0	SO2	1-hr	State Property Line	Site Wide	No	1.64	Max allowable rate	No
83-P-136A	83P_136A	0	SO2	1-hr	State Property Line	Site Wide	No	0.0441	Max allowable rate	No
83-P-136B	83P_136B	0	SO2	1-hr	State Property Line	Site Wide	No	0.0441	Max allowable rate	No
TRUCKCOMB	TRKVCU	0	SO2	1-hr	State Property Line	Site Wide	No	0.0200	Max allowable rate	No
158	158	0	SO2	1-hr	State Property Line	Site Wide	No	3.55	Max allowable rate	No
126	MSSFLR	0	SO2	1-hr	State Property Line	Site Wide	No	996.29	Max allowable rate	No
MSS CAPS	MSSTK4	0	SO2	1-hr	State Property Line	Site Wide	No	0.0224	Max allowable rate	No
MSS CAPS	MSSTK7	0	SO2	1-hr	State Property Line	Site Wide	No	0.0224	Max allowable rate	No
MSS CAPS	MSSTK11	0	SO2	1-hr	State Property Line	Site Wide	No	0.0224	Max allowable rate	No
MSS CAPS	MSSTK12	0	SO2	1-hr	State Property Line	Site Wide	No	0.0224	Max allowable rate	No
MSS CAPS	MSSSRU	0	SO2	1-hr	State Property Line	Site Wide	No	344.27	Max allowable rate	No
MSS CAPS	MSSHOC	0	SO2	1-hr	State Property Line	Site Wide	No	85.39	Max allowable rate	No
MSS CAPS	MSSDECOK	0	SO2	1-hr	State Property Line	Site Wide	No	1.57	Max allowable rate	No
163	163	0	SO2	1-hr	State Property Line	Site Wide	No	4.27	Max allowable rate	No
49-H-91	49_H_91	0	SO2	1-hr	State Property Line	Site Wide	No	2.36	Max allowable rate	No
900	900	0	SO2	1-hr	State Property Line	Site Wide	No	8.62	Max allowable rate	No
909	909	0	SO2	1-hr	State Property Line	Site Wide	No	3.26	Max allowable rate	No
TKVCU	TKVCU	0	SO2	1-hr	State Property Line	Site Wide	No	0.0100	Max allowable rate	No
PVCU	C_PVCU	0	SO2	1-hr	State Property Line	Site Wide	No	0.0183	Max allowable rate	No

VAL_000606

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook (EMEW)

Volume Source Emissions

Date: March 25, 2022

Permit #s: 38754

Company Name: Valero Refining Company - Texas LP

Facility:

EPN	Model ID	Modeling Scenario	Pollutant	Modeled Averaging Time	Standard Type	Review Context	Intermittent Source?	Modeled Emission Rate [lb/hr]	Basis of Emission Rate	Scalars or Factors Used?
FUG-CAP	FUGCAP	0	Generic	1-hr			No	1.00	Unit rate of 1 lb/hr	No
CAS-HOCPP	CASHOCPP	0	Generic	1-hr			No	1.00	Unit rate of 1 lb/hr	No
21/22F	22_21F	0	H2S	1-hr	State Property Line	Project Wide	No	0.00432	Project increase	No
42F	42F	0	H2S	1-hr	State Property Line	Project Wide	No	4.11E-04	Project increase	No
FUG-CAP	FUGCAP	0	H2S	1-hr	State Property Line	Project Wide	No	0.0128	Project increase	No

VAL_000607

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook (EMEW)

Combined Emissions

Date: March 25, 2022

Permit #s: 38754

Company Name: Valero Refining Company - Texas LP

EPN	Model ID	Modeling Scenario	Pollutant	Modeled Averaging Time	Standard Type	Review Context	Intermittent	Source Type	Modeled Emission Rate [lb/hr]
126	126	0	Generic	1-hr			No	Flare	1.00
127	127	0	Generic	1-hr			No	Flare	1.00
158	158	0	Generic	1-hr			No	Flare	1.00
121	121HOC	0	Generic	1-hr			No	Point	1.00
HOC-PP-CT	HOCPPCT	0	Generic	1-hr			No	Point	1.00
121/30-B-05	MEROX	0	Generic	1-hr			No	Point	1.00
30-B-05	30_B_05	0	Generic	1-hr			No	Point	1.00
126	126	0	Generic	Annual			No	Flare	1.00
127	127	0	Generic	Annual			No	Flare	1.00
158	158	0	Generic	Annual			No	Flare	1.00
121/30-B-05	MEROX	0	H2S	1-hr	State Property Line	Project Wide	No	Point	0.00
121	121SRU	0	H2S	1-hr	State Property Line	Project Wide	No	Point	0.11
126	126	0	H2S	1-hr	State Property Line	Project Wide	No	Flare	0.00
21/22F	22_21F	0	H2S	1-hr	State Property Line	Project Wide	No	Volume	0.00
42F	42F	0	H2S	1-hr	State Property Line	Project Wide	No	Volume	0.00
FUG-CAP	FUGCAP	0	H2S	1-hr	State Property Line	Project Wide	No	Volume	0.01
121	121HOC	0	H2SO4	1-hr	State Property Line	Site Wide	No	Point	49.00
168	168	0	H2SO4	1-hr	State Property Line	Site Wide	No	Point	0.01
121	121HOC	0	H2SO4	24-hr	State Property Line	Site Wide	No	Point	49.00
168	168	0	H2SO4	24-hr	State Property Line	Site Wide	No	Point	0.01
30-B-05	30_B_05	0	SO2	1-hr	State Property Line	Site Wide	No	Point	7.70
121/30-B-05	MEROX	0	SO2	1-hr	State Property Line	Site Wide	No	Point	3.86
1	1	0	SO2	1-hr	State Property Line	Site Wide	No	Point	2.50
74	74	0	SO2	1-hr	State Property Line	Site Wide	No	Point	1.37
114	114	0	SO2	1-hr	State Property Line	Site Wide	No	Point	1.52
115	115	0	SO2	1-hr	State Property Line	Site Wide	No	Point	2.49
116	116	0	SO2	1-hr	State Property Line	Site Wide	No	Point	0.30
117	117	0	SO2	1-hr	State Property Line	Site Wide	No	Point	2.41
118	118	0	SO2	1-hr	State Property Line	Site Wide	No	Point	44.53
119	119	0	SO2	1-hr	State Property Line	Site Wide	No	Point	0.34
120	120	0	SO2	1-hr	State Property Line	Site Wide	No	Point	0.26
121	121HOC	0	SO2	1-hr	State Property Line	Site Wide	No	Point	219.22
121	121SRU	0	SO2	1-hr	State Property Line	Site Wide	No	Point	191.32
124	124	0	SO2	1-hr	State Property Line	Site Wide	No	Point	0.03
131	131	0	SO2	1-hr	State Property Line	Site Wide	No	Point	0.27
132	132	0	SO2	1-hr	State Property Line	Site Wide	No	Point	0.07
150	150	0	SO2	1-hr	State Property Line	Site Wide	No	Point	3.13
151	151	0	SO2	1-hr	State Property Line	Site Wide	No	Point	0.60
152	152	0	SO2	1-hr	State Property Line	Site Wide	No	Point	9.80
153	153	0	SO2	1-hr	State Property Line	Site Wide	No	Point	4.34
162	162	0	SO2	1-hr	State Property Line	Site Wide	No	Point	5.99
172	172	0	SO2	1-hr	State Property Line	Site Wide	No	Point	1.02
195	195	0	SO2	1-hr	State Property Line	Site Wide	No	Point	2.55
16-P-04	16_P_04	0	SO2	1-hr	State Property Line	Site Wide	No	Point	0.05
16-P-07	16_P_07	0	SO2	1-hr	State Property Line	Site Wide	No	Point	0.06
16-P-11	16_P_11	0	SO2	1-hr	State Property Line	Site Wide	No	Point	0.02
16-P-12	16_P_12	0	SO2	1-hr	State Property Line	Site Wide	No	Point	0.02
16-P-13	16_P_13	0	SO2	1-hr	State Property Line	Site Wide	No	Point	0.02

Texas Commission on Environmental Quality
Electronic Modeling Evaluation Workbook (EMEW)
Combined Emissions

Date: March 25, 2022
Permit #s: 38754
Company Name: Valero Refining Company - Texas LP

EPN	Model ID	Modeling Scenario	Pollutant	Modeled Averaging Time	Standard Type	Review Context	Intermittent	Source Type	Modeled Emission Rate [lb/hr]
16-P-14	16_P_14	0	SO2	1-hr	State Property Line	Site Wide	No	Point	0.02
30-B-04	30_B_04	0	SO2	1-hr	State Property Line	Site Wide	No	Point	8.65
49-H-90	49_H_90	0	SO2	1-hr	State Property Line	Site Wide	No	Point	1.64
83-P-136A	83P_136A	0	SO2	1-hr	State Property Line	Site Wide	No	Point	0.04
83-P-136B	83P_136B	0	SO2	1-hr	State Property Line	Site Wide	No	Point	0.04
TRUCKCOMB	TRKVCU	0	SO2	1-hr	State Property Line	Site Wide	No	Point	0.02
158	158	0	SO2	1-hr	State Property Line	Site Wide	No	Flare	3.55
126	MSSFLR	0	SO2	1-hr	State Property Line	Site Wide	No	Flare	996.29
MSS CAPS	MSSTK4	0	SO2	1-hr	State Property Line	Site Wide	No	Point	0.02
MSS CAPS	MSSTK7	0	SO2	1-hr	State Property Line	Site Wide	No	Point	0.02
MSS CAPS	MSSTK11	0	SO2	1-hr	State Property Line	Site Wide	No	Point	0.02
MSS CAPS	MSSTK12	0	SO2	1-hr	State Property Line	Site Wide	No	Point	0.02
MSS CAPS	MSSSRU	0	SO2	1-hr	State Property Line	Site Wide	No	Point	344.27
MSS CAPS	MSSHOC	0	SO2	1-hr	State Property Line	Site Wide	No	Point	85.39
MSS CAPS	MSSDECOK	0	SO2	1-hr	State Property Line	Site Wide	No	Point	1.57
163	163	0	SO2	1-hr	State Property Line	Site Wide	No	Point	4.27
49-H-91	49_H_91	0	SO2	1-hr	State Property Line	Site Wide	No	Point	2.36
900	900	0	SO2	1-hr	State Property Line	Site Wide	No	Point	8.62
909	909	0	SO2	1-hr	State Property Line	Site Wide	No	Point	3.26
TKVCU	TKVCU	0	SO2	1-hr	State Property Line	Site Wide	No	Point	0.01
PVCU	C_PVCU	0	SO2	1-hr	State Property Line	Site Wide	No	Point	0.02
FUG-CAP	FUGCAP	0	Generic	1-hr			No	Volume	1.00
CAS-HOCPP	CASHOCPP	0	Generic	1-hr			No	Volume	1.00
21/22F	22_21F	0	H2S	1-hr	State Property Line	Project Wide	No	Volume	0.00
42F	42F	0	H2S	1-hr	State Property Line	Project Wide	No	Volume	0.00
FUG-CAP	FUGCAP	0	H2S	1-hr	State Property Line	Project Wide	No	Volume	0.01

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook (EMEW)

NAAQS-SPL Modeling Results

Date: March 25, 2022
Permit #s: 38754
Company Name: Valero Refining Company - Texas LP

Table 1. Project-Related Modeling Results for State Property Line

Pollutant	Averaging Time	GLCmax (µg/m^3)	De Minimis (µg/m^3)
SO_2	1-hr	21.13756	20.42
H_2SO_4	1-hr	6.66309	1
H_2SO_4	24-hr	2.45903	0.3
H_2S	1-hr	0.383	2.16 *(If property is residential, recreational, business, or commercial)*
H_2S	1-hr	0.383	3.24 *(If property is not residential, recreational, business, or commercial)*

Table 2. Site-wide Modeling Results for State Property Line

Pollutant	Averaging Time	GLCmax (µg/m^3)	Standard (µg/m^3)
SO_2	1-hr	182.93902	1021
H_2SO_4	1-hr	8.48386	50
H_2SO_4	24-hr	3.13146	15
H_2S	1-hr		108 *(If property is residential, recreational, business, or commercial)*
H_2S	1-hr		162 *(If property is not residential, recreational, business, or commercial)*

[redacted]

VAL_000610

Texas Commission on Environmental Quality
Electronic Modeling Evaluation Workbook (EMEW)
Unit Impact Multipliers

Date: March 25, 2022
Permit #s: 38754
Company Name: Valero Refining Company - Texas LP

Facility:

EPN	Model ID	Modeling Scenario	Averaging Time	GLCmax ($\mu g/m^3$ per lb/hr)	GLCmax ($\mu g/m^3$ per tpy)
126	126	0	1-hr	0.229	
127	127	0	1-hr	0.227	
158	158	0	1-hr	4.50	
121	121HOC	0	1-hr	0.173	
HOC-PP-CT	HOCPPCT	0	1-hr	7.18	
121/30-B-05	MEROX	0	1-hr	1.73	
30-B-05	30_B_05	0	1-hr	1.73	
126	126	0	Annual	0.00357	
127	127	0	Annual	0.00351	
158	158	0	Annual	0.0634	
FUG-CAP	FUGCAP	0	1-hr	27.84	
CAS-HOCPP	CASHOCPP	0	1-hr	28.93	

VAL_000611

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook (EMEW)

Health Effect Modeling Results

Date: March 25, 2022_
Permit #s: _38754_
Company Name: _Valero Refining Company - Texas LP_

Facility:

Modeled Health Effect Results (MERA Guidance):				Step 3	Step 4: Production
Chemical Species	CAS Number	Averaging Time	ESL [µg/m^3]	10% ESL Step 3 Modeled GLCmax [µg/m^3]	25 % ESL Step 4 Production GLCmax since most recent site wide modeling [µg/m^3]
ammonia	7664-41-7	1-hr	180	4.66	
distillates (petroleum), light catalytic cracked	64741-59-9	1-hr	3500	194.50	

VAL_000612

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook (EMEW)

Health Effect Modeling Results

Date: March 25, 2022
Permit #s: 38754
Company Name: Valero Refining Company - Texas LP

Facility:

Modeled Hea		Step 4: MSS		Step 5: MSS Only	Step 5: Hours of Excee
Chemical Species	10% ESL Step 4 Production Project Only GLCmax [μg/m^3]	50% ESL Step 4 MSS GLCmax since most recent site wide modeling [μg/m^3]	25% ESL Step 4 MSS Project Only GLCmax [μg/m^3]	Full ESL Step 5 GLCmax [μg/m^3]	*1X ESL GLCmax* Step 5 MSS Hours of Exceedance
ammonia					
distillates (petroleum), light catalytic cracked					

VAL_000613

Texas Commission on Environmental Quality
Electronic Modeling Evaluation Workbook (EMEW)
Health Effect Modeling Results

Date: March 25, 2022
Permit #s: 38754
Company Name: Valero Refining Company - Texas LP

Facility:

Modeled Headance				Step 6	Step 7: Site Wide
Chemical Species	*2X ESL GLCmax* Step 5 MSS Hours of Exceedance	*4X ESL GLCmax* Step 5 MSS Hours of Exceedance	*10X ESL GLCmax* Step 5 MSS Hours of Exceedance	Was Step 6 relied on to fall out of the MERA?	Site Wide GLCmax [μg/m^3]
ammonia					
distillates (petroleum), light catalytic cracked					

VAL_000614

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook (EMEW)

Health Effect Modeling Results

Date: March 25, 2022
Permit #s: 38754
Company Name: Valero Refining Company - Texas LP

Facility:

Modeled Hea				Step 7: Hours of Exceedance		
Chemical Species	Site Wide GLCni [μg/m^3]	GLCni Location Easting: X [m]	GLCni Location Northing: Y [m]	*1X ESL GLCni* Hours of Exceedance	*2X ESL GLCmax* Hours of Exceedance	*4X ESL GLCmax* Hours of Exceedance
ammonia						
distillates (petroleum), light catalytic cracked						

VAL_000615

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook (EMEW)

Health Effect Modeling Results

Date: March 25, 2022
Permit #s: 38754
Company Name: Valero Refining Company - Texas LP

Facility:

Modeled Hea	
Chemical Species	*10X ESL GLCmax* Hours of Exceedance
ammonia	
distillates (petroleum), light catalytic cracked	

Texas Commission on Environmental Quality
Electronic Modeling Evaluation Workbook (EMEW)
Modeling File Names

Date: March 25, 2022
Permit #s: 38754
Company Name: Valero Refining Company - Texas LP

Facility:

Model File Base Name	Pollutant	Averaging Time	File Extensions	Additional File Description
HOCProject_2014-2018_SO2_PL	SO2	1-hr	*DTA, *GRF, *LST, *SUM	de minimis
HOCProject_2016_H2S	H2S	1-hr	*DTA, *GRF, *LST, *SUM	de minimis
HOCProject_2016_H2SO4	H2SO4	1-hr	*DTA, *GRF, *LST, *SUM	de minimis
HOCProject_2016_UNIT_ST	Generic	1-hr	*DTA, *GRF, *LST, *SUM	unit impact short-term
HOCProject_2016_UNIT_AN	Generic	Annual	*DTA, *GRF, *LST, *SUM	unit impact annual
SO2_1HRSPL	SO2	1-hr	*DTA, *GRF, *LST, *SUM	site-wide
H2SO4_2016_H2SO4	H2SO4	1-hr	*DTA, *GRF, *LST, *SUM	site-wide
HOCProject_2016_H2S	H2S	24-hr	*DTA, *GRF, *LST, *SUM	de minimis
H2SO4_2016_H2SO4	H2SO4	24-hr	*DTA, *GRF, *LST, *SUM	site-wide
Valero West Plant Electronic Plot Plan	All	All	*.kmz	electronic plot plan
Valero WP HOC AQA	All	All	*docx	air quality analysis report
aersurface	All	All	*inp, *log, *txt	aersurface files
Nueces_CRPCRP	All	All	*SFC, *PFL	aermet files
ValeroWP	All	All	*map, *mot, *srf, *rcf, *rmp	aermap files project sources
Sitewide	All	All	*map, *mot, *srf, *rcf, *rmp	aermap files sitewide sources

VAL_000617

Texas Commission on Environmental Quality
Electronic Modeling Evaluation Workbook (EMEW)
Modeling File Names

Date: March 25, 2022
Permit #s: 38754
Company Name: Valero Refining Company - Texas LP

Model File Base Name	Pollutant	Averaging Time	File Extensions	Additional File Description

Year	98th Percentile	Annual Average
2018	18.10	7.76
2019	20.40	8.13
2020	20.40	7.27
3-yr avg	**19.63**	**7.72**

From:	Joe Kupper
To:	Justin Cherry
Cc:	Cara Hill; Chad Dumas; Beth Echels; Marquard, Meagan; "Arnosky, David (David.Arnosky@valero.com)"
Subject:	RE: Valero Refining-Texas LP AQA (Permit# 38754) Second Request for Additional Information
Date:	Tuesday, April 12, 2022 3:14:00 PM
Attachments:	EMEW Valero West Plant HOC 38754 04-12-2022.xlsx image001.png T6-4 MERA Step 3.pdf HOCProject_2016_UNIT_ST.DTA HOCProject_2016_UNIT_ST.LST HOCProject_2016_UNIT_ST.GRF HOCProject_2016_UNIT_ST.SUM

Justin,

Sorry about that. The EMEW value is correct; therefore, the unit impact modeling has been revised using the correct sigma-z for Model ID CASHOCPP. All supporting files associated with this change are attached.

Thanks, Joe

Joe Kupper, P.E.
Principal Consultant

9737 Great Hills Trail, Suite 340 Austin, TX 78759
P 512.693.4186 M 512.940.5516
Email: joe.kupper@trinityconsultants.com

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From: Justin Cherry <justin.cherry@tceq.texas.gov>
Sent: Tuesday, April 12, 2022 2:32 PM
To: Joe Kupper <Joe.Kupper@trinityconsultants.com>
Subject: RE: Valero Refining-Texas LP AQA (Permit# 38754) Second Request for Additional Information

Hey Joe,

Thank you for the quick response; however, the sigma z for Model ID CASHOCPP is still inconsistent between what was modeled and reported/calculated in the EMEW.

Thanks,
justin

From: Joe Kupper <Joe.Kupper@trinityconsultants.com>
Sent: Tuesday, April 12, 2022 2:14 PM

To: Justin Cherry <justin.cherry@tceq.texas.gov>
Cc: Cara Hill <Cara.Hill@Tceq.Texas.Gov>; Chad Dumas <Chad.Dumas@Tceq.Texas.Gov>; Meagan.Marquard@valero.com; 'Arnosky, David (David.Arnosky@valero.com)' <David.Arnosky@valero.com>; Beth Echels <Beth.Echels@trinityconsultants.com>
Subject: RE: Valero Refining-Texas LP AQA (Permit# 38754) Second Request for Additional Information

Justin,

Responses to your questions are shown below. Please let me know if you have nay questions

Thanks, Joe

Joe Kupper, P.E.
Principal Consultant

9737 Great Hills Trail, Suite 340 Austin, TX 78759
P 512.693.4186 M 512.940.5516
Email: joe.kupper@trinityconsultants.com

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From: Justin Cherry <justin.cherry@tceq.texas.gov>
Sent: Tuesday, April 12, 2022 6:47 AM
To: Joe Kupper <Joe.Kupper@trinityconsultants.com>
Cc: Cara Hill <Cara.Hill@Tceq.Texas.Gov>; Chad Dumas <Chad.Dumas@Tceq.Texas.Gov>
Subject: Valero Refining-Texas LP AQA (Permit# 38754) Second Request for Additional Information

Hey Joe,

The ADMT has some follow up items that need to be addressed before we can complete our review. Please address the following:

1. The release height and sigma z for Model ID CASHOCPP are reported as 4.57 meters and 4.25 meters, respectively but was modeled at 1.52 meters and 0.71 meters, respectively. Please address these discrepancies.

RESPONSE: The modeled values are correct. An updated EMEW is attached.

2. Please provide the calculations for the annual PM2.5 monitoring data.

RESPONSE: The annual average calculation has been added to the attached spreadsheet, "2019-2021 PM2.5 Ambient Data Donna Park.xlsx".

3. Although it doesn't change the overall conclusions, the reported 1-hr ammonia GLCmax is inconsistent with the ADMT's calculation. Please verify the 1-hr ammonia GLCmax.

RESPONSE: The Excel formulas (using SUMPRODCUT function) were checked and the results are the same as previously reported. The following shows the individual products of the emission rate * unit impact for each source and the sum of those products – this results is the same as previously reported.

	Emission Rate	Unit Impact	Product of Emission Rate * Unit Impact	
	lb/hr	mg/m3 per lb/hr	mg/m3	
30_B_05	2.18	1.73289	3.7777	
121HOC	4.84	0.12454	0.602774	
FUGCAP	0.01	27.83707	0.278371	
		TOTAL =	**4.658845**	**mg/m3**

Failure to submit all of the requested information within 7 business days of the date of this notification will delay the technical review of your application.

Feel free to contact me if you require any clarification or have any questions.

Thanks,
justin

Justin Cherry, P.E.
TCEQ
Air Permits Division
Air Dispersion Modeling Team
512-239-0955

Texas Commission on Environmental Quality
Electronic Modeling Evaluation Workbook (EMEW)
General

EMEW Version No.: Version 2.3

Purpose Statement:
This workbook is completed by the applicant and submitted to the Texas Commission on Environmental Quality (TCEQ), specifically, the Air Dispersion Modeling Team (ADMT) for review. This workbook is a tool available for all projects using AERSCREEN, AERMOD, or ISC/ISCPrime for an impacts review and its use is required starting June 1, 2019. Provide the workbook with the permit application submittal for any Minor New Source Review project requiring a modeling impacts demonstration.

This workbook follows the guidance outlined in the Air Quality Modeling Guidelines (APDG 6232) which can be found here:
https://www.tceq.texas.gov/assets/public/permitting/air/Modeling/guidance/airquality-mod-guidelines6232.pdf

Workbook Instructions:
1. Save a copy of the workbook to your computer or desktop prior to entering data.
2. Complete all required sections leaving no blanks. You may use the "tab" button or the arrow keys to move to the next available cell. Use "enter" to move down a line. Note: drop-downs are case-sensitive.
3. Fill in the workbook in order, do not skip around as this will cause errors. Use caution if changing a previously entered entry.
4. Not applicable sections of this workbook will be hidden as data is entered. For example, answering "No" to "Is downwash applicable? " will hide these sections of the workbook required only for downwash entry.
5. Email the workbook electronic file (EMEW) and any attachments to the Air Permits Initial Review Team. The subject line should read "Company Name - Permit Number (if known) - NSR Permit Application". Email address: apirt@tceq.texas.gov
6. If printing the EMEW, follow the directions below to create a workbook header.
7. Printing the EMEW is not required for submitting to the Air Permits Division (APD); however, you may need to print it for sending to the regional offices, local programs, and for public access if notice is required. To print the workbook, follow the instructions below. Please be aware, several sheets contain large amounts of data and caution should be taken if printing, such as the Speciated Emissions sheet.
8. Updates may be necessary throughout the review process. Updated workbooks must be submitted in electronic format to APD. For submittal to regional offices, local programs, or public places you only have to print sheets that had updates. Be sure to change the headers accordingly.

Note: Since this will be part of the permit application, follow the instructions in the Form PI-1 General Application on where to send copies of your EMEW and permit application. The Form PI-1 General Application can be found here:
https://www.tceq.texas.gov/permitting/air/guidance/newsourcereview/nsrapp-tools.html

Create Headers Before Printing:
1. Right-click one of the workbook's sheet tabs and "Select All Sheets."
2. Enter the "Page Layout View" by using the navigation ribbon's View > Workbook Views > Page Layout, or by clicking the page layout icon in the lower-right corner of Excel.
3. Add the date, company name, and permit number (if known) to the upper-right header. Note that this may take up to a minute to update your spreadsheet. Select any tab to continue working on the spreadsheet.

Printing Tips:
While APD does not need a hard copy of the full workbook, you may need to print it for sending to the regional offices, local programs, and for public access if notice is required.
1. The default printing setup for each sheet in the workbook is set for the TCEQ preferred format. The print areas are set up to not include the instructions on each sheet.
2. You have access to change all printing settings to fit your needs and printed font size. Some common options include:
   -Change what area you are printing (whole active sheet or a selection);
   -Change the orientation (portrait or landscape);
   -Change the margin size; and
   -Change the scaling (all columns on one sheet, full size, your own custom selection, etc.).

Texas Commission on Environmental Quality
Electronic Modeling Evaluation Workbook (EMEW)
General

Final Modeling Submittal:
Anytime final modeling files are being submitted the applicant should notify the following that modeling files are being sent: permit reviewer assigned, permit reviewer's supervisor, and the modeler assigned from the initial submittal.
The following options are available for an applicant to provide modeling (or any other files):
1. Applicant can mail or hand deliver the files on an external storage device.
2. Applicant can email files smaller than 25mb.
3. Applicant can transfer files through an FTP site:
   a. Applicant may have their own FTP site and can share the files with TCEQ staff.
   b. Applicants can use the TCEQ FTP site.

Instructions for setting up an account on the TCEQ FTP site are located at:
https://ftps.tceq.texas.gov/help/

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook (EMEW)

General

Acknowledgement:	Select from the drop down:
I acknowledge that I am submitting an authorized TCEQ Electronic Modeling Evaluation Workbook and any necessary attachments. Except for inputting the requested data, I have not changed the TCEQ Electronic Modeling Evaluation Workbook in any way, including but not limited to changing formulas, formatting, content, or protections.	I agree

Administrative Information:	
Data Type:	**Facility Information:**
Project Number (6 digits):	333877
Permit Number:	38754
Regulated Entity ID (9 digits):	100214386
Facility Name:	Valero Corpus Christi Refinery West Plant
Facility Address:	5400 Up River Rd Corpus Christi, TX 78407
Facility County (select one):	Nueces
Company Name:	Valero Refining - Texas, L.P.
Company Contact Name:	Ms. Meagan Marquard
Company Contact Number:	(361) 299-8913
Company Contact Email:	Meagan.Marquard@valero.com
Modeling Company Name, as applicable:	DiSorbo Consulting, LLC
Modeling Contact Name:	Joe Kupper, P.E.
Modeling Contact Number:	(512) 693-4186
Modeling Contact Email:	jkupper@disorboconsult.com
New/Existing Site (select one):	Existing Site
Modeling Date (MM/DD/YYYY):	3/25/2022
Datum Used (select one):	NAD 83
UTM Zone (select one):	14

Sheet Instructions: Indicate in the Table of Contents which sections are applicable and included for this modeling demonstration. Select "X" from the drop down if the item below is included in the workbook. Note: This workbook is only for the following air dispersion models: AERSCREEN, ISC/ISCPrime, and/or AERMOD. If SCREEN3 is used, please use the separate Electronic Modeling Evaluation Workbook (EMEW) for SCREEN3 workbook.

Table of Contents:

Section:	Sheet Title *(Click to jump to specific sheet):*	Select an X from the dropdown menu if included:
1	General	X
2	Model Options	X
3	Building Downwash	X
4	Flare Source Parameters	X
5	Point Source Parameters	X
6	Area Source Parameters	
7	Volume Source Calculations	X
8	Volume Source Parameters	X
9	Point and Flare Source Emissions	X
10	Area Source Emissions	
11	Volume Source Emissions	X
12	Speciated Emissions	
13	Intermittent Sources	
14	Modeling Scenarios	
15	Monitor Calculations	
16	Background Justification	
17	Secondary Formation of PM2.5	
18	NAAQS/State Property Line (SPL) Modeling Results	X
19	Unit Impact Multipliers	X
20	Health Effects Modeling Results	X
21	Modeling File Names	X
22	Speciated Chemicals	

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook (EMEW)

General

Date: March 25, 2022
Permit #s: 38754
Company Name: Valero Refining Company - Texas LP

Included Attachments Instructions: The following are attachments that must be included with any modeling analysis. If providing the plot plan and area map with the permit application, ensure there is also a copy with the EMEW. The copy can be electronic.	**Select an X from the dropdown menu if included:**
Plot Plan: Instructions: Mark all that apply in the attached plot plan. For larger properties or dense source areas, provide multiple zoomed in plot plans that are legible.	
Property/Fence Lines all visible and marked.	X
North arrow included.	X
Clearly marked scale.	X
All sources and buildings are clearly labeled.	X
Area Map:	
Instructions: Mark all that apply in the attached area map.	
Annotate schools within 3,000ft of source's nearest property line.	Choose an item
All property lines are included.	X
Non-industrial receptors are identified.	Choose an item
Additional Attachments (as applicable): *Note: These are just a few examples of attachments that may need to be included. There may be others depending on the scope of the modeling analysis.*	**Select an X from the dropdown menu if included:**
Processed Met Data Information	
Excel spreadsheet of processed meteorology data.	Choose an item
Meteorological Files (all input and outputs).	Choose an item
Source Group Descriptions	
Description of modeling source groups (could be in a tabulated format).	Choose an item
Modeling Techniques and Scenarios *Provide all justification and discussion on modeling scenarios used for the modeling analyses. The following boxes are examples of approaches that should be provided but is not all inclusive.*	
Discussion on modeling techniques not discussed in workbook.	Choose an item
Justification for exceedance refinements, as applicable.	Choose an item
Discussion and images for worst-case determination, as applicable.	Choose an item
Single Property Line Designation, as applicable	
Include Agreement, Order, and map defining each petitioner.	Choose an item
Post Processing using Unit Impact Multipliers (UIMs)	
Include documentation on any calculations used with the UIMs (i.e., Step 3 of the MERA).	X
Tier 3 NO_2 analysis *If OLM or PVMRM are used, provide all justification and documentation on using this approach.*	
Description of model setup.	Choose an item
Description and justification of model options selected (i.e., NO_2 to NO_x in-stack ratios).	Choose an item
Other Attachments *Provide a list in the box below of additional attachments being provided that are not listed above:*	

VAL_000626

Texas Commission on Environmental Quality

Date: March 25, 2022

Permit #s: 38754

Company Name: Valero Refining Company - Texas LP

Electronic Modeling Evaluation Workbook (EMEW)

Model Options

I. Project Information

A. Project Overview: In the box below, give a brief Project Overview. To type or insert text in box, double click in the box below. *Please limit your response to 2000 characters.*

Valero plans to undertake changes to the West Plant Heavy Oil Cracker (HOC), a type of fluidized catalytic cracking (FCC) unit. Due to the integrated nature of refinery operations, the project ("HOC Reconfiguration Project") will necessitate certain changes at other existing process units and will entail the construction of a new utility steam boiler, a new cooling tower, a new gas plant, a new sour water stripper, a new LPG Merox Treating Unit, a new Selective Hydrogenation Unit (SHU), a new C3/C4 Splitter Tower, and two new butane/butylene bullet tanks. MSS activities associated with the new equipment (e.g., new boiler) will be authorized as part of this project.

The non-PSD modeling information is contained in this EMEW (i.e., 1-hour SO2, H2S, H2SO4 SPL and MERA analyses).

II. Air Dispersion Modeling Preliminary Information

Instructions: Fill in the information below based on your modeling setup. The selections chosen in this sheet will carry throughout the sheet and workbook. Based on selections below, only portions of the sheet and workbook will be available. Therefore, it is vital the sheet and workbook are filled out in order, do NOT skip around.

For larger text boxes, double click to type or insert text.

A. Type of Model Used: *Select "X" in all that apply*

	AERSCREEN	X	AERMOD
21112	Enter in all applicable Model Version(s).		

B. Building Downwash

Yes	Is downwash applicable? *(Select "Yes" or "No")*
4274	Enter BPIP version (AERMOD and ISCPrime only).

C. Type of Analyses: (Select "X" in all that apply)
*PSD projects should submit a protocol and not utilize this form.

	Minor NSR NAAQS	X	State Property Line
X	Health Effects		

VAL_000627

D. Constituents Evaluating: (Select "X" in all that apply)

[redacted]

Tier 2: ARM 2	Identify the 1-hr NO_2 tier used for the AERMOD or AERSCREEN analyses.
Tier 2: ARM 2	Identify the annual NO_2 tier used for the AERMOD or AERSCREEN analyses.

[redacted]

State Property Line: List all pollutants that require a modeling review. *(Select "X" in all that apply)*

X	H_2S	X	SO_2
X	H_2SO_4		

Health Effects: Fill in the Speciated Emissions sheet with all applicable pollutants, CAS numbers, and ESLs.

Texas Commission on Environmental Quality
Electronic Modeling Evaluation Workbook (EMEW)
Model Options

E. Dispersion Options: *If "Urban" has been selected and this project is using AERMOD or AERSCREEN, include the population used. Select "X" in the box to select an option.*

X	Urban	162728	Population Used

Provide any additional justification on the dispersion option selected above:

Justifcation is provided in the AQA report.

F. Determination of Surface Roughness: *If AERSCREEN or AERMOD is used, fill out the section below.*

Select basis for surface roughness: AERSURFACE

Select "X" in one of the three surface roughness categories:

	Low	X	Medium
			High

If you are using AERSURFACE, please complete the following section:

20060	AERSURFACE Version Number		
649301.8	Center UTM Easting (meters)	3077917.6	Center UTM Northing (meters)
1	Study Radius (km)		
No	Airport? (Select Yes or No)		
No	Continuous Snow Cover (Select Yes or No)		
Average	Surface Moisture (Select Wet, Dry, or Average)		
No	Arid Region? (Select Yes or No)		
Default	Month/Season Assignment		

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Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook (EMEW)

Model Options

G. Meteorological Data:			
If AERMOD and/or ISC/ISCPrime are selected, please complete the following section:			
12924		Surface Station	
12924		Upper Air Station	
13.4	Meters (m)	Profile Base Elevation (AERMOD only)	
19191		AERMET Version Number	
Yes	Was TCEQ pre-processed data used?	Both	Years used
Please enter the year(s) selected for this meteorological data:			
2016	1 Year	2014-2018	5 Years
H2S, Generic, H2SO4		Which analysis(es) relied on 1 year?	
SO2		Which analysis(es) relied on 5 years?	
Provide any other justification for Meteorological Data, as applicable.			
Using 5-years of data for the 1-hour SO2 SPL modeling follows TCEQ's current guidance which notes that "if five years of meteorological data are used, then use the same five-year meteorological data for all applicable averaging periods for consistency."			

VAL_000630

Date: March 25, 2022
Permit #s: 38754
Company Name: Valero Refining Company - Texas LP

H. Receptor Grid:

For AERMOD or ISC/ISCPrime, fill in the following information on your modeled receptor grid. Note: Receptor grid resolution (tight, fine, medium, coarse) are based on recommended receptor grid spacing per the AQMG, if something outside of this is used, fully describe it below.

25	Meters (m)	Tight Receptor Spacing
200	Meters (m)	Tight Receptor Distance
100	Meters (m)	Fine Receptor Spacing
1000	Meters (m)	Fine Receptor Distance
500	Meters (m)	Medium Receptor Spacing
10000	Meters (m)	Medium Receptor Distance
	Meters (m)	Coarse Receptor Spacing
	Meters (m)	Coarse Receptor Distance

Describe any other receptor grid designs (over water, GLC_{ni}, SPLD etc.):

I. Terrain:

X	Elevated
18081	AERMAP Version.

For additional justification on terrain selection, fill in the box below:

VAL_000631

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook (EMEW)

Building Downwash

Date: March 25, 2022
Permit #s: 38754
Company Name: Valero Refining Company - Texas LP

Facility:

Downwash Type	Modeled Building ID	Tank Diameter (m)	Number of Tiers	Maximum Height (m)	Tier 1 Height (m)	Tier 2 Height (m)	Tier 3 Height (m)
Building	BLDG1		1	9.14	9.14		
Building	BLDG2		1	3.05	3.05		
Building	BLDG3		1	4.57	4.57		
Building	BLDG4		1	4.57	4.57		
Building	BLDG5		1	3.05	3.05		
Building	BLDG6		1	3.05	3.05		
Building	BLDG7		1	4.57	4.57		
Building	BLDG8		1	6.1	6.1		
Building	BLDG9		1	3.05	3.05		
Building	BLDG10		1	4.57	4.57		
Building	BLDG11		1	3.05	3.05		
Building	BLDG12		1	7.62	7.62		
Building	BLDG13		1	6.71	6.71		
Building	BLDG14		1	24.99	24.99		
Building	BLDG16		1	7.62	7.62		
Building	BLDG18		1	12	12		
Building	BLDG29		1	4.57	4.57		
Building	BLDG109		1	4.57	4.57		
Building	BLDG110		1	4.57	4.57		
Building	BLDG136		1	4.57	4.57		
Building	BLDG142		1	3.05	3.05		
Building	BLDG154		1	7.62	7.62		
Building	BLDG159		1	4.57	4.57		
Building	BLDG161		1	6.1	6.1		
Building	BLDG50		1	4.57	4.57		
Building	BLDG55		1	4.57	4.57		
Building	BLDG83		1	6.1	6.1		
Building	122CT		1	15.24	15.24		
Building	BUP_CT		1	13.72	13.72		
Building	BLDG156		1	12.19	12.19		
Building	BLDG89		1	7.62	7.62		
Building	BLDG90		1	3.66	3.66		
Building	BLDG91		1	4.57	4.57		
Building	BU_CR		1	15.24	15.24		
Building	MCC		1	12	12		

Texas Commission on Environmental Quality
Electronic Modeling Evaluation Workbook (EMEW)
Building Downwash

Date: March 25, 2022
Permit #s: 38754
Company Name: Valero Refining Company - Texas LP

Downwash Type	Modeled Building ID	Tank Diameter (m)	Number of Tiers	Maximum Height (m)	Tier 1 Height (m)	Tier 2 Height (m)	Tier 3 Height (m)
Building	Powerhou		3	15.24	3.66	7.92	15.24
Building	CT901		1	13.72	13.72		
Building	13L01V1		1	27.43	27.43		
Building	13L01V2		1	27.43	27.43		
Building	13L01V3		1	27.43	27.43		
Building	38VESE		1	27.43	27.43		
Building	38VESF		1	13.72	13.72		
Building	38VESG		1	13.72	13.72		
Building	38VESH		1	13.72	13.72		
Building	76-V-03A		1	4.57	4.57		
Building	76-V-03B		1	4.57	4.57		
Building	76-V-03C		1	4.57	4.57		
Building	76-V-03D		1	4.57	4.57		
Building	83V80		1	6.4	6.4		
Building	83V83		1	7.62	7.62		
Building	83V84		1	7.62	7.62		
Building	83V84B		1	4.57	4.57		
Building	83V87		1	6.4	6.4		
Building	col1		1	21	21		
Building	col2		1	21	21		
Building	col3		1	18	18		
Building	col4		1	13	13		
Building	col5		1	21	21		
Building	col6		1	21	21		
Building	col7		1	18	18		
Building	col8		1	13	13		
Tank	24TK01	9.36	1	12.19	12.19		
Tank	24TK02	9.13	1	7.32	7.32		
Tank	43TK08	4.46	1	6.1	6.1		
Tank	70a_tk66	24.99	1	16.46	16.46		
Tank	70a_tk67	24.99	1	16.46	16.46		
Tank	70a_tk68	24.99	1	16.46	16.46		
Tank	tank1	8	1	6.5	6.5		
Tank	tank2	8	1	6.5	6.5		
Tank	tank3	8	1	6.5	6.5		
Tank	tank4	10	1	10	10		
Tank	tank5	10	1	10	10		
Tank	TK-1	27.43	1	14.63	14.63		
Tank	TK-10	36.58	1	14.63	14.63		
Tank	TK-100	13.72	1	12.19	12.19		

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook (EMEW)

Building Downwash

Date: March 25, 2022
Permit #s: 38754
Company Name: Valero Refining Company - Texas LP

Downwash Type	Modeled Building ID	Tank Diameter (m)	Number of Tiers	Maximum Height (m)	Tier 1 Height (m)	Tier 2 Height (m)	Tier 3 Height (m)
Tank	TK-101	30.48	1	12.19	12.19		
Tank	TK-102	30.48	1	12.19	12.19		
Tank	TK-103	18.29	1	12.19	12.19		
Tank	TK-104	30.48	1	12.19	12.19		
Tank	TK-105	30.48	1	12.19	12.19		
Tank	TK-106	30.48	1	12.19	12.19		
Tank	TK-107	30.48	1	11.89	11.89		
Tank	TK-108	30.48	1	12.19	12.19		
Tank	TK-109	18.29	1	12.19	12.19		
Tank	TK-11	36.58	1	16.46	16.46		

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook (EMEW)

Building Downwash

Date: March 25, 2022
Permit #s: 38754
Company Name: Valero Refining Company - Texas LP

Downwash Type	Modeled Building ID	Tank Diameter (m)	Number of Tiers	Maximum Height (m)	Tier 1 Height (m)	Tier 2 Height (m)	Tier 3 Height (m)
Tank	TK-110	18.29	1	12.19	12.19		
Tank	TK-111	44.81	1	15.24	15.24		
Tank	TK-112	44.81	1	15.24	15.24		
Tank	TK-113	42.67	1	15.24	15.24		
Tank	TK-114	28.96	1	19.81	19.81		
Tank	TK-115	27.43	1	15.85	15.85		
Tank	TK-116	18.29	1	15.85	15.85		
Tank	TK-12	36.58	1	16.46	16.46		
Tank	TK-13	36.58	1	16.46	16.46		
Tank	TK-139	36.58	1	12.19	12.19		
Tank	TK-14	54.86	1	17.37	17.37		
Tank	TK-149	27.43	1	16.46	16.46		
Tank	TK-15	54.86	1	17.37	17.37		
Tank	TK-150	27.43	1	16.46	16.46		
Tank	TK-151	59.14	1	17.37	17.37		
Tank	TK-152	59.14	1	17.37	17.37		
Tank	TK-153	59.13	1	17.37	17.37		
Tank	TK-154	59.13	1	17.37	17.37		
Tank	TK-155	36.57	1	14.94	14.94		
Tank	TK-156	13.72	1	12.19	12.19		
Tank	TK-157	13	1	10	10		
Tank	TK-158	13	1	10	10		
Tank	TK-159	12.2	1	14.63	14.63		
Tank	TK-16	27.43	1	16.46	16.46		
Tank	TK-160	12.19	1	14.63	14.63		
Tank	TK-161	13.72	1	12.19	12.19		
Tank	TK-163	58.83	1	17.37	17.37		
Tank	TK-164	58.83	1	16.46	16.46		
Tank	TK-17	27.43	1	16.46	16.46		
Tank	TK-18	27.43	1	16.46	16.46		
Tank	TK-19	19.35	1	16.46	16.46		
Tank	TK-2	45.72	1	14.63	14.63		
Tank	TK-20	19.35	1	16.46	16.46		
Tank	TK-23	33.53	1	12.19	12.19		
Tank	TK-24	30.48	1	5.18	5.18		
Tank	TK-25	32.92	1	14.94	14.94		
Tank	TK-26	12.19	1	14.63	14.63		
Tank	TK-27	32.5	1	14.3	14.3		
Tank	TK-3	27.43	1	14.63	14.63		
Tank	TK-4	27.43	1	14.63	14.63		

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook (EMEW)

Building Downwash

Date: March 25, 2022
Permit #s: 38754
Company Name: Valero Refining Company - Texas LP

Downwash Type	Modeled Building ID	Tank Diameter (m)	Number of Tiers	Maximum Height (m)	Tier 1 Height (m)	Tier 2 Height (m)	Tier 3 Height (m)
Tank	TK-5	42.67	1	17.68	17.68		
Tank	TK-51	18.29	1	14.33	14.33		
Tank	TK-52	44.81	1	15.24	15.24		
Tank	TK-53	44.81	1	15.24	15.24		
Tank	TK-54	44.81	1	14.94	14.94		
Tank	TK-55	28.04	1	15.24	15.24		
Tank	TK-56	28.04	1	15.24	15.24		
Tank	TK-57	35.36	1	17.37	17.37		
Tank	TK-58	28.04	1	17.37	17.37		
Tank	TK-59	35.36	1	17.37	17.37		
Tank	TK-6	42.67	1	17.68	17.68		
Tank	TK-60	28.04	1	15.24	15.24		
Tank	TK-61	35.37	1	17.37	17.37		
Tank	TK-62	27.79	1	15.85	15.85		
Tank	TK-63	29.15	1	15.85	15.85		
Tank	TK-64	28.96	1	18.9	18.9		
Tank	TK-65	28.96	1	18.9	18.9		
Tank	TK-7	42.67	1	17.68	17.68		
Tank	TK-75	18.29	1	13.72	13.72		
Tank	TK-76	27.5	1	16.46	16.46		
Tank	TK-77	18.29	1	12.8	12.8		
Tank	TK-78	18.29	1	12.8	12.8		
Tank	TK-8	42.67	1	17.68	17.68		
Tank	TK-84	35	1	6.1	6.1		
Tank	TK-85	35	1	6.1	6.1		
Tank	TK-9	9.14	1	7.32	7.32		
Tank	TK-93	13.72	1	12.19	12.19		
Tank	TK-94	13.72	1	12.19	12.19		
Tank	TK-95	13.72	1	12.19	12.19		
Tank	TK-96	13.72	1	12.19	12.19		
Tank	TK-97	13.72	1	12.19	12.19		
Tank	TK-98	13.72	1	12.19	12.19		
Tank	TK-99	13.72	1	12.19	12.19		
Tank	TRIFIN-1	29.25	1	12.19	12.19		
Tank	TRIFIN-2	23.86	1	12.19	12.19		
Tank	TRIFIN-3	22.58	1	12.19	12.19		
Tank	TRIFIN-4	23.24	1	12.19	12.19		
Tank	TRIFIN-5	44.66	1	12.19	12.19		
Tank	TRIFIN-6	44.61	1	12.19	12.19		
Tank	TRIFIN-7	34.96	1	12.19	12.19		

VAL_000636

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook (EMEW)

Building Downwash

Date: March 25, 2022
Permit #s: 38754
Company Name: Valero Refining Company - Texas LP

Downwash Type	Modeled Building ID	Tank Diameter (m)	Number of Tiers	Maximum Height (m)	Tier 1 Height (m)	Tier 2 Height (m)	Tier 3 Height (m)
Tank	TRIFIN-8	29.29	1	12.19	12.19		
Tank	TK_59WW	11.06	1	8.53	8.53		
Tank	TK_58WW	11.06	1	8.53	8.53		
Tank	TK-162	35.83	1	14.94	14.94		
Tank	TK16P04	1.52	1	1.52	1.52		
Tank	TK16P03	1.53	1	1.52	1.52		
Tank	TK16P02	1.53	1	1.52	1.52		
Tank	TK16P01	1.52	1	1.52	1.52		
Tank	TANK_A	10.94	1	6.1	6.1		
Tank	TK_97WW	4.54	1	9.14	9.14		
Tank	TK_C	10.39	1	7.62	7.62		
Tank	TK_D	6.92	1	7.62	7.62		
Tank	TK_E	4.07	1	7.62	7.62		
Tank	TK-167	68.58	1	18.29	18.29		
Tank	TK-166	68.58	1	18.29	18.29		
Tank	TK-188	59.14	1	17.37	17.37		

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook (EMEW)

Flare Source Parameters

Date: March 25, 2022

Permit #s: 38754

Company Name: Valero Refining Company - Texas LP

Facility:

EPN	Model ID	Modeling Scenario	Easting: X [m]	Northing: Y [m]	Base Elevation [m]	Height [m]	Exit Temperature [K]	Exit Velocity [m/s]	Heat Release (MMBtu/hr)	Molecular Weight	Gross Heat Release or q (cal/s)	Net Heat Release or q_n (cal/s)	Effective Diameter or D (meters)	Description
126	126		648976.00	3077720.00	9.18	83.82	1273.00	20.00	18.17	56.00	1272169.913	815207.6135	0.903	Main Flare
127	127		649943.00	3077713.00	8.45	83.82	1273.00	20.00	18.17	56.00	1272169.913	815207.6135	0.903	BUP Flare
158	158		648940.00	3077762.00	9.22	7.32	1273.00	20.00	18.17	56.00	1272169.913	815207.6135	0.903	Ground Flare
126	MSSFLR		648976.00	3077720.00	9.18	83.82	1273.00	20.00	1000.00	6.20	70000000	61633667.47	7.85	MSS Flaring
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
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							1273.00	20.00			0	0	0	
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							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	
							1273.00	20.00			0	0	0	

Texas Commission on Environmental Quality
Electronic Modeling Evaluation Workbook (EMEW)
Point Source Parameters

Date: March 25, 2022
Permit #s: 38754
Company Name: Valero Refining Company - Texas LP

Facility:

EPN	Model ID	Modeling Scenario	Source Description	Point Source Type	Point Source Justification	Easting: X [m]	Northing: Y [m]	Base Elevation [m]	Height [m]	Exit Temperature [K]	Exit Velocity [m/s]	Diameter [m]
121	121HOC		Heavy Oil Cracker (HOC) Belco Scrubber	POINT	Vertical stack; Actual Parameters	649347.00	3077978.00	9.02	68.58	358.150	21.063	4.267
HOC-PP-CT	HOCPPCT		New Cooling Tower	POINT	Vertical stack; Actual Parameters	649719.00	3077951.00	8.86	12.19	-5.500	7.315	7.315
121/ 30-B-05	MEROX		New MEROX Vent	POINT	Vertical stack; Actual Parameters	649645.00	3077940.00	8.89	18.29	422.039	14.592	2.388
30-B-05	30_B_05		Boiler 30-B-05 (Routine)	POINT	Vertical stack; Actual Parameters	649645.00	3077940.00	8.89	18.29	422.039	14.592	2.388
121	121SRU		Sulfur Recovery	POINT	Vertical stack; Actual Parameters	649347.00	3077978.00	9.02	68.59	358.148	21.063	4.267
168	168		Oleflex CCR	POINT	Vertical stack; Actual Parameters	649743.44	3077684.60	8.93	30.48	449.817	9.022	1.067
1	1		Heater - Crude Heater (01-H-01)	POINT	Vertical stack; Actual Parameters	648858.00	3077931.00	4.64	36.88	449.817	7.772	2.103
74	74		Vacuum Heater	POINT	Vertical stack; Actual Parameters	648842.04	3077900.86	4.59	33.83	666.483	10.119	1.707
114	114		Heater - Desalter Heater (11-H-01)	POINT	Vertical stack; Actual Parameters	649241.16	3077780.45	8.96	30.48	449.817	17.160	1.128
115	115		HDS Heaters	POINT	Vertical stack; Actual Parameters	649479.42	3077746.49	8.93	27.43	449.817	8.992	1.859
116	116		Heater - HDS Pre-Heater (12-H-02)	POINT	Vertical stack; Actual Parameters	649315.00	3077772.00	8.93	15.24	683.150	10.759	1.006
117	117		Heater - Alky Frac. Reb. (31-H-01)	POINT	Vertical stack; Actual Parameters	649489.17	3077810.44	8.95	27.43	449.817	21.031	1.067
118	118		Hydrogen Reformer Heater	POINT	Vertical stack; Actual Parameters	649222.00	3077857.00	8.94	36.88	449.817	15.057	3.627
119	119		Heater - Sulften Heater (46-H-01)	POINT	Vertical stack; Actual Parameters	649319.00	3078050.00	8.99	28.65	449.817	2.438	1.280
120	120		Heater - Butamer Heater (36-H-01)	POINT	Vertical stack; Actual Parameters	649707.70	3077865.45	8.82	24.69	449.817	1.585	1.280
124	124		WWTP Control Device	POINT	Vertical stack; Actual Parameters	649175.00	3078106.00	9.18	6.10	963.706	2.225	1.128
131	131		Heater - Crude Preflash (01-H-02)	POINT	Vertical stack; Actual Parameters	648844.00	3077912.00	4.61	9.14	449.817	9.022	1.067
132	132		Heater - Crude Stabilizer (01-H-03)	POINT	Vertical stack; Actual Parameters	648838.00	3077913.00	4.56	23.47	785.928	6.431	0.914
150	150		HCU Heater	POINT	Vertical stack; Actual Parameters	649415.00	3077685.00	8.97	39.93	449.817	12.040	1.920
151	151		Heater - NHU Heater (48-H-01)	POINT	Vertical stack; Actual Parameters	649237.61	3077636.79	9.16	35.36	622.039	4.877	1.219
152	152		CRU Heater	POINT	Vertical stack; Actual Parameters	649204.25	3077649.57	9.09	64.92	449.817	8.047	3.353
153	153		Heater - HR Boiler (30-B-02)	POINT	Vertical stack; Actual Parameters	649547.71	3077865.02	8.90	15.24	449.817	9.906	2.134
162	162		Oleflex Heater	POINT	Vertical stack; Actual Parameters	649715.06	3077645.35	8.94	64.92	449.817	5.334	3.048
172	172		Heater - RSU Heater (49-H-71)	POINT	Vertical stack; Actual Parameters	649197.60	3077741.90	8.99	44.81	449.817	13.015	1.295
195	195		Heater - GDU Charge Heater (52-H- 01)	POINT	Vertical stack; Actual Parameters	649108.50	3077696.70	9.16	52.73	550.372	5.852	2.743
16-P-04	16_P_04		Engine - 16-P-04	POINT	Vertical stack; Actual Parameters	649567.00	3077680.00	8.96	2.13	588.706	0.001	0.001
16-P-07	16_P_07		Engine - 16-P-07	POINT	Vertical stack; Actual Parameters	649595.00	3077662.00	8.96	2.13	588.706	0.001	0.001

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook (EMEW)

Point Source Parameters

Date: March 25, 2022
Permit #s: 38754
Company Name: Valero Refining Company - Texas LP

EPN	Model ID	Modeling Scenario	Source Description	Point Source Type	Point Source Justification	Easting: X [m]	Northing: Y [m]	Base Elevation [m]	Height [m]	Exit Temperature [K]	Exit Velocity [m/s]	Diameter [m]
16-P-11	16_P_11		Engine - 16-P-11	POINT	Vertical stack; Actual Parameters	649978.00	3077684.00	8.26	2.13	752.039	41.148	0.204
16-P-12	16_P_12		Engine - 16-P-12	POINT	Vertical stack; Actual Parameters	649981.00	3077690.00	8.26	2.13	752.039	41.148	0.204
16-P-13	16_P_13		Engine - 16-P-13	POINT	Vertical stack; Actual Parameters	649983.00	3077697.00	8.26	2.13	752.039	41.148	0.204
16-P-14	16_P_14		Engine - 16-P-14	POINT	Vertical stack; Actual Parameters	649985.00	3077703.00	8.26	2.13	752.039	41.148	0.204
30-B-04	30_B_04		Boiler 30-B-04	POINT	Vertical stack; Actual Parameters	649600.00	3077800.00	8.87	18.29	477.594	17.374	2.438
49-H-90	49_H_90		Heater - C7 Splitter Reb. (49-H-90)	POINT	Vertical stack; Actual Parameters	649185.64	3077705.19	9.00	48.77	449.817	4.420	1.524
83-P-136A	83P_136A		Engine 83-P-136A-EN	POINT	Vertical stack; Actual Parameters	649252.00	3078160.00	9.26	3.05	588.706	0.001	0.001
83-P-136B	83P_136B		Engine 83-P-136B-EN	POINT	Vertical stack; Actual Parameters	649253.20	3078164.00	9.26	3.05	588.706	0.001	0.001
TRUCKCOMB	TRKVCU		Loading - Truck Combustor	POINT	Vertical stack; Actual Parameters	648838.00	3077708.00	6.70	10.67	1033.150	4.572	1.829
MSS CAPS	MSSTK4		Tank MSS	POINT	Vertical stack; Actual Parameters	648701.00	3077843.00	4.86	3.89	1033.150	7.254	1.554
MSS CAPS	MSSTK7		Tank MSS	POINT	Vertical stack; Actual Parameters	648831.55	3078015.65	4.42	3.89	1033.150	7.254	1.554
MSS CAPS	MSSTK11		Tank MSS	POINT	Vertical stack; Actual Parameters	649145.84	3078271.94	4.33	3.89	1033.150	7.315	1.554
MSS CAPS	MSSTK12		Tank MSS	POINT	Vertical stack; Actual Parameters	649196.49	3078201.81	9.11	3.89	1033.150	7.254	1.554

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook (EMEW)

Point Source Parameters

Date: March 25, 2022
Permit #s: 38754
Company Name: Valero Refining Company - Texas LP

EPN	Model ID	Modeling Scenario	Source Description	Point Source Type	Point Source Justification	Easting: X [m]	Northing: Y [m]	Base Elevation [m]	Height [m]	Exit Temperature [K]	Exit Velocity [m/s]	Diameter [m]
MSS CAPS	MSSSRU		SRU Startup/Shutdown	POINT	Vertical stack; Actual Parameters	649347.00	3077978.00	9.02	68.58	358.150	21.063	4.267
MSS CAPS	MSSHOC		HOC Startup/Shutdown	POINT	Vertical stack; Actual Parameters	649347.00	3077978.00	9.02	68.58	358.150	21.063	4.267
MSS CAPS	MSSDECOK		Heater Decoking	POINT	Vertical stack; Actual Parameters	648865.00	3077905.00	4.69	6.10	533.150	42.988	0.203
163	163		Boiler 30-B-03	POINT	Vertical stack; Actual Parameters	649626.00	3077895.00	8.69	38.40	449.817	8.291	1.372
49-H-91	49_H_91		C8 Splitter Reboiler	POINT	Vertical stack; Actual Parameters	649194.46	3077724.36	8.99	51.21	449.817	19.873	2.057
900	900		Process Heater	POINT	Vertical stack; Actual Parameters	649611.34	3077685.95	8.96	54.86	422.039	4.206	3.536
909	909		Vapor Combustion Unit	POINT	Vertical stack; Actual Parameters	649495.49	3078163.69	2.19	18.29	1144.261	15.240	3.658
TKVCU	TKVCU		West Plant Storage Tank VCU	POINT	Vertical stack; Actual Parameters	648850.00	3077958.00	4.52	10.67	1033.150	9.144	2.347
PVCU	C_PVCU		LPG VCU	POINT	Vertical stack; Actual Parameters	649160.00	3078322.00	6.70	5.49	810.928	6.706	1.798

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook (EMEW)

Volume Source Calculations

Date: March 25, 2022
Permit #s: 38754
Company Name: Valero Refining Company - Texas LP

Facility:

EPN	Model ID	Footprint of Source Length (m)	Footprint of Source Width (m)	Length of Side (making it a square) SQRT(L * W)	Type of Volume Source (sigma y) *Pick from drop-down*	**Sigma Y** (m)	Vertical Span Min Release (m)	Vertical Span Max Release (m)
21/22F	22_21F	15.24	15.24	15.24	Single Volume Source	3.54	0.00	9.14
42F	42F	15.24	15.24	15.24	Single Volume Source	3.54	0.00	9.14
FUG-CAP	FUGCAP	45.72	45.72	45.72	Single Volume Source	10.63	0.00	9.14
CAS-HOCPP	CASHOCPP	0.30	0.30	0.30	Single Volume Source	0.07	0.00	3.05
				0.00		Incomplete		
				0.00		Incomplete		
				0.00		Incomplete		
				0.00		Incomplete		
				0.00		Incomplete		
				0.00		Incomplete		
				0.00		Incomplete		
				0.00		Incomplete		
				0.00		Incomplete		
				0.00		Incomplete		
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				0.00		Incomplete		
				0.00		Incomplete		
				0.00		Incomplete		

VAL_000642

Texas Commission on Environmental Quality
Electronic Modeling Evaluation Workbook (EMEW)
Volume Source Calculations

Date: March 25, 2022
Permit #s: 38754
Company Name: Valero Refining Company - Texas LP

Vertical Dimension (m)	Type of Volume Source (sigma z) *Pick from drop-down*	Release Height (middle point of vertical span) (m)	Building Name (if on/adjacent to a building) *Pick from drop-down*	Adjacent Building Height, if applicable (m)	**Sigma Z** (m)
9.14	Surface-Based Source	4.57			4.25
9.14	Surface-Based Source	4.57			4.25
9.14	Surface-Based Source	4.57			4.25
3.05	Surface-Based Source	1.52			1.42
0.00		0.00			Incomplete
0.00		0.00			Incomplete
0.00		0.00			Incomplete
0.00		0.00			Incomplete
0.00		0.00			Incomplete
0.00		0.00			Incomplete
0.00		0.00			Incomplete
0.00		0.00			Incomplete
0.00		0.00			Incomplete
0.00		0.00			Incomplete
0.00		0.00			Incomplete
0.00		0.00			Incomplete
0.00		0.00			Incomplete
0.00		0.00			Incomplete
0.00		0.00			Incomplete
0.00		0.00			Incomplete
0.00		0.00			Incomplete
0.00		0.00			Incomplete
0.00		0.00			Incomplete
0.00		0.00			Incomplete
0.00		0.00			Incomplete
0.00		0.00			Incomplete
0.00		0.00			Incomplete
0.00		0.00			Incomplete
0.00		0.00			Incomplete
0.00		0.00			Incomplete
0.00		0.00			Incomplete
0.00		0.00			Incomplete
0.00		0.00			Incomplete
0.00		0.00			Incomplete
0.00		0.00			Incomplete
0.00		0.00			Incomplete
0.00		0.00			Incomplete
0.00		0.00			Incomplete
0.00		0.00			Incomplete
0.00		0.00			Incomplete
0.00		0.00			Incomplete
0.00		0.00			Incomplete
0.00		0.00			Incomplete
0.00		0.00			Incomplete

VAL_000643

Texas Commission on Environmental Quality
Electronic Modeling Evaluation Workbook (EMEW)
Volume Source Parameters

Date: March 25, 2022
Permit #s: 38754
Company Name: Valero Refining Company - Texas LP

Facility:

EPN	Model ID	Modeled Release Height [m]	Modeled Length X [m]	Lateral Dimension SigmaY [m]	Vertical Dimension SigmaZ [m]	Modeling Scenario	Easting: X [m]	Northing: Y [m]	Base Elevation [m]	Source Description	Volume Source Size Justification
21/22F	22_21F	4.57	15.24	3.54	4.25		649484.00	3077928.00	9.06	HOC Unit Fugitives	Represntatve size of the area where piping fugitives are located
42F	42F	4.57	15.24	3.54	4.25		649289.00	3078010.00	9.03	Sour Wtr, Stripper Fugitives	Represntatve size of the area where piping fugitives are located
FUG-CAP	FUGCAP	4.57	45.72	10.63	4.25		649628.00	3077970.00	9.07	Piping Fugitives	Represntatve size of the area where piping fugitives are located
CAS-HOCPP	CASHOCPP	1.52	0.30	0.07	1.42		649628.00	3077970.00	9.07	HOC Gas Plant Wastewater Lift Statation	Small source to represent the emissions for a CAS

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook (EMEW)

Point + Flare Emissions

Date: March 25, 2022
Permit #s: 38754
Company Name: Valero Refining Company - Texas LP

Facility:

EPN	Model ID	Modeling Scenario	Pollutant	Modeled Averaging Time	Standard Type	Review Context	Intermittent Source?	Modeled Emission Rate [lb/hr]	Basis of Emission Rate	Scalars or Factors Used?
126	126	0	Generic	1-hr			No	1.00	Unit rate of 1 lb/hr	No
127	127	0	Generic	1-hr			No	1.00	Unit rate of 1 lb/hr	No
158	158	0	Generic	1-hr			No	1.00	Unit rate of 1 lb/hr	No
121	121HOC	0	Generic	1-hr			No	1.00	Unit rate of 1 lb/hr	No
HOC-PP-CT	HOCPPCT	0	Generic	1-hr			No	1.00	Unit rate of 1 lb/hr	No
121/30-B-05	MEROX	0	Generic	1-hr			No	1.00	Unit rate of 1 lb/hr	No
30-B-05	30_B_05	0	Generic	1-hr			No	1.00	Unit rate of 1 lb/hr	No
126	126	0	Generic	Annual			No	1.00	Unit rate of 1 tpy	No
127	127	0	Generic	Annual			No	1.00	Unit rate of 1 tpy	No
158	158	0	Generic	Annual			No	1.00	Unit rate of 1 tpy	No
121/30-B-05	MEROX	0	H2S	1-hr	State Property Line	Project Wide	No	0.00100	Project emission rate increase	No
121	121SRU	0	H2S	1-hr	State Property Line	Project Wide	No	0.110	Project emission rate increase	No
126	126	0	H2S	1-hr	State Property Line	Project Wide	No	1.00E-06	Project emission rate increase	No
21/22F	22_21F	0	H2S	1-hr	State Property Line	Project Wide	No	0.00432	Project emission rate increase	No
42F	42F	0	H2S	1-hr	State Property Line	Project Wide	No	4.11E-04	Project emission rate increase	No
FUG-CAP	FUGCAP	0	H2S	1-hr	State Property Line	Project Wide	No	0.0128	Project emission rate increase	No
121	121HOC	0	H2SO4	1-hr	State Property Line	Site Wide	No	49.00	Max allowable rate	No
168	168	0	H2SO4	1-hr	State Property Line	Site Wide	No	0.0100	Max allowable rate	No
121	121HOC	0	H2SO4	24-hr	State Property Line	Site Wide	No	49.00	Max allowable rate	No
168	168	0	H2SO4	24-hr	State Property Line	Site Wide	No	0.0100	Max allowable rate	No
30-B-05	30_B_05	0	SO2	1-hr	State Property Line	Site Wide	No	7.70	Max allowable rate	No
121/30-B-05	MEROX	0	SO2	1-hr	State Property Line	Site Wide	No	3.86	Max allowable rate	No
1	1	0	SO2	1-hr	State Property Line	Site Wide	No	2.50	Max allowable rate	No
74	74	0	SO2	1-hr	State Property Line	Site Wide	No	1.37	Max allowable rate	No
114	114	0	SO2	1-hr	State Property Line	Site Wide	No	1.52	Max allowable rate	No
115	115	0	SO2	1-hr	State Property Line	Site Wide	No	2.49	Max allowable rate	No
116	116	0	SO2	1-hr	State Property Line	Site Wide	No	0.300	Max allowable rate	No
117	117	0	SO2	1-hr	State Property Line	Site Wide	No	2.41	Max allowable rate	No
118	118	0	SO2	1-hr	State Property Line	Site Wide	No	44.53	Max allowable rate	No
119	119	0	SO2	1-hr	State Property Line	Site Wide	No	0.340	Max allowable rate	No
120	120	0	SO2	1-hr	State Property Line	Site Wide	No	0.260	Max allowable rate	No
121	121HOC	0	SO2	1-hr	State Property Line	Site Wide	No	219.22	Max allowable rate	No
121	121SRU	0	SO2	1-hr	State Property Line	Site Wide	No	191.32	Max allowable rate	No
124	124	0	SO2	1-hr	State Property Line	Site Wide	No	0.0300	Max allowable rate	No
131	131	0	SO2	1-hr	State Property Line	Site Wide	No	0.270	Max allowable rate	No
132	132	0	SO2	1-hr	State Property Line	Site Wide	No	0.0700	Max allowable rate	No
150	150	0	SO2	1-hr	State Property Line	Site Wide	No	3.13	Max allowable rate	No
151	151	0	SO2	1-hr	State Property Line	Site Wide	No	0.600	Max allowable rate	No
152	152	0	SO2	1-hr	State Property Line	Site Wide	No	9.80	Max allowable rate	No
153	153	0	SO2	1-hr	State Property Line	Site Wide	No	4.34	Max allowable rate	No
162	162	0	SO2	1-hr	State Property Line	Site Wide	No	5.99	Max allowable rate	No
172	172	0	SO2	1-hr	State Property Line	Site Wide	No	1.02	Max allowable rate	No
195	195	0	SO2	1-hr	State Property Line	Site Wide	No	2.55	Max allowable rate	No
16-P-04	16_P_04	0	SO2	1-hr	State Property Line	Site Wide	No	0.0475	Max allowable rate	No
16-P-07	16_P_07	0	SO2	1-hr	State Property Line	Site Wide	No	0.0575	Max allowable rate	No
16-P-11	16_P_11	0	SO2	1-hr	State Property Line	Site Wide	No	0.0197	Max allowable rate	No

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook (EMEW)

Point + Flare Emissions

Date: March 25, 2022
Permit #s: 38754
Company Name: Valero Refining Company - Texas LP

EPN	Model ID	Modeling Scenario	Pollutant	Modeled Averaging Time	Standard Type	Review Context	Intermittent Source?	Modeled Emission Rate [lb/hr]	Basis of Emission Rate	Scalars or Factors Used?
16-P-12	16_P_12	0	SO2	1-hr	State Property Line	Site Wide	No	0.0197	Max allowable rate	No
16-P-13	16_P_13	0	SO2	1-hr	State Property Line	Site Wide	No	0.0197	Max allowable rate	No
16-P-14	16_P_14	0	SO2	1-hr	State Property Line	Site Wide	No	0.0197	Max allowable rate	No
30-B-04	30_B_04	0	SO2	1-hr	State Property Line	Site Wide	No	8.65	Max allowable rate	No
49-H-90	49_H_90	0	SO2	1-hr	State Property Line	Site Wide	No	1.64	Max allowable rate	No
83-P-136A	83P_136A	0	SO2	1-hr	State Property Line	Site Wide	No	0.0441	Max allowable rate	No
83-P-136B	83P_136B	0	SO2	1-hr	State Property Line	Site Wide	No	0.0441	Max allowable rate	No
TRUCKCOMB	TRKVCU	0	SO2	1-hr	State Property Line	Site Wide	No	0.0200	Max allowable rate	No
158	158	0	SO2	1-hr	State Property Line	Site Wide	No	3.55	Max allowable rate	No
126	MSSFLR	0	SO2	1-hr	State Property Line	Site Wide	No	996.29	Max allowable rate	No
MSS CAPS	MSSTK4	0	SO2	1-hr	State Property Line	Site Wide	No	0.0224	Max allowable rate	No
MSS CAPS	MSSTK7	0	SO2	1-hr	State Property Line	Site Wide	No	0.0224	Max allowable rate	No
MSS CAPS	MSSTK11	0	SO2	1-hr	State Property Line	Site Wide	No	0.0224	Max allowable rate	No
MSS CAPS	MSSTK12	0	SO2	1-hr	State Property Line	Site Wide	No	0.0224	Max allowable rate	No
MSS CAPS	MSSSRU	0	SO2	1-hr	State Property Line	Site Wide	No	344.27	Max allowable rate	No
MSS CAPS	MSSHOC	0	SO2	1-hr	State Property Line	Site Wide	No	85.39	Max allowable rate	No
MSS CAPS	MSSDECOK	0	SO2	1-hr	State Property Line	Site Wide	No	1.57	Max allowable rate	No
163	163	0	SO2	1-hr	State Property Line	Site Wide	No	4.27	Max allowable rate	No
49-H-91	49_H_91	0	SO2	1-hr	State Property Line	Site Wide	No	2.36	Max allowable rate	No
900	900	0	SO2	1-hr	State Property Line	Site Wide	No	8.62	Max allowable rate	No
909	909	0	SO2	1-hr	State Property Line	Site Wide	No	3.26	Max allowable rate	No
TKVCU	TKVCU	0	SO2	1-hr	State Property Line	Site Wide	No	0.0100	Max allowable rate	No
PVCU	C_PVCU	0	SO2	1-hr	State Property Line	Site Wide	No	0.0183	Max allowable rate	No

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook (EMEW)

Volume Source Emissions

Date: March 25, 2022
Permit #s: 38754
Company Name: Valero Refining Company - Texas LP

Facility:

EPN	Model ID	Modeling Scenario	Pollutant	Modeled Averaging Time	Standard Type	Review Context	Intermittent Source?	Modeled Emission Rate [lb/hr]	Basis of Emission Rate	Scalars or Factors Used?
FUG-CAP	FUGCAP	0	Generic	1-hr			No	1.00	Unit rate of 1 lb/hr	No
CAS-HOCPP	CASHOCPP	0	Generic	1-hr			No	1.00	Unit rate of 1 lb/hr	No
21/22F	22_21F	0	H2S	1-hr	State Property Line	Project Wide	No	0.00432	Project increase	No
42F	42F	0	H2S	1-hr	State Property Line	Project Wide	No	4.11E-04	Project increase	No
FUG-CAP	FUGCAP	0	H2S	1-hr	State Property Line	Project Wide	No	0.0128	Project increase	No

VAL_000647

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook (EMEW)

Combined Emissions

Date: March 25, 2022
Permit #s: 38754
Company Name: Valero Refining Company - Texas LP

EPN	Model ID	Modeling Scenario	Pollutant	Modeled Averaging Time	Standard Type	Review Context	Intermittent	Source Type	Modeled Emission Rate [lb/hr]
126	126	0	Generic	1-hr			No	Flare	1.00
127	127	0	Generic	1-hr			No	Flare	1.00
158	158	0	Generic	1-hr			No	Flare	1.00
121	121HOC	0	Generic	1-hr			No	Point	1.00
HOC-PP-CT	HOCPPCT	0	Generic	1-hr			No	Point	1.00
121/30-B-05	MEROX	0	Generic	1-hr			No	Point	1.00
30-B-05	30_B_05	0	Generic	1-hr			No	Point	1.00
126	126	0	Generic	Annual			No	Flare	1.00
127	127	0	Generic	Annual			No	Flare	1.00
158	158	0	Generic	Annual			No	Flare	1.00
121/30-B-05	MEROX	0	H2S	1-hr	State Property Line	Project Wide	No	Point	0.00
121	121SRU	0	H2S	1-hr	State Property Line	Project Wide	No	Point	0.11
126	126	0	H2S	1-hr	State Property Line	Project Wide	No	Flare	0.00
21/22F	22_21F	0	H2S	1-hr	State Property Line	Project Wide	No	Volume	0.00
42F	42F	0	H2S	1-hr	State Property Line	Project Wide	No	Volume	0.00
FUG-CAP	FUGCAP	0	H2S	1-hr	State Property Line	Project Wide	No	Volume	0.01
121	121HOC	0	H2SO4	1-hr	State Property Line	Site Wide	No	Point	49.00
168	168	0	H2SO4	1-hr	State Property Line	Site Wide	No	Point	0.01
121	121HOC	0	H2SO4	24-hr	State Property Line	Site Wide	No	Point	49.00
168	168	0	H2SO4	24-hr	State Property Line	Site Wide	No	Point	0.01
30-B-05	30_B_05	0	SO2	1-hr	State Property Line	Site Wide	No	Point	7.70
121/30-B-05	MEROX	0	SO2	1-hr	State Property Line	Site Wide	No	Point	3.86
1	1	0	SO2	1-hr	State Property Line	Site Wide	No	Point	2.50
74	74	0	SO2	1-hr	State Property Line	Site Wide	No	Point	1.37
114	114	0	SO2	1-hr	State Property Line	Site Wide	No	Point	1.52
115	115	0	SO2	1-hr	State Property Line	Site Wide	No	Point	2.49
116	116	0	SO2	1-hr	State Property Line	Site Wide	No	Point	0.30
117	117	0	SO2	1-hr	State Property Line	Site Wide	No	Point	2.41
118	118	0	SO2	1-hr	State Property Line	Site Wide	No	Point	44.53
119	119	0	SO2	1-hr	State Property Line	Site Wide	No	Point	0.34
120	120	0	SO2	1-hr	State Property Line	Site Wide	No	Point	0.26
121	121HOC	0	SO2	1-hr	State Property Line	Site Wide	No	Point	219.22
121	121SRU	0	SO2	1-hr	State Property Line	Site Wide	No	Point	191.32
124	124	0	SO2	1-hr	State Property Line	Site Wide	No	Point	0.03
131	131	0	SO2	1-hr	State Property Line	Site Wide	No	Point	0.27
132	132	0	SO2	1-hr	State Property Line	Site Wide	No	Point	0.07
150	150	0	SO2	1-hr	State Property Line	Site Wide	No	Point	3.13
151	151	0	SO2	1-hr	State Property Line	Site Wide	No	Point	0.60
152	152	0	SO2	1-hr	State Property Line	Site Wide	No	Point	9.80
153	153	0	SO2	1-hr	State Property Line	Site Wide	No	Point	4.34
162	162	0	SO2	1-hr	State Property Line	Site Wide	No	Point	5.99
172	172	0	SO2	1-hr	State Property Line	Site Wide	No	Point	1.02
195	195	0	SO2	1-hr	State Property Line	Site Wide	No	Point	2.55
16-P-04	16_P_04	0	SO2	1-hr	State Property Line	Site Wide	No	Point	0.05
16-P-07	16_P_07	0	SO2	1-hr	State Property Line	Site Wide	No	Point	0.06
16-P-11	16_P_11	0	SO2	1-hr	State Property Line	Site Wide	No	Point	0.02
16-P-12	16_P_12	0	SO2	1-hr	State Property Line	Site Wide	No	Point	0.02
16-P-13	16_P_13	0	SO2	1-hr	State Property Line	Site Wide	No	Point	0.02

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook (EMEW)

Combined Emissions

Date: March 25, 2022
Permit #s: 38754
Company Name: Valero Refining Company - Texas LP

EPN	Model ID	Modeling Scenario	Pollutant	Modeled Averaging Time	Standard Type	Review Context	Intermittent	Source Type	Modeled Emission Rate [lb/hr]
16-P-14	16_P_14	0	SO2	1-hr	State Property Line	Site Wide	No	Point	0.02
30-B-04	30_B_04	0	SO2	1-hr	State Property Line	Site Wide	No	Point	8.65
49-H-90	49_H_90	0	SO2	1-hr	State Property Line	Site Wide	No	Point	1.64
83-P-136A	83P_136A	0	SO2	1-hr	State Property Line	Site Wide	No	Point	0.04
83-P-136B	83P_136B	0	SO2	1-hr	State Property Line	Site Wide	No	Point	0.04
TRUCKCOMB	TRKVCU	0	SO2	1-hr	State Property Line	Site Wide	No	Point	0.02
158	158	0	SO2	1-hr	State Property Line	Site Wide	No	Flare	3.55
126	MSSFLR	0	SO2	1-hr	State Property Line	Site Wide	No	Flare	996.29
MSS CAPS	MSSTK4	0	SO2	1-hr	State Property Line	Site Wide	No	Point	0.02
MSS CAPS	MSSTK7	0	SO2	1-hr	State Property Line	Site Wide	No	Point	0.02
MSS CAPS	MSSTK11	0	SO2	1-hr	State Property Line	Site Wide	No	Point	0.02
MSS CAPS	MSSTK12	0	SO2	1-hr	State Property Line	Site Wide	No	Point	0.02
MSS CAPS	MSSSRU	0	SO2	1-hr	State Property Line	Site Wide	No	Point	344.27
MSS CAPS	MSSHOC	0	SO2	1-hr	State Property Line	Site Wide	No	Point	85.39
MSS CAPS	MSSDECOK	0	SO2	1-hr	State Property Line	Site Wide	No	Point	1.57
163	163	0	SO2	1-hr	State Property Line	Site Wide	No	Point	4.27
49-H-91	49_H_91	0	SO2	1-hr	State Property Line	Site Wide	No	Point	2.36
900	900	0	SO2	1-hr	State Property Line	Site Wide	No	Point	8.62
909	909	0	SO2	1-hr	State Property Line	Site Wide	No	Point	3.26
TKVCU	TKVCU	0	SO2	1-hr	State Property Line	Site Wide	No	Point	0.01
PVCU	C_PVCU	0	SO2	1-hr	State Property Line	Site Wide	No	Point	0.02
FUG-CAP	FUGCAP	0	Generic	1-hr			No	Volume	1.00
CAS-HOCPP	CASHOCPP	0	Generic	1-hr			No	Volume	1.00
21/22F	22_21F	0	H2S	1-hr	State Property Line	Project Wide	No	Volume	0.00
42F	42F	0	H2S	1-hr	State Property Line	Project Wide	No	Volume	0.00
FUG-CAP	FUGCAP	0	H2S	1-hr	State Property Line	Project Wide	No	Volume	0.01

VAL_000649

Date: March 25, 2022
Permit #s: 38754
Company Name: Valero Refining Company - Texas LP

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook (EMEW)

NAAQS-SPL Modeling Results

Table 1. Project-Related Modeling Results for State Property Line

Pollutant	Averaging Time	GLCmax (µg/m^3)	De Minimis (µg/m^3)
SO_2	1-hr	21.13756	20.42
H_2SO_4	1-hr	6.66309	1
H_2SO_4	24-hr	2.45903	0.3
H_2S	1-hr	0.383	2.16 *(If property is residential, recreational, business, or commercial)*
H_2S	1-hr	0.383	3.24 *(If property is not residential, recreational, business, or commercial)*

Table 2. Site-wide Modeling Results for State Property Line

Pollutant	Averaging Time	GLCmax (µg/m^3)	Standard (µg/m^3)
SO_2	1-hr	182.93902	1021
H_2SO_4	1-hr	8.48386	50
H_2SO_4	24-hr	3.13146	15
H_2S	1-hr		108 *(If property is residential, recreational, business, or commercial)*
H_2S	1-hr		162 *(If property is not residential, recreational, business, or commercial)*

[redacted]

VAL_000650

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook (EMEW)

Unit Impact Multipliers

Date: March 25, 2022
Permit #s: 38754
Company Name: Valero Refining Company - Texas LP

Facility:

EPN	Model ID	Modeling Scenario	Averaging Time	GLCmax (µg/m^3 per lb/hr)	GLCmax (µg/m^3 per tpy)
126	126	0	1-hr	0.229	
127	127	0	1-hr	0.227	
158	158	0	1-hr	4.50	
121	121HOC	0	1-hr	0.173	
HOC-PP-CT	HOCPPCT	0	1-hr	7.18	
121/30-B-05	MEROX	0	1-hr	1.73	
30-B-05	30_B_05	0	1-hr	1.73	
126	126	0	Annual	0.00357	
127	127	0	Annual	0.00351	
158	158	0	Annual	0.0634	
FUG-CAP	FUGCAP	0	1-hr	27.84	
CAS-HOCPP	CASHOCPP	0	1-hr	28.93	

Texas Commission on Environmental Quality
Electronic Modeling Evaluation Workbook (EMEW)
Health Effect Modeling Results

Date: March 25, 2022
Permit #s: 38754
Company Name: Valero Refining Company - Texas LP

Facility:

Modeled Health Effect Results (MERA Guidance):				Step 3	Step 4: Production
Chemical Species	CAS Number	Averaging Time	ESL [μg/m^3]	10% ESL Step 3 Modeled GLCmax [μg/m^3]	25 % ESL Step 4 Production GLCmax since most recent site wide modeling [μg/m^3]
ammonia	7664-41-7	1-hr	180	4.66	
distillates (petroleum), light catalytic cracked	64741-59-9	1-hr	3500	194.50	

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook (EMEW)

Health Effect Modeling Results

Date: March 25, 2022

Permit #s: 38754

Company Name: Valero Refining Company - Texas LP

Facility:

Modeled Hea		Step 4: MSS		Step 5: MSS Only	Step 5: Hours of Excee
Chemical Species	10% ESL Step 4 Production Project Only GLCmax [μg/m^3]	50% ESL Step 4 MSS GLCmax since most recent site wide modeling [μg/m^3]	25% ESL Step 4 MSS Project Only GLCmax [μg/m^3]	Full ESL Step 5 GLCmax [μg/m^3]	*1X ESL GLCmax* Step 5 MSS Hours of Exceedance
ammonia					
distillates (petroleum), light catalytic cracked					

VAL_000653

Texas Commission on Environmental Quality
Electronic Modeling Evaluation Workbook (EMEW)
Health Effect Modeling Results

Date: March 25, 2022
Permit #s: 38754
Company Name: Valero Refining Company - Texas LP

Facility:

Modeled Headance				Step 6	Step 7: Site Wide
Chemical Species	*2X ESL GLCmax* Step 5 MSS Hours of Exceedance	*4X ESL GLCmax* Step 5 MSS Hours of Exceedance	*10X ESL GLCmax* Step 5 MSS Hours of Exceedance	Was Step 6 relied on to fall out of the MERA?	Site Wide GLCmax [µg/m^3]
ammonia					
distillates (petroleum), light catalytic cracked					

VAL_000654

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook (EMEW)

Health Effect Modeling Results

Date: March 25, 2022
Permit #s: 38754
Company Name: Valero Refining Company - Texas LP

Facility:

Modeled Hea				Step 7: Hours of Exceedance		
Chemical Species	Site Wide GLCni [µg/m^3]	GLCni Location Easting: X [m]	GLCni Location Northing: Y [m]	*1X ESL GLCni* Hours of Exceedance	*2X ESL GLCmax* Hours of Exceedance	*4X ESL GLCmax* Hours of Exceedance
ammonia						
distillates (petroleum), light catalytic cracked						

VAL_000655

Texas Commission on Environmental Quality
Electronic Modeling Evaluation Workbook (EMEW)
Health Effect Modeling Results

Date: March 25, 2022
Permit #s: 38754
Company Name: Valero Refining Company - Texas LP

Facility:

Modeled Hea	
Chemical Species	*10X ESL GLCmax* Hours of Exceedance
ammonia	
distillates (petroleum), light catalytic cracked	

VAL_000656

Texas Commission on Environmental Quality
Electronic Modeling Evaluation Workbook (EMEW)
Modeling File Names

Date: March 25, 2022
Permit #s: 38754
Company Name: Valero Refining Company - Texas LP

Facility:

Model File Base Name	Pollutant	Averaging Time	File Extensions	Additional File Description
HOCProject_2014-2018_SO2_PL	SO2	1-hr	*DTA, *GRF, *LST, *SUM	de minimis
HOCProject_2016_H2S	H2S	1-hr	*DTA, *GRF, *LST, *SUM	de minimis
HOCProject_2016_H2SO4	H2SO4	1-hr	*DTA, *GRF, *LST, *SUM	de minimis
HOCProject_2016_UNIT_ST	Generic	1-hr	*DTA, *GRF, *LST, *SUM	unit impact short-term
HOCProject_2016_UNIT_AN	Generic	Annual	*DTA, *GRF, *LST, *SUM	unit impact annual
SO2_1HRSPL	SO2	1-hr	*DTA, *GRF, *LST, *SUM	site-wide
H2SO4_2016_H2SO4	H2SO4	1-hr	*DTA, *GRF, *LST, *SUM	site-wide
HOCProject_2016_H2S	H2S	24-hr	*DTA, *GRF, *LST, *SUM	de minimis
H2SO4_2016_H2SO4	H2SO4	24-hr	*DTA, *GRF, *LST, *SUM	site-wide
Valero West Plant Electronic Plot Plan	All	All	*.kmz	electronic plot plan
Valero WP HOC AQA	All	All	*docx	air quality analysis report
aersurface	All	All	*inp, *log, *txt	aersurface files
Nueces_CRPCRP	All	All	*SFC, *PFL	aermet files
ValeroWP	All	All	*map, *mot, *srf, *rcf, *rmp	aermap files project sources
Sitewide	All	All	*map, *mot, *srf, *rcf, *rmp	aermap files sitewide sources

Texas Commission on Environmental Quality
Electronic Modeling Evaluation Workbook (EMEW)
Modeling File Names

Date: March 25, 2022
Permit #s: 38754
Company Name: Valero Refining Company - Texas LP

Model File Base Name	Pollutant	Averaging Time	File Extensions	Additional File Description

VAL_000658

Table 6-4

MERA Step 3

HOC Reconfiguration Project

Valero Refining - Texas - West Plant Refinery, Corpus Christi

Updated April 12, 2022

Component Name	CAS#	1-hour ESL	Annual ESL	Is Annual Review Required?	Unit Impact Multiplier (µg/m³ per lb/hr) >>>	1.733	0.173	27.837	7.181	0.173	28.931	GLCmax [1]	% of ESL	Is GLCmax < 10% of ESL
					EPN >>	30-B-05	121	FUG-CAP	HOC-PP-CT	121/30-B-05	CAS-HOCPP			
					Model ID >>	30_B_05	121HOC	FUGCAP	HOCPPCT	121HOC	CASHOCPP			
		$\mu g/m^3$	$\mu g/m^3$	yes/no		lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	$\mu g/m^3$		yes/no
Ammonia (NH_3)	7664-41-7	180	92	no		2.2	4.8	0.01	-	-	-	4.9	2.7%	yes
Refinery Lights (distillates (petroleum), light catalytic cracked)	64741-59-9	3,500	350	no		-	-	6.7	1.09	0.24	0.005	194.5	5.6%	yes

[1] The "GLCmax" is the sum of the individual unit impact multiplier times the constituent specific emission rate for each source.

Prevention of Significant Deterioration Permit Application

TCEQ Air Quality Permit Nos. 38754, PSDTX324M14
HOC Reconfiguration Project

See Electronic File Entitled:

“2022.04.12 Electronic Files.zip”

From:	Marquard, Meagan
To:	Cara Hill
Cc:	Arnosky, David; Almaraz, Aimee; Joe Kupper
Subject:	RE: Permit 38754 Valero HOC Project Draft Permit - Valero Response
Date:	Wednesday, April 20, 2022 5:35:50 PM
Attachments:	Draft CND 38754-326326 111621 VALERO COMMENTS.docx MRT - 38754 Valero (Amendment, 333877)v1-VALERO COMMENTS.docx 20220419_ApplicationWorkbook_Valero_38754.xlsx

Good Afternoon Cara,

In our last set of comments, we missed two references to the new Propylene cooling tower in SC 30. "HOC" should be changed to "Propylene" as shown in the attached markup of the conditions. A marked up MAERT is attached, with a revision to the EPN for the new HOC Gas Plant CAS. A revised PI-1 Workbook is attached with the FIN/EPNs for the new process fugitive areas included. Please note that the emissions for these new FINs are included the fugitive cap, EPN:FUG-CAP.

Please let me know if you have any questions or concerns. Thank you

Meagan Marquard
Superintendent Environmental
Valero - Bill Greehey Refineries
Office: (361) 299-8913
Mobile: (520) 249-5349

From: Cara Hill <Cara.Hill@Tceq.Texas.Gov>
Sent: Monday, April 18, 2022 10:02 AM
To: Marquard, Meagan <Meagan.Marquard@valero.com>
Cc: Arnosky, David <David.Arnosky@valero.com>; Almaraz, Aimee <Aimee.Almaraz@valero.com>; Joe Kupper <Joe.Kupper@trinityconsultants.com>
Subject: RE: Permit 38754 Valero HOC Project Draft Permit - Valero Response

Hi Megan,

I've attached the updated draft permit. I agreed with the proposed changes, except where I added a comment on the "##F" EPNs. I couldn't find these in the workbook and needed clarification as to what they are.

Thanks,
Cara

How is our customer service? www.tceq.texas.gov/customersurvey

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From: Marquard, Meagan <Meagan.Marquard@valero.com>
Sent: Thursday, April 7, 2022 2:57 PM
To: Cara Hill <Cara.Hill@Tceq.Texas.Gov>

Cc: R6AirPermitsTX@epa.gov; Kelly Ruble <kelly.ruble@tceq.texas.gov>; Arnosky, David <David.Arnosky@valero.com>; Almaraz, Aimee <Aimee.Almaraz@valero.com>; Joe Kupper <Joe.Kupper@trinityconsultants.com>
Subject: Permit 38754 Valero HOC Project Draft Permit - Valero Response

Cara,

Valero is submitting comments on the draft special conditions and MAERT. Attached for your convenience are marked up conditions and MAERT. The proposed changes are summarized as follows:

1. The introductory paragraph for SC 30 was revised to clarify that the excepted cooling tower subject to paragraph E is the new cooling tower associated with the HOC Reconfiguration project.

2. For SC 36.C.1. Valero does not believe the requirement to perform sampling at maximum flow rate is appropriate. The TCEQ boilerplate conditions for carbon adsorption systems (CAS) contains the following text: "*The CAS shall be sampled every (frequency see note 1) to determine breakthrough of volatile organic compounds (VOC). The sampling point shall be at the outlet of the initial canister but before the inlet to the second or final polishing canister. Sampling shall be done during (identify operating conditions reflecting maximum emission venting to the CAS such as during loading, tank filling, process venting).*" .

   Based on the examples given in the boilerplate, it appears that the intent was to cover periods when discrete events occur such that the flow rate to the CAS is higher than normal. Since the wastewater from the new processing units routed to the new lift station are expected to a generally constant flow rate, revised language is proposed to specify sampling must at performed during wastewater generation and routine operations.

3. The increased MSS emissions represented on Table A-8 of the application is for additional hours of MSS related to the HOC. Therefore, the number of hours in SC 60. B. (1) should be increased the additional 36 hours, such that the existing 50 hours is now 86 hours.
4. As discussed in Section 8.2.2, the project will cause the HOC to become an "affected unit" and subject to NSPS Ja. Therefore, a new item has been added to SC 75 to specify that the HOC is subject NSPS Ja upon startup of the reconfigured HOC. The existing reference to NSPS J is still appropriate for the permit for operation prior to the modification. Reference to the new boiler has also been added to SC 75(A)(2) for NSPS Ja applicability.

5. Language has been added to SC 82 to clarify when GHG calculations begin and to what sources are subject to the requirement.

6. A new SC 84 is proposed in order to codify the thermal efficiency represented for the new boiler and address monitoring requirements to ensure compliance.

7. Clarifying descriptions and new project units have been added to the table in Attachment 1.

Please note that the new sour water stripper is associated the existing sour water stripper; therefore, is included with EPN 42F.

8. Changes to the MAERT

   a. The pending amendment to Permit 38754 (Project 326326) has completed second public notice and issuance is expected during April. The attached PI-1 Workbook has been revised to reflect the emission limits for the MAERT that will be issued for Project 326326. Revised Tables A-4 (Fugitive Speciation) and A-10 (MSS Caps) are attached and include the revised existing MAERT limits that match the pending permit. As a result of these changes updated Tables 1-1 and 7-1 are also attached. The new limits have been shown in the marked up MAERT.

   b. Added line items for three EPNS for new units being constructed for the project.

   c. Revised VOC, SO2, and H2S emission rates for EPNs 121 and 30-B-05 to include emissions from the proposed MEROX vent.

   d. Add "-Propylene Project" to the description to EPN HOC-PP-CT. In addition, the new cooling tower name has been added to the revised PI-1.

In addition, Valero would like to make the following changes to the permit application:

1. Valero would like to clarify that the new boiler (EPN 30-B-05) will be capable of firing natural gas. No updates to the emission calculations since firing natural gas results in equal or lower emission rates than firing refinery fuel gas.

2. In the initial project planning cat naphtha was proposed to be routed directly from the existing HOC to the new secondary reactor-riser; however, the project now calls for the cat naphtha to be routed to an intermediate storage tank. The tank will be an existing tank, Tank 70TK51 (EPN TK-51). Tank 70TK51 is authorized by Permit 135590 and Valero will authorize the change of service to cat naphtha as required in a separate permitting or PBR action. However the increased VOC emissions are being accounted for in updated PSD emission tables and health effect modeling will be provided in a separate submittal. The attached Tables A-12 and A-13 contain emission calculations for Tank 70TK51 storing cat naphtha. Revised PSD tables for VOC are also attached. Please note that the HOC PP Gas Plant CAS, inadvertently left off the Table 2F, has been added.

Meagan Marquard
Superintendent Environmental
Valero - Bill Greehey Refineries
Office: (361) 299-8913
Mobile: (520) 249-5349

I. Applicant Information	
I acknowledge that I am submitting an authorized TCEQ application workbook and any necessary attachments. Except for inputting the requested data and adjusting row height and column width, I have not changed the TCEQ application workbook in any way, including but not limited to changing formulas, formatting, content, or protections.	I agree

A. Company Information

Company or Legal Name:	Valero Refining - Texas, L.P.

Permits are issued to either the facility owner or operator, commonly referred to as the applicant or permit holder. List the legal name of the company, corporation, partnership, or person who is applying for the permit. We will verify the legal name with the Texas Secretary of State at (512) 463-5555 or at the link below:

https://www.sos.state.tx.us

Texas Secretary of State Charter/Registration Number (if given):	

B. Company Official Contact Information: must not be a consultant

Prefix (Mr., Ms., Dr., etc.):	Mr.
First Name:	Joe
Last Name:	Almaraz
Title:	Director Environmental / Safety Affairs
Mailing Address:	P.O. Box 9370
Address Line 2:	
City:	Corpus Christi
State:	Texas
ZIP Code:	78469
Telephone Number:	361-289-3328
Fax Number:	361-289-3126
Email Address:	Joe.Almaraz@valero.com

C. Technical Contact Information: This person must have the authority to make binding agreements and representations on behalf of the applicant and may be a consultant. **Additional technical contact(s) can be provided in a cover letter.**

Prefix (Mr., Ms., Dr., etc.):	Ms.
First Name:	Meagan
Last Name:	Marquard
Title:	Superintendent Environmental
Company or Legal Name:	Valero Refining - Texas, L.P.
Mailing Address:	P.O. Box 9370
Address Line 2:	
City:	Corpus Christi
State:	Texas
ZIP Code:	78469
Telephone Number:	361-299-8913
Fax Number:	361-289-3126
Email Address:	Meagan.Marquard@valero.com

D. Assigned Numbers

The CN and RN below are assigned when a Core Data Form is initially submitted to the Central Registry. The RN is also assigned if the agency has conducted an investigation or if the agency has issued an enforcement action. If these numbers have not yet been assigned, leave these questions blank and include a Core Data Form with your application submittal. See Section VI.B. below for additional information.

Enter the CN. The CN is a unique number given to each business, governmental body, association, individual, or other entity that owns, operates, is responsible for, or is affiliated with a regulated entity.	CN600127468

Enter the RN. The RN is a unique agency assigned number given to each person, organization, place, or thing that is of environmental interest to us and where regulated activities will occur. The RN replaces existing air account numbers. The RN for portable units is assigned to the unit itself, and that same RN should be used when applying for authorization at a different location.	RN100214386

II. Delinquent Fees and Penalties

Does the applicant have unpaid delinquent fees and/or penalties owed to the TCEQ? This form will not be processed until all delinquent fees and/or penalties owed to the TCEQ or the Office of the Attorney General on behalf of the TCEQ are paid in accordance with the Delinquent Fee and Penalty Protocol. For more information regarding Delinquent Fees and Penalties, go to the TCEQ Web site at the link below:	No

https://www.tceq.texas.gov/agency/financial/fees/delin

III. Permit Information

A. Permit and Action Type (multiple may be selected, leave no blanks)

Additional information regarding the different NSR authorizations can be found at the link below:
https://www.tceq.texas.gov/permitting/air/guidance/authorize.html

Select from the drop-down the type of action being requested for each permit type. **If that permit type does not apply, you MUST select "Not applicable".**

Provide all assigned permit numbers relevant for the project. Leave blank if the permit number has not yet been assigned.

Permit Type	**Action Type Requested (do not leave blank)**	**Permit Number (if assigned)**
Minor NSR (can be a Title V major source): *Not applicable, Initial, Amendment, Renewal, Renewal Certification, Renewal/Amendment, Relocation/Alteration, Change of Location, Alteration, Extension to Start of Construction*	Amendment	38754
Special Permit: *Not applicable, Amendment, Renewal, Renewal Certification, Renewal/Amendment, Alteration, Extension to Start of Construction*	Not applicable	
De Minimis: *Not applicable, Initial*	Not applicable	
Flexible: *Not applicable, Initial, Amendment, Renewal, Renewal Certification, Renewal/Amendment, Alteration, Extension to Start of Construction*	Not applicable	
PSD: *Not applicable, Initial, Major Modification*	Major Modification	PSDTX324M14
Nonattainment: *Not applicable, Initial, Major Modification*	Not applicable	
HAP Major Source [FCAA § 112(g)]: *Not applicable, Initial, Major Modification*	Not applicable	
PAL: *Not applicable, Initial, Amendment, Renewal, Renewal/Amendment, Alteration*	Not applicable	
GHG PSD: *Not applicable, Initial, Major Modification, Voluntary Update*	Initial	TBD

GHG projects: List the non-GHG applications (pending or being submitted) that are associated with the project. Note: All preconstruction authorizations (including authorization for emissions of greenhouse gases, if applicable) must be obtained prior to start of construction.	
B. MSS Activities	
How are/will MSS activities for sources associated with this project be authorized?	This permit
C. Consolidating NSR Permits	
Will this permit be consolidated into another NSR permit with this action?	No
Will NSR permits be consolidated into this permit with this action?	No

D. Incorporation of Standard Permits, Standard Exemptions, and/or Permits By Rule (PBR)

To ensure protectiveness, previously issued authorizations (standard permits, standard exemptions, or PBRs) including those for MSS, are incorporated into a permit either by consolidation or by reference.

- -Authorizations entirely incorporated by consolidation will be voided when the project is complete, and the sources and allowable emissions will be added to the NSR permit's MAERT.
- -Authorizations incorporated by reference will be referenced with the final action for this project but will not be voided. Sources will continue to be authorized in the current manner.

At the time of renewal and/or amendment, consolidation (in some cases) may be voluntary and referencing is mandatory. More guidance regarding incorporation can be found in 30 TAC § 116.116(d)(2), 30 TAC § 116.615(3) and in this memo (link below):

https://www.tceq.texas.gov/assets/public/permitting/air/memos/pbr_spc06.pdf

Are there any standard permits, standard exemptions, or PBRs to be incorporated by reference?	No
Are there any PBR, standard exemptions, or standard permits associated to be incorporated by consolidation? **Note:** Emission calculations, a BACT analysis, and an impacts analysis must be attached to this application at the time of submittal for any authorization to be incorporated by consolidation.	No

E. Associated Federal Operating Permits	
Is this facility located at a site required to obtain a **site operating permit (SOP)** or **general operating permit (GOP)?**	Yes
Is a **SOP** or **GOP** review pending for this source, area, or site?	No
If required to obtain a **SOP** or **GOP**, list all associated permit number(s). If no associated permit number has been assigned yet, enter "TBD":	O1458

IV. Facility Location and General Information	
A. Location	
County: Enter the county where the facility is physically located.	Nueces
TCEQ Region	Region 14
County attainment status as of Sept. 23, 2019	attainment or unclassified for all pollutants
Street Address:	5900 Up River Road
City: If the address is not located in a city, then enter the city or town closest to the facility, even if it is not in the same county as the facility.	Corpus Christi
ZIP Code: Include the ZIP Code of the physical facility site, not the ZIP Code of the applicant's mailing address.	78407
Site Location Description: If there is no street address, provide written driving directions to the site. Identify the location by distance and direction from well-known landmarks such as major highway intersections.	Not applicable
Use USGS maps, county maps prepared by the Texas Department of Transportation, or an online software application such as Google Earth to find the latitude and longitude.	
Latitude (in degrees, minutes, and nearest second (DDD:MM:SS)) for the street address or the destination point of the driving directions. Latitude is the angular distance of a location north of the equator and will always be between 25 and 37 degrees north (N) in Texas.	027:49:14
Longitude (in degrees, minutes, and nearest second (DDD:MM:SS)) for the street address or the destination point of the driving directions. Longitude is the angular distance of a location west of the prime meridian and will always be between 93 and 107 degrees west (W) in Texas.	097:29:18
Is this a project for a lead smelter, concrete crushing facility, and/or a hazardous waste management facility?	No
B. General Information	
Site Name:	Valero Corpus Christi Refinery West Plant

Area Name: Must indicate the general type of operation, process, equipment or facility. Include numerical designations, if appropriate. Examples are Sulfuric Acid Plant and No. 5 Steam Boiler. Vague names such as Chemical Plant are not acceptable.	West Plant
Are there any schools located within 3,000 feet of the site boundary?	No
C. Portable Facility	
Permanent or portable facility?	Permanent
D. Industry Type	
Principal Company Product/Business:	Petroleum Refining
A list of SIC codes can be found at the link below: https://www.naics.com/sic-codes-industry-drilldown/	
Principal SIC code:	2911
NAICS codes and conversions between NAICS and SIC Codes are available at the link below: https://www.census.gov/eos/www/naics/	
Principal NAICS code:	324110
E. State Senator and Representative for this site	
This information can be found at the link below (note, the website is not compatible to Internet Explorer): https://wrm.capitol.texas.gov/	
State Senator:	Juan "Chuy" Hinojosa
District:	Texas Senate District 20
State Representative:	Abel Herrero
District:	Texas House District 34

V. Project Information	
A. Description	
Provide a **brief** description of the project that is requested (describe the what, not the how and why). Limited to 500 characters.	Valero plans to undertake changes to the West Plant Heavy Oil Cracker (HOC), a fluidized catalytic cracking (FCC) unit. Due to the integrated nature of refinery operations, the project ("HOC Reconfiguration Project") will necessitate construction of a new utility boiler, a new cooling tower, and a new Gas Plant.
B. Project Timing	
Authorization must be obtained for many projects before beginning construction. Construction is broadly interpreted as anything other than site clearance or site preparation. Enter the date as "Month Date, Year" (e.g. July 4, 1776).	
Projected Start of Construction:	October 1, 2022
Projected Start of Operation:	January 1, 2024
C. Enforcement Projects	
Is this application in response to, or related to, an agency investigation, notice of violation, or enforcement action?	No
D. Operating Schedule	
Will sources in this project be authorized to operate 8760 hours per year?	Yes

VI. Application Materials	
All representations regarding construction plans and operation procedures contained in the permit application shall be conditions upon which the permit is issued. (30 TAC § 116.116)	
A. Confidential Application Materials	
Is confidential information submitted with this application?	No
B. Is the Core Data Form (Form 10400) attached (link to the form below)?	N/A
C. Is a current area map attached?	Yes
Is the area map a current map with a true north arrow, an accurate graduated scale, the entire plant property, the location of the property relative to prominent geographical features including, but not limited to, highways, roads, streams, and significant landmarks such as buildings, residences, schools, parks, hospitals, day care centers, and churches?	Yes
Does the map show a 3,000-foot radius from the property boundary?	Yes
D. Is a plot plan attached?	Yes
Does your plot plan clearly show a north arrow, an accurate scale, all property lines, all emission points, buildings, tanks, process vessels, other process equipment, and two bench mark locations?	Yes
Does your plot plan identify all emission points on the affected property, including all emission points authorized by other air authorizations, construction permits, PBRs, special permits, and standard permits?	Yes
Did you include a table of emission points indicating the authorization type and authorization identifier, such as a permit number, registration number, or rule citation under which each emission point is currently authorized?	Yes
E. Is a process flow diagram attached?	Yes
Is the process flow diagram sufficiently descriptive so the permit reviewer can determine the raw materials to be used in the process; all major processing steps and major equipment items; individual emission points associated with each process step; the location and identification of all emission abatement devices; and the location and identification of all waste streams (including wastewater streams that may have associated air emissions)?	Yes
F. Is a process description attached?	Yes
Does the process description emphasize where the emissions are generated, why the emissions must be generated, what air pollution controls are used (including process design features that minimize emissions), and where the emissions enter the atmosphere?	Yes
Does the process description also explain how the facility or facilities will be operating when the maximum possible emissions are produced?	Yes
G. Is a detailed list of requested actions included in the application? This list can be included in the project description.	Yes
H. Are detailed calculations attached? Calculations must be provided for each source with new or changing emission rates. For example, a new source, changing emission factors, decreasing emissions, consolidated sources, etc. Calculations do not need to be submitted for sources without any proposed emission rate changes. Note: the preferred format is an electronic workbook (such as Excel) with all formulas viewable for review.	Yes
Are emission rates and associated calculations for planned MSS facilities and related activities attached?	Yes
I. Is a material balance (Table 2, Form 10155) attached?	Yes

Table 2 (Form 10155), entitled Material Balance: A material balance representation may be required for all applications to confirm technical emissions information. Typically this is required for refining and chemical manufacturing processes involving reactions, separations, and blending. It may also be requested by the permit reviewer for other applications. Table 2 should represent the total material balance; that is, all streams into the system and all streams out. Additional sheets may be attached if necessary. Complex material balances may be presented on spreadsheets or indicated using process flow diagrams. All materials in the process should be addressed whether or not they directly result in the emission of an air contaminant. All production rates must be based on maximum operating conditions.

J. Is a list of MSS activities attached?	Yes
Are the MSS activities listed and discussed separately, each complete with the authorization mechanism or emission rates, frequency, duration, and supporting information if authorized by this permit?	Yes
K. Is a discussion of state regulatory requirements attached, addressing 30 TAC Chapters 101, 111, 112, 113, 115, and 117?	Yes
For all applicable chapters, does the discussion include how the facility will comply with the requirements of the chapter?	Yes
For all not applicable chapters, does the discussion include why the chapter is not applicable?	Yes
L. Are all other required tables, calculations, and descriptions attached?	Yes

VII. Signature

The owner or operator of the facility must apply for authority to construct. The appropriate company official (owner, plant manager, president, vice president, or environmental director) must sign all copies of the application. The applicant's consultant cannot sign the application. **Important Note: Unless submitting through STEERS, signatures must be original in ink, not reproduced by photocopy, fax, or other means, and must be received before any permit is issued.**

The signature below confirms that I have knowledge of the facts included in this application and that these facts are true and correct to the best of my knowledge and belief. I further state that to the best of my knowledge and belief, the project for which application is made will not in any way violate any provision of the Texas Water Code (TWC), Chapter 7; the Texas Health and Safety Code, Chapter 382; the Texas Clean Air Act (TCAA); the air quality rules of the Texas Commission on Environmental Quality; or any local governmental ordinance or resolution enacted pursuant to the TCAA. I further state that I understand my signature indicates that this application meets all applicable nonattainment, prevention of significant deterioration, or major source of hazardous air pollutant permitting requirements. The signature further signifies awareness that intentionally or knowingly making or causing to be made false material statements or representations in the application is a criminal offense subject to criminal penalties.

Name:	Joe Almaraz
Signature:	
Original signature is required unless submitted through STEERS.	
Date:	September 30, 2021

I. Additional Questions for Specific NSR Minor Permit Actions

[redacted]

[redacted]

[redacted]

[redacted]

VIII. Federal Regulatory Questions	
Indicate if any of the following requirements apply to the proposed facility. Note that some federal regulations apply to minor sources. Enter all applicable Subparts.	
A. Title 40 CFR Part 60	
Do NSPS subpart(s) apply to a facility in this application?	Yes
List applicable subparts you will demonstrate compliance with (e.g. Subpart M)	Subparts A, J, Ja, K, Ka, Kb, VV, XX, GGG, NNN, QQQ, RRR
B. Title 40 CFR Part 61	

Do NESHAP subpart(s) apply to a facility in this application?	Yes
List applicable subparts you will demonstrate compliance with (e.g. Subpart BB)	Subparts A, M, FF
C. Title 40 CFR Part 63	
Do MACT subpart(s) apply to a facility in this application?	Yes
List applicable subparts you will demonstrate compliance with (e.g. Subpart VVVV)	Subparts A, F, G, H, R, Y, CC, UUU, DDDDD, GGGGG

IX. Emissions Review

A. Impacts Analysis

Any change that may result in an increase in off-property concentrations of air contaminants requires an air quality impacts demonstration, which may include a qualitative analysis, the MERA, and/or modeling. Information regarding the air quality impacts demonstration must be provided with the application and show compliance with all state and federal requirements. Detailed requirements for the information necessary to make the demonstration are listed on the Impacts sheet.

Are there any increases in short-term and/or long-term allowable emission rates?	Yes
Can all the emission rate increases be attributed to speciation of currently authorized PM emissions and/or revisions of AP-42 or TCEQ guidance?	No
Are there any new or modified control devices or emission sources?	Yes
Are there any changes to emission point discharge parameters? Consider all parameters on the Stack Parameters sheet, including location.	No
Will any PBR registrations, standard permit, or standard exemptions be incorporated by consolidation?	No
Does this project require an impacts analysis?	Yes
Will off property impacts for any of the pollutants require Tier III Toxicology Effects Evaluation as defined in Appendix D of MERA?	No

B. Disaster Review

If the proposed facility will handle sufficient quantities of certain chemicals which, if released accidentally, would cause off-property impacts that could be immediately dangerous to life and health, a disaster review analysis may be required as part of the application. Contact the appropriate NSR permitting section for assistance at (512) 239-1250. Additional Guidance can be found at the link below:

https://www.tceq.texas.gov/assets/public/permitting/air/Guidance/NewSourceReview/disrev-factsheet.pdf

Does this application involve any air contaminants for which a disaster review is required?	No

C. Air Pollutant Watch List

Certain areas of the state have concentrations of specific pollutants that are of concern. The TCEQ has designated these portions of the state as watch list areas. Location of a facility in a watch list area could result in additional restrictions on emissions of the affected air pollutant(s) or additional permit requirements. The location of the areas and pollutants of interest can be found at the link below:

https://www.tceq.texas.gov/toxicology/apwl/apwl.html

Is the proposed facility located in a watch list area?	No

D. Mass Emissions Cap and Trade	
Is this facility located at a site within the Houston/Galveston nonattainment area (Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, and Waller Counties)?	No

X. Additional Requirements	
A. Bulk Fuel Terminals	
Is this project for a bulk fuel terminal?	No
B. Plant Fuel Gas Facilities	
Does this site utilize plant fuel gas?	Yes

Texas Commission on Environmental Quality
Form PI-1 General Application
Unit Types - Emission Rates

Date: _April 19, 2022_
Permit #: _38754_
Company: _Valero Refining - Texas, L.P._

Action Requested (only 1 action per FIN)	Include these emissions in annual (tpy) summary?	Facility ID Number (FIN)	Emission Point Number (EPN)	Source Name	Pollutant	Current Short-Term (lb/hr)	Current Long-Term (tpy)	Consolidated Current Short-Term (lb/hr)	Consolidated Current Long-Term (tpy)	Proposed Short Term (lb/hr)	Proposed Long-Term (tpy)	Short-Term Difference (lb/hr)	Long-Term Difference (tpy)	Unit Type (Used for reviewing BACT and Monitoring Requirements)	Unit Type Notes (only if "other" unit type in Column O)
New/Modified	Yes	Various	MSS Caps	MSS Caps	CO	2085.19	88.17			2085.19	128.91	0	40.74	MSS Activities	
					H2S	10.59	0.22			10.59	0.22	0	0		
					NH3	4.41	0.71			4.41	0.71	0	0		
					NOx	356.84	20.21			356.84	27.19	0	6.98		
					PM	79.52	2.21			79.52	3.76	0	1.55		
					PM10	79.52	1.37			79.52	2.92	0	1.55		
					PM2.5	79.52	1.37			79.52	2.92	0	1.55		
					SO2	996.29	37.23			996.29	38.89	0	1.66		
					VOC	578.44	69.65			578.44	70.04	0	0.3901		
					Exempt Solvents	1.76	0.6			1.76	0.6	0	0		
Not New/Modified	Yes	01-H-01	1	Heater - Crude Heater (01-H-01)	CO	8.1	20.13			8.1	20.13	0	0	Heater	
					NH3	0.05	0.17			0.05	0.17	0	0		
					NOx	9.72	19.24			9.72	19.24	0	0		
					PM	1.21	4			1.21	4	0	0		
					PM10	1.21	4			1.21	4	0	0		
					PM2.5	1.21	4			1.21	4	0	0		
					SO2	2.5	5.71			2.5	5.71	0	0		
					VOC	0.87	2.9			0.87	2.9	0	0		
Not New/Modified	Yes	01-H-02	131	Heater - Crude Preflash (01-H-02)	CO	0.62	2.71			0.62	2.71	0	0	Heater	
					NH3	<0.01	0.02			<0.01	0.02	0	0		
					NOx	1.77	6.29			1.77	6.29	0	0		
					PM	0.13	0.49			0.13	0.49	0	0		
					PM10	0.13	0.49			0.13	0.49	0	0		
					PM2.5	0.13	0.49			0.13	0.49	0	0		
					SO2	0.27	0.64			0.27	0.64	0	0		
					VOC	0.1	0.35			0.1	0.35	0	0		
Not New/Modified	Yes	01-H-03	132	Heater - Crude Stabilizer (01-H-03)	CO	0.17	0.72			0.17	0.72	0	0	Heater	
					NH3	<0.01	<0.01			<0.01	<0.01	0	0		
					NOx	0.48	2.06			0.48	2.06	0	0		
					PM	0.04	0.15			0.04	0.15	0	0		
					PM10	0.04	0.15			0.04	0.15	0	0		
					PM2.5	0.04	0.15			0.04	0.15	0	0		
					SO2	0.07	0.22			0.07	0.22	0	0		
					VOC	0.03	0.11			0.03	0.11	0	0		
Not New/Modified	Yes	02-H-01	74	Vacuum Heater	CO	4.99	16.77			4.99	16.77	0	0	Heater	
					NH3	0.03	0.14			0.03	0.14	0	0		
					NOx	5.98	26.21			5.98	26.21	0	0		
					PM	0.74	3.26			0.74	3.26	0	0		
					PM10	0.74	3.26			0.74	3.26	0	0		
					PM2.5	0.74	3.26			0.74	3.26	0	0		
					SO2	1.37	4.13			1.37	4.13	0	0		
					VOC	0.54	2.36			0.54	2.36	0	0		
Not New/Modified	Yes	11-H-01	114	Heater - Desalter Heater (11-H-01) -	CO	3.54	15.52			3.54	15.52	0	0	Heater	
					NH3	0.03	0.14			0.03	0.14	0	0		
					NOx	3.96	17.34			3.96	17.34	0	0		
					PM	0.74	3.23			0.74	3.23	0	0		
					PM10	0.74	3.23			0.74	3.23	0	0		
					PM2.5	0.74	3.23			0.74	3.23	0	0		
					SO2	1.52	4.6			1.52	4.6	0	0		
					VOC	0.53	2.34			0.53	2.34	0	0		
					H2S	0.02	0.05			0.02	0.05	0	0		
Not New/Modified	Yes	12-H-1A/B	115	HDS Heaters	CO	8.08	32.91			8.08	32.91	0	0	Heater	
					NH3	0.05	0.22			0.05	0.22	0	0		
					NOx	9.7	42.07			9.7	42.07	0	0		
					PM	1.2	5.22			1.2	5.22	0	0		
					PM10	1.2	5.22			1.2	5.22	0	0		
					PM2.5	1.2	5.22			1.2	5.22	0	0		
					SO2	2.49	7.45			2.49	7.45	0	0		
					VOC	0.87	3.78			0.87	3.78	0	0		
Not New/Modified	Yes	12-H02	116	Heater - HDS Pre-Heater (12-H-02)	CO	0.31	1.1			0.31	1.1	0	0	Heater	
					NH3	<0.01	0.02			<0.01	0.02	0	0		
					NOx	2.36	8.28			2.36	8.28	0	0		
					PM	0.15	0.51			0.15	0.51	0	0		
					PM10	0.15	0.51			0.15	0.51	0	0		
					PM2.5	0.15	0.51			0.15	0.51	0	0		
					SO2	0.3	0.73			0.3	0.73	0	0		
					VOC	0.11	0.37			0.11	0.37	0	0		
Not New/Modified	Yes	13-H-01B	118	Hydrogen Reformer Heater	CO	58.51	220.73			58.51	220.73	0	0	Heater	
					NH3	0.37	1.52			0.37	1.52	0	0		
					NOx	70.21	284.4			70.21	284.4	0	0		
					PM	8.72	35.8			8.72	35.8	0	0		
					PM10	8.72	35.8			8.72	35.8	0	0		
					PM2.5	8.72	35.8			8.72	35.8	0	0		
					SO2	44.53	122.64			44.53	122.64	0	0		
					VOC	9.95	25.91			9.95	25.91	0	0		

Action Requested (only 1 action per FIN)	Include these emissions in annual (tpy) summary?	Facility ID Number (FIN)	Emission Point Number (EPN)	Source Name	Pollutant	Current Short-Term (lb/hr)	Current Long-Term (tpy)	Consolidated Current Short-Term (lb/hr)	Consolidated Current Long-Term (tpy)	Proposed Short Term (lb/hr)	Proposed Long-Term (tpy)	Short-Term Difference (lb/hr)	Long-Term Difference (tpy)	Unit Type (Used for reviewing BACT and Monitoring Requirements)	Unit Type Notes (only if "other" unit type in Column O)
Not New/Modified	Yes	30-B-02	153	Heater - HR Boiler (30-B-02)	CO	8.46	28.94			8.46	28.94	0	0	Heater	
					NH3	0.09	0.33			0.09	0.33	0	0		
					NOx	22.56	82.34			22.56	82.34	0	0		
					PM	2.1	5.51			2.1	5.51	0	0		
					PM10	2.1	5.51			2.1	5.51	0	0		
					PM2.5	2.1	5.51			2.1	5.51	0	0		
					SO2	4.34	10.66			4.34	10.66	0	0		
					VOC	1.52	3.99			1.52	3.99	0	0		
Not New/Modified	Yes	30-B-04	30-B-04	Boiler 30-B-04	CO	19.84	48.14			19.84	48.14	0	0	Boiler: Liquid and Gas Fuel, > 40 MMBtu/hr	
					NH3	2.41	5.86			2.41	5.86	0	0		
					NOx	8.25	20.02			8.25	20.02	0	0		
					PM	4.1	9.95			4.1	9.95	0	0		
					PM10	4.1	9.95			4.1	9.95	0	0		
					PM2.5	4.1	9.95			4.1	9.95	0	0		
					SO2	8.65	14.47			8.65	14.47	0	0		
					VOC	2.97	7.2			2.97	7.2	0	0		
Not New/Modified	Yes	30-B-04	30-B-04MSS	Boiler 30-B-04	CO	198.55	3.57			198.55	3.57	0	0	Boiler: Liquid and Gas Fuel, > 40 MMBtu/hr	
					NOx	55	0.99			55	0.99	0	0		
Not New/Modified	Yes	31-H-01	117	Heater - Alky Frac. Reb. (31-H-01)	CO	2.51	8.83			2.51	8.83	0	0	Heater	
					NH3	0.05	0.17			0.05	0.17	0	0		
					NOx	5.64	19.86			5.64	19.86	0	0		
					PM	1.17	4.11			1.17	4.11	0	0		
					PM10	1.17	4.11			1.17	4.11	0	0		
					PM2.5	1.17	4.11			1.17	4.11	0	0		
					SO2	2.41	5.86			2.41	5.86	0	0		
					VOC	0.85	2.97			0.85	2.97	0	0		
Not New/Modified	Yes	36-H-01	120	Heater - Butamer Heater (36-H-01)	CO	0.27	0.98			0.27	0.98	0	0	Heater	
					NH3	<0.01	0.02			<0.01	0.02	0	0		
					NOx	2	4.3			2	4.3	0	0		
					PM	0.12	0.26			0.12	0.26	0	0		
					PM10	0.12	0.26			0.12	0.26	0	0		
					PM2.5	0.12	0.26			0.12	0.26	0	0		
					SO2	0.26	0.41			0.26	0.41	0	0		
					VOC	0.09	0.19			0.09	0.19	0	0		
Not New/Modified	Yes	38-H-01	162	Oleflex Heater	CO	19.45	69.49			19.45	69.49	0	0	Heater	
					NH3	0.12	0.49			0.12	0.49	0	0		
					NOx	23.34	65.75			23.34	65.75	0	0		
					PM	2.9	11.62			2.9	11.62	0	0		
					PM10	2.9	11.62			2.9	11.62	0	0		
					PM2.5	2.9	11.62			2.9	11.62	0	0		
					SO2	5.99	16.57			5.99	16.57	0	0		
					VOC	2.1	8.41			2.1	8.41	0	0		
Not New/Modified	Yes	46-H-01	119	Heater - Sulften Heater (46-H-01)	CO	0.35	1.49			0.35	1.49	0	0	Heater	
					NH3	0.01	0.03			0.01	0.03	0	0		
					NOx	2.62	5.21			2.62	5.21	0	0		
					PM	0.16	0.32			0.16	0.32	0	0		
					PM10	0.16	0.32			0.16	0.32	0	0		
					PM2.5	0.16	0.32			0.16	0.32	0	0		
					SO2	0.34	0.63			0.34	0.63	0	0		
					VOC	0.12	0.24			0.12	0.24	0	0		
Not New/Modified	Yes	47-H-04	150	HCU Heater	CO	6.1	24.38			6.1	24.38	0	0	Heater	
					NH3	0.06	0.26			0.06	0.26	0	0		
					NOx	12.19	48.76			12.19	48.76	0	0		
					PM	1.51	6.06			1.51	6.06	0	0		
					PM10	1.51	6.06			1.51	6.06	0	0		
					PM2.5	1.51	6.06			1.51	6.06	0	0		
					SO2	3.13	8.63			3.13	8.63	0	0		
					VOC	1.1	4.38			1.1	4.38	0	0		
Not New/Modified	Yes	48-H-01	151	Heater - NHU Heater (48-H-01)	CO	3.05	6.68			3.05	6.68	0	0	Heater	
					NH3	0.01	0.05			0.01	0.05	0	0		
					NOx	3.9	17.08			3.9	17.08	0	0		
					PM	0.29	1.27			0.29	1.27	0	0		
					PM10	0.29	1.27			0.29	1.27	0	0		
					PM2.5	0.29	1.27			0.29	1.27	0	0		
					SO2	0.6	1.81			0.6	1.81	0	0		
					VOC	0.21	0.92			0.21	0.92	0	0		
Not New/Modified	Yes	49-H-03	152	CRU Heater	CO	16.85	57.02			16.85	57.02	0	0	Heater	
					NH3	0.18	0.6			0.18	0.6	0	0		
					NOx	39.31	133.06			39.31	133.06	0	0		
					PM	4.18	14.16			4.18	14.16	0	0		
					PM10	4.18	14.16			4.18	14.16	0	0		
					PM2.5	4.18	14.16			4.18	14.16	0	0		
					SO2	9.8	22.69			9.8	22.69	0	0		
					VOC	3.03	10.25			3.03	10.25	0	0		
Not New/Modified	Yes	49-H-71	172	Heater - RSU Heater (49-H-71)	CO	3.3	12.72			3.3	12.72	0	0	Heater	
					NH3	0.02	0.08			0.02	0.08	0	0		

Action Requested (only 1 action per FIN)	Include these emissions in annual (tpy) summary?	Facility ID Number (FIN)	Emission Point Number (EPN)	Source Name	Pollutant	Current Short-Term (lb/hr)	Current Long-Term (tpy)	Consolidated Current Short-Term (lb/hr)	Consolidated Current Long-Term (tpy)	Proposed Short Term (lb/hr)	Proposed Long-Term (tpy)	Short-Term Difference (lb/hr)	Long-Term Difference (tpy)	Unit Type (Used for reviewing BACT and Monitoring Requirements)	Unit Type Notes (only if "other" unit type in Column O)
					NOx	3.96	15.26			3.96	15.26	0	0		
					PM	0.49	1.9			0.49	1.9	0	0		
					PM10	0.49	1.9			0.49	1.9	0	0		
					PM2.5	0.49	1.9			0.49	1.9	0	0		
					SO2	1.02	2.7			1.02	2.7	0	0		
					VOC	0.36	1.37			0.36	1.37	0	0		
Not New/Modified	Yes	49-H-90	49-H-90	Heater - C7 Splitter Reb. (49-H-90)	CO	5.32	16.82			5.32	16.82	0	0	Heater	
					NH3	0.03	0.13			0.03	0.13	0	0		
					NOx	4.25	15.46			4.25	15.46	0	0		
					PM	0.79	3.01			0.79	3.01	0	0		
					PM10	0.79	3.01			0.79	3.01	0	0		
					PM2.5	0.79	3.01			0.79	3.01	0	0		
					SO2	1.64	4.29			1.64	4.29	0	0		
					VOC	0.57	2.18			0.57	2.18	0	0		
Not New/Modified	Yes	52-H-01	195	Heater - GDU Charge Heater (52-H-01)	CO	13.65	34.29			13.65	34.29	0	0	Heater	
					NH3	0.05	0.2			0.05	0.2	0	0		
					NOx	5.8	14.69			5.8	14.69	0	0		
					PM	1.23	4.61			1.23	4.61	0	0		
					PM10	1.23	4.61			1.23	4.61	0	0		
					PM2.5	1.23	4.61			1.23	4.61	0	0		
					SO2	2.55	6.57			2.55	6.57	0	0		
					VOC	0.89	3.34			0.89	3.34	0	0		
Not New/Modified	Yes	CRUDE UNIT	1F	Crude Unit	VOC							0	0	Fugitives: Piping and Equipment Leak	
Not New/Modified	Yes	VACUUMUNIT	2F	Vacuum Unit	H2S							0	0	Fugitives: Piping and Equipment Leak	
					VOC							0	0		
Not New/Modified	Yes	LEU-F	4F	LEU Unit	VOC							0	0	Fugitives: Piping and Equipment Leak	
Not New/Modified	Yes	11F-HDS	11F	Desalter Unit	VOC							0	0	Fugitives: Piping and Equipment Leak	
Not New/Modified	Yes	HDS-FUG	12F	HDS Unit	H2S							0	0	Fugitives: Piping and Equipment Leak	
					VOC							0	0		
Not New/Modified	Yes	SMR-FUG	13F	H2 Reformer	VOC							0	0	Fugitives: Piping and Equipment Leak	
Not New/Modified	Yes	HRLEU-FUG	18F	LEU -2	VOC							0	0	Fugitives: Piping and Equipment Leak	
Not New/Modified	Yes	LRU	20F	LRU	VOC							0	0	Fugitives: Piping and Equipment Leak	
New/Modified	Yes	HOC-FUG	21/22F	HOC	H2S							0	0	Fugitives: Piping and Equipment Leak	
					VOC							0	0		
Not New/Modified	Yes	30B03F	30F	Boiler House	VOC							0	0	Fugitives: Piping and Equipment Leak	
Not New/Modified	Yes	07-F	07F	#07 BUP Flare	VOC							0	0	Control: Flare	
Not New/Modified	Yes	ALKY-FUG	31F	Alky Unit	H2S							0	0	Fugitives: Piping and Equipment Leak	
					HF	0.52	2.3			0.52	2.3	0	0		
					VOC							0	0		
Not New/Modified	Yes	BUTAMER	36F	Butamer Unit	VOC							0	0	Fugitives: Piping and Equipment Leak	
Not New/Modified	Yes	MTBE-FUG	37F	Iso-Octene	VOC							0	0	Fugitives: Piping and Equipment Leak	
Not New/Modified	Yes	OLEFLEX-FU	38F	Oleflex Unit	VOC							0	0	Fugitives: Piping and Equipment Leak	
Not New/Modified	Yes	SRU-F	46-24F	SULF-10 Fugitives	H2S							0	0	Fugitives: Piping and Equipment Leak	
					VOC							0	0		
Not New/Modified	Yes	SRU-FUG	41F	SRU Unit Fugitives	H2S							0	0	Fugitives: Piping and Equipment Leak	
					VOC							0	0		
Not New/Modified	Yes	HCU-FUG	47F	HCU Unit	H2S							0	0	Fugitives: Piping and Equipment Leak	
					VOC							0	0		
Not New/Modified	Yes	47PSA	47PSA	PSA Unit	VOC							0	0	Fugitives: Piping and Equipment Leak	
Not New/Modified	Yes	NHT-FUG	48F	NHT Unit	H2S							0	0	Fugitives: Piping and Equipment Leak	
					VOC							0	0		
Not New/Modified	Yes	CRU-FUG	49F	CRU Unit	VOC							0	0	Fugitives: Piping and Equipment Leak	
Not New/Modified	Yes	49-XFU	175	XFU/RFU/C7Split Unit	VOC							0	0	Fugitives: Piping and Equipment Leak	
Not New/Modified	Yes	GDU-FUG	52F	GDU Unit	VOC							0	0	Fugitives: Piping and Equipment Leak	
Not New/Modified	Yes	DOCKS-F	DOCKS	DK-Docks	VOC							0	0	Fugitives: Piping and Equipment Leak	
Not New/Modified	Yes	08-F	08F	#08FLR/Day Tanks	VOC							0	0	Fugitives: Piping and Equipment Leak	
Not New/Modified	Yes	LPG STORAGE	LPG STGF	LPG STORAGE	VOC							0	0	Fugitives: Piping and Equipment Leak	
Not New/Modified	Yes	MVRUF	MVRUF	MVRU	VOC							0	0	Fugitives: Piping and Equipment Leak	
Not New/Modified	Yes	#TM-Terminal	TERM-F	#TM-Terminal	VOC							0	0	Fugitives: Piping and Equipment Leak	
Not New/Modified	Yes	PIPING-FUG	TRKRACKFUG	TRUCK RACK	VOC							0	0	Fugitives: Piping and Equipment Leak	
Not New/Modified	Yes	WWTP-FUG	83F	Wastewater Treatment Plant	VOC							0	0	Fugitives: Piping and Equipment Leak	
Not New/Modified	Yes	SHU-FUG	54F	Selective Hydrogenation Unit	VOC							0	0	Fugitives: Piping and Equipment Leak	
New/Modified	Yes	SWS-FUG	42F	Sour Water Stripper	H2S	<0.01	0.02			<0.01	0.02	0	0	Fugitives: Piping and Equipment Leak	
					VOC							0	0		
Not New/Modified	Yes	38-SCRUB	168	Oleflex CCR	Cl2	<0.01	0.04			<0.01	0.04	0	0	Control: Absorber	
					H2SO4	<0.01	0.01			<0.01	0.01	0	0		
					HCl	0.06	0.28			0.06	0.28	0	0		
					SO2	0.04	0.19			0.04	0.19	0	0		
Not New/Modified	Yes	73-TK-9	69	Tank - 9	VOC	3.1	0.49			3.1	0.49	0	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
Not New/Modified	Yes	HOC-CT	122	Cooling Tower - HOC	PM	17.71	65.86			3.54	13.17	-14.17	-52.69	Cooling Tower	
					PM10	16.82	62.58			3.36	12.52	-13.46	-50.06		
					PM2.5	2.63	9.78			0.53	1.96	-2.1	-7.82		
					VOC	5.67	21.09			5.67	21.09	0	0		
Not New/Modified	Yes	Alky-CT	123	Cooling Tower - Alky	PM	0.71	2			0.71	2	0	0	Cooling Tower	
					PM10	0.7	1.98			0.7	1.98	0	0		
					PM2.5	0.19	0.55			0.19	0.55	0	0		

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					VOC	1.26	3.55			1.26	3.55	0	0		
Not New/Modified	Yes	BUP-CT	167-CT	Cooling Tower - BUP	PM	4.52	19.26			4.52	19.26	0	0	Cooling Tower	
					PM10	4.3	18.33			4.3	18.33	0	0		
					PM2.5	0.67	2.88			0.67	2.88	0	0		
					VOC	1.47	6.27			1.47	6.27	0	0		
Not New/Modified	Yes	Crude-CT	1CT	Cooling Tower - Crude	PM	0.34	1.13			0.34	1.13	0	0	Cooling Tower	
					PM10	0.34	1.11			0.34	1.11	0	0		
					PM2.5	0.06	0.21			0.06	0.21	0	0		
					VOC	0.17	0.55			0.17	0.55	0	0		
Not New/Modified	Yes	ENG-16P04	16-P-04	Engine - 16-P-04	CO	2.2	0.06			2.2	0.06	0	0	Engine: Emergency, Diesel	
					NOx	8	0.21			8	0.21	0	0		
					PM	0.73	0.02			0.73	0.02	0	0		
					PM10	0.73	0.02			0.73	0.02	0	0		
					PM2.5	0.73	0.02			0.73	0.02	0	0		
					SO2	0.68	0.02			0.68	0.02	0	0		
					VOC	0.83	0.02			0.83	0.02	0	0		
Not New/Modified	Yes	ENG-16P07	16-P-07	Engine - 16-P-07	CO	2.67	0.04			2.67	0.04	0	0	Engine: Emergency, Diesel	
					NOx	9.69	0.15			9.69	0.15	0	0		
					PM	0.88	0.01			0.88	0.01	0	0		
					PM10	0.88	0.01			0.88	0.01	0	0		
					PM2.5	0.88	0.01			0.88	0.01	0	0		
					SO2	0.82	0.01			0.82	0.01	0	0		
					VOC	1.01	0.02			1.01	0.02	0	0		
Not New/Modified	Yes	16-P-11	16-P-11	Engine - 16-P-11	CO	0.8	0.02			0.8	0.02	0	0	Engine: Emergency, Diesel	
					NOx	3.32	0.09			3.32	0.09	0	0		
					PM	0.11	<0.01			0.11	<0.01	0	0		
					PM10	0.11	<0.01			0.11	<0.01	0	0		
					PM2.5	0.11	<0.01			0.11	<0.01	0	0		
					SO2	0.1	<0.01			0.1	<0.01	0	0		
					VOC	0.12	<0.01			0.12	<0.01	0	0		
Not New/Modified	Yes	16-P-12	16-P-12	Engine - 16-P-12	CO	0.8	0.02			0.8	0.02	0	0	Engine: Emergency, Diesel	
					NOx	3.32	0.09			3.32	0.09	0	0		
					PM	0.11	<0.01			0.11	<0.01	0	0		
					PM10	0.11	<0.01			0.11	<0.01	0	0		
					PM2.5	0.11	<0.01			0.11	<0.01	0	0		
					SO2	0.1	<0.01			0.1	<0.01	0	0		
					VOC	0.12	<0.01			0.12	<0.01	0	0		
Not New/Modified	Yes	16-P-13	16-P-13	Engine - 16-P-13	CO	0.8	0.02			0.8	0.02	0	0	Engine: Emergency, Diesel	
					NOx	3.32	0.09			3.32	0.09	0	0		
					PM	0.11	<0.01			0.11	<0.01	0	0		
					PM10	0.11	<0.01			0.11	<0.01	0	0		
					PM2.5	0.11	<0.01			0.11	<0.01	0	0		
					SO2	0.1	<0.01			0.1	<0.01	0	0		
					VOC	0.12	<0.01			0.12	<0.01	0	0		
Not New/Modified	Yes	16-P-14	16-P-14	Engine - 16-P-14	CO	0.8	0.02			0.8	0.02	0	0	Engine: Emergency, Diesel	
					NOx	3.32	0.09			3.32	0.09	0	0		
					PM	0.11	<0.01			0.11	<0.01	0	0		
					PM10	0.11	<0.01			0.11	<0.01	0	0		
					PM2.5	0.11	<0.01			0.11	<0.01	0	0		
					SO2	0.1	<0.01			0.1	<0.01	0	0		
					VOC	0.12	<0.01			0.12	<0.01	0	0		
Not New/Modified	No	MFL-1	126	Main Flare	CO							0	0	Control: Flare	
					H2S							0	0		
					NOx							0	0		
					SO2							0	0		
					VOC							0	0		
Not New/Modified	No	GF-1	158	Ground Flare	CO							0	0	Control: Flare	
					H2S							0	0		
					NOx							0	0		
					SO2							0	0		
					VOC							0	0		
Not New/Modified	No	MTBE FL-2	127	BUP Flare	CO							0	0	Control: Flare	
					H2S							0	0		
					NOx							0	0		
					SO2							0	0		
					VOC							0	0		
Not New/Modified	No	135	135	Acid Gas Flare (pilot only)	CO							0	0	Control: Flare	
					H2S							0	0		
					NOx							0	0		
					SO2							0	0		
					VOC							0	0		
Not New/Modified	Yes	Various	FLARECAP	Flares Subcap	CO	113.27	121.03			113.27	121.03	0	0	Other	Emission Cap
Not New/Modified	Yes	Various	FLARECAP		H2S	0.04	0.11			0.04	0.11	0	0		
Not New/Modified	Yes	Various	FLARECAP		NOx	23.04	20.77			23.04	20.77	0	0		
Not New/Modified	Yes	Various	FLARECAP		SO2	3.55	10.43			3.55	10.43	0	0		
Not New/Modified	Yes	Various	FLARECAP		VOC	291.17	63.51			291.17	63.51	0	0		
Not New/Modified	Yes	BARGEDOCKS	31	Loading - Heavy Oil	VOC	14.96	4.72			14.96	4.72	0	0	Loading: Marine Vessel	
Not New/Modified	Yes	SHIP FUG	SHIP FUG	Loading - Ships Fugitives	VOC	237.46	91.74			237.46	91.74	0	0	Loading: Marine Vessel	
Not New/Modified	Yes	VRU	VRU	Loading - MVRU	VOC	61.33	23.13			61.33	23.13	0	0	Control: Adsorption System: Regenerative	

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Not New/Modified	Yes	LOADINGFUG	TRUCKFUG	Loading - Truck Fugitives	VOC	11.86	15.87			11.86	15.87	0	0	Loading: Truck	
Not New/Modified	Yes	T-RACK	TRUCKCOMB	Loading - Truck Combustor	CO	15.28	22.76			15.28	22.76	0	0	Control: Vapor Combustor	
					NOx	7.64	11.38			7.64	11.38	0	0		
					SO2	0.02	0.03			0.02	0.03	0	0		
					VOC	8.18	13.61			8.18	13.61	0	0		
					PM	0.23	0.34			0.23	0.34	0	0		
					PM10	0.23	0.34			0.23	0.34	0	0		
					PM2.5	0.23	0.34			0.23	0.34	0	0		
Not New/Modified	Yes	AE-49601A/B	AE-49601A/B	AE-49601A/B Analyzer Vent	VOC	0.01	0.01			0.01	0.01	0	0	Other	Analyzer Vent
Not New/Modified	Yes	AE-49900A/B	AE-49900A/B	AE-49900A/B Analyzer Vent	VOC	0.01	0.01			0.01	0.01	0	0	Other	Analyzer Vent
Not New/Modified	Yes	AE-49901A/B	AE-49901A/B	AE-49901A/B Analyzer Vent	VOC	0.01	0.01			0.01	0.01	0	0	Other	Analyzer Vent
New/Modified	Yes	24-ST-01	121	HOC Belco Scrubber	CO	889.96	1470.33			958.4	1559.15	68.44	88.8201	Fluid Catalytic Cracking Unit	
					HCN	80.47	320.4			80.47	320.4	0	0		
					H2SO4	49	214.62			49	199.3	0	-15.32		
					NH3	4.84	17.88			4.84	17.88	0	0		
					NOx	356.2	473.81			384.12	473.81	27.92	0		
					PM	120.32	527			140	569.4	19.68	42.4		
					PM10	120.32	527			140	569.4	19.68	42.4		
					PM2.5	120.32	527			140	569.4	19.68	42.4		
					SO2	203.53	420.09			223.08	437.03	19.55	16.94		
					VOC	28.02	115.53			30.42	123.79	2.4	8.26		
					H2S					0.001016496	0.004452251	0.0011	0.0045		
					CO2						2451673	0	2451673		
					CH4						72.08	0	72.08		
					N2O						14.42	0	14.42		
					CO2 Equivalent						2457772	0	2457772		
Not New/Modified	Yes	SCOT/SRU	121	SRU Incinerators Cap	CO	220.75	678.85			220.75	678.85	0	0	SRU: Refinery	
					H2S	5.82	18.73			5.82	18.73	0	0		
					NOx	54.64	239.31			54.64	239.31	0	0		
					PM	24.72	98.38			24.72	98.38	0	0		
					PM10	24.72	98.38			24.72	98.38	0	0		
					PM2.5	24.72	98.38			24.72	98.38	0	0		
					SO2	191.32	837.99			191.32	837.99	0	0		
					VOC	0.96	3.46			0.96	3.46	0	0		
Not New/Modified	Yes	SCOT/SRU	121	Temporary SRU Stack	CO	10.04	7.23			10.04	7.23	0	0	SRU: Refinery	
					H2S	0.047	0.03			0.047	0.03	0	0		
					NOx	1.233	0.72			1.233	0.72	0	0		
					PM	1.205	0.87			1.205	0.87	0	0		
					PM10	1.205	0.87			1.205	0.87	0	0		
					PM2.5	1.205	0.87			1.205	0.87	0	0		
					SO2	13.816	9.95			13.816	9.95	0	0		
New/Modified	Yes	Various	FUG-CAP	Fugitives Subcap	VOC	105.75	462.99			112.45	492.32	6.7	29.33	Fugitives: Piping and Equipment Leak	
					H2S	0.58	2.52			0.59	2.58	0.01	0.06		
					NH3	0	0			0.01	0.06	0.01	0.06		
					CH4						3.59	0	3.59		
					CO2 Equivalent						90	0	90		
Not New/Modified	Yes	49-SCRUB	155	CRU CCR	HCl	0.07	0.29			0.07	0.29	0	0	Control: Absorber	
Not New/Modified	Yes	13-H-01B	118	SMR Condenser Vent	VOC	3.64	15.94			3.64	15.94	0	0	Process Vent	
Not New/Modified	Yes	MAGNACAT	21 BH	MAGNACAT Unit	PM	0.18	0.6			0.18	0.6	0	0	Control: Bag Filter/Baghouse	
					PM10	0.18	0.6			0.18	0.6	0	0		
					PM2.5	0.18	0.6			0.18	0.6	0	0		
Not New/Modified	Yes	83-TK-25	187	Tank 25	H2S	0.02	0.04			0.02	0.04	0	0	Storage Tank (4): Floating roof with TVP <11.0 psia	
					NH3	<0.01	<0.01			<0.01	<0.01	0	0		
					VOC	1.43	5.33			1.43	5.33	0	0		
Not New/Modified	Yes	ENG-83P136A	83-P-136A	Engine 83-P-136A-EN	CO	2.48	0.06			2.48	0.06	0	0	Engine: Emergency, Diesel	
					NOx	7.43	0.19			7.43	0.19	0	0		
					PM	0.38	<0.01			0.38	<0.01	0	0		
					PM10	0.38	<0.01			0.38	<0.01	0	0		
					PM2.5	0.38	<0.01			0.38	<0.01	0	0		
					SO2	0.88	0.02			0.88	0.02	0	0		
					VOC	7.43	0.19			7.43	0.19	0	0		
Not New/Modified	Yes	ENG-83P136B	83-P-136B	Engine 83-P-136B-EN	CO	2.48	0.06			2.48	0.06	0	0	Engine: Emergency, Diesel	
					NOx	7.43	0.19			7.43	0.19	0	0		
					PM	0.38	<0.01			0.38	<0.01	0	0		
					PM10	0.38	<0.01			0.38	<0.01	0	0		
					PM2.5	0.38	<0.01			0.38	<0.01	0	0		
					SO2	0.88	0.02			0.88	0.02	0	0		
					VOC	7.43	0.19			7.43	0.19	0	0		
Not New/Modified	Yes	WWTP-OWS	WWTP-OWS	WW collection system	VOC	8.62	37.77			8.62	37.77	0	0	Wastewater Facilities	

Action Requested (only 1 action per FIN)	Include these emissions in annual (tpy) summary?	Facility ID Number (FIN)	Emission Point Number (EPN)	Source Name	Pollutant	Current Short-Term (lb/hr)	Current Long-Term (tpy)	Consolidated Current Short-Term (lb/hr)	Consolidated Current Long-Term (tpy)	Proposed Short Term (lb/hr)	Proposed Long-Term (tpy)	Short-Term Difference (lb/hr)	Long-Term Difference (tpy)	Unit Type (Used for reviewing BACT and Monitoring Requirements)	Unit Type Notes (only if "other" unit type in Column O)
Not New/Modified	Yes	83-TK-26	186	Tank 26	VOC	0.12	0.45			0.12	0.45	0	0	Storage Tank (4): Floating roof with TVP <11.0 psia	
Not New/Modified	Yes	83-TK-159	184	Tank 159	VOC	0.15	0.39			0.15	0.39	0	0	Storage Tank (4): Floating roof with TVP <11.0 psia	
Not New/Modified	Yes	83-TK-160	185	Tank 160	VOC	0.15	0.39			0.15	0.39	0	0	Storage Tank (4): Floating roof with TVP <11.0 psia	
Not New/Modified	Yes	83-V-97	83-V-97	Tank 97	VOC	0.18	0.4			0.18	0.4	0	0	Storage Tank (4): Floating roof with TVP <11.0 psia	
Not New/Modified	Yes	83-V-58	83-V-58	Tank 58	VOC	0.11	0.44			0.11	0.44	0	0	Storage Tank (4): Floating roof with TVP <11.0 psia	
Not New/Modified	Yes	83-V-59	83-V-59	Tank 59	VOC	0.11	0.44			0.11	0.44	0	0	Storage Tank (4): Floating roof with TVP <11.0 psia	
Not New/Modified	Yes	83-TK-162	183a	Tank 162	VOC	0.39	1.77			0.39	1.77	0	0	Storage Tank (4): Floating roof with TVP <11.0 psia	
Not New/Modified	Yes	83-TK-155	182	Tank 155	VOC	0.39	1.77			0.39	1.77	0	0	Storage Tank (4): Floating roof with TVP <11.0 psia	
Not New/Modified	Yes	APISEP	124	API/DGF Combustor	CO	1.65	7.22			1.65	7.22	0	0	Control: Vapor Combustor	
					NOx	0.45	1.76			0.45	1.76	0	0		
					SO2	0.03	0.13			0.03	0.13	0	0		
					VOC	2.94	12.88			2.94	12.88	0	0		
Not New/Modified	Yes	83-TK-23	62	Equalization Tank	VOC	0.81	3.51			0.81	3.51	0	0	Storage Tank (4): Floating roof with TVP <11.0 psia	
Not New/Modified	Yes	83-TK27	83-TK27	Bio Oxidation Reactor Tank	VOC	0.51	2.22			0.51	2.22	0	0	Wastewater Facilities	
Not New/Modified	Yes	WWTP-AERB	WWTP-AERB	Aeration Basin	VOC	0.25	1.09			0.25	1.09	0	0	Wastewater Facilities	
Not New/Modified	Yes	WWTP-CLRF	WWTP-CLRF	Clarifier	VOC	<0.01	0.04			<0.01	0.04	0	0	Wastewater Facilities	
Not New/Modified	Yes	WWTP-SLB	WWTP-SLB	Saline Basin	VOC	<0.01	<0.01			<0.01	<0.01	0	0	Wastewater Facilities	
Not New/Modified	Yes	CAS01-01	01-01	Crude/Vacuum Unit Pump Alley	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS01-02	01-02	North Side of Vacuum Unit	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS01-03	01-03	North Side of Vacuum Unit	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS01-04	01-04	Northwest Side of Vacuum Unit - Main Sump	VOC	<0.01	0.03			<0.01	0.03	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS03-01	03-01	N of Tanks 156/161	VOC	0.02	0.08			0.02	0.08	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS98-02	98-02	WP MSAT Rail Rack	VOC	0.02	0.08			0.02	0.08	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS11-01	11-01	Desalter Pump Alley	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS41-01	41-01	North of 43-TK-08 (Amine Tank)	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS41-02	41-02	W of 41-V-05 (Acid Gas K.O. Drum)	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS49-01	49-01	Northwest of XFU	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS49-02	49-02	North Side of NHT (Unit 48)	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS49-03	49-03	NHT (Unit 48) Pump Alley	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS50-01	50-01	East of Tank 62	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS52-01	52-01	NW of GDU MCC Room	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS70-01	70-01	East of Tank 55	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS70-02	70-02	Northwest of Tank 106	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS70-03	70-03	West of Tank 94 (S&D Main Sump)	VOC	<0.01	0.03			<0.01	0.03	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS72-01	72-01	East of Tank 111	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS73-01	73-01	North of Tank 152 (Terminal 2A)	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS73-02	73-02	Between TK 8 & TK 164 (Terminal 2)	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS83-01	83-01	WWT (Hydroblast Pad)	VOC	0.02	0.07			0.02	0.07	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS83-02	83-02	WWT (Desalter Lift Station)	VOC	0.01	0.05			0.01	0.05	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS83-03	83-03	WWT (East of KOH Treater)	VOC	0.02	0.07			0.02	0.07	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS83-04	83-04	WWT (Northeast of Tank 159)	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS83-05	83-05	WWT (North Lift Station)	VOC	<0.01	0.03			<0.01	0.03	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS83-06	83-06	WWT (North of V-68)	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS83-07	83-07	WWT (South of V-55)	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS83-09	83-09	WWT (BSRP)	VOC	<0.01	0.02			<0.01	0.02	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	83-10	83-10	WWT 83-V-99 (Diversion Box)	VOC	0.02	0.07			0.02	0.07	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	83-12	83-12	WWT 83-V-28 (SE of Catalyst Pad)	VOC	0.02	0.07			0.02	0.07	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	CAS98-01	V-201	WP MSAT Rail Rack	VOC	0.51	2.23			0.51	2.23	0	0	Control: Adsorption System: Disposable	

Texas Commission on Environmental Quality
Form PI-1 General Application
Unit Types - Emission Rates

Action Requested (only 1 action per FIN)	Include these emissions in annual (tpy) summary?	Facility ID Number (FIN)	Emission Point Number (EPN)	Source Name	Pollutant	Current Short-Term (lb/hr)	Current Long-Term (tpy)	Consolidated Current Short-Term (lb/hr)	Consolidated Current Long-Term (tpy)	Proposed Short Term (lb/hr)	Proposed Long-Term (tpy)	Short-Term Difference (lb/hr)	Long-Term Difference (tpy)	Unit Type (Used for reviewing BACT and Monitoring Requirements)	Unit Type Notes (only if "other" unit type in Column O)
Not New/Modified	Yes	APISEP	124a	WP WWT API Combustor Backup	VOC	0.02	0.08			0.02	0.08	0	0	Control: Adsorption System: Disposable	
Not New/Modified	Yes	16-V-11	16-V-11	FWP 16-P-11 Diesel Tank	VOC	0.03	<0.01			0.03	<0.01	0	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
Not New/Modified	Yes	16-V-12	16-V-12	FWP 16-P-12 Diesel Tank	VOC	0.03	<0.01			0.03	<0.01	0	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
Not New/Modified	Yes	16-V-13	16-V-13	FWP 16-P-13 Diesel Tank	VOC	0.03	<0.01			0.03	<0.01	0	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
Not New/Modified	Yes	16-V-14	16-V-14	FWP 16-P-14 Diesel Tank	VOC	0.03	<0.01			0.03	<0.01	0	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
Not New/Modified	Yes	FWP-FUG	FWP-FUG	Firewater Pump Engine Fugitives	VOC	0.06	0.26			0.06	0.26	0	0	Fugitives: Piping and Equipment Leak	
New/Modified	Yes	30-B-05	30-B-05	Boiler 30-B-05	CO	0	0			33.48	70.84	33.48	70.84	Boiler: Liquid and Gas Fuel, > 40 MMBtu/hr	
					NH3	0	0			2.18	8.68	2.18	8.68		
					NOx	0	0			7.16	30.14	7.16	30.14		
					PM	0	0			3.56	14.16	3.56	14.16		
					PM10	0	0			3.56	14.16	3.56	14.16		
					PM2.5	0	0			3.56	14.16	3.56	14.16		
					SO2	0	0			11.56	38.06	11.56	38.06		
					VOC	0	0			2.81	11.3	2.81	11.3		
					H2S	0	0			0.001016496	0.004452251	0.0011	0.0045		
					CO2	0	0				222364	0	222364		
					CH4	0	0				4.19	0	4.19		
					N2O	0	0				0.42	0	0.42		
					CO2 Equivalent	0	0				222594	0	222594		
New/Modified	Yes	30-B-05	30-B-05	Boiler 30-B-05 (MSS)	CO	0	0			167.39	0	167.39	0	Boiler: Liquid and Gas Fuel, > 40 MMBtu/hr	
					NOx	0	0			71.61	0	71.61	0		
New/Modified	Yes	HOC-PP-CT	HOC-PP-CT	Cooling Tower - Propylene Project	PM	0	0			0.78	3.42	0.78	3.42	Cooling Tower	
					PM10	0	0			0.18	0.81	0.18	0.81		
					PM2.5	0	0			<0.01	0.005	0.01	0.005		
					VOC	0	0			1.09	4.78	1.09	4.78		
New/Modified	Yes	XX-01	XX-01	HOC PP Gas Plant CAS	VOC	0	0			<0.01	0.02	0.01	0.02	Control: Adsorption System: Disposable	
New/Modified	Yes	MEROX	121/ 30-B-05	MEROX Vent	VOC							0	0	Process Vent	
					SO2							0	0		
					H2S							0	0		
New/Modified	No	SHU2-FUG	##F	Selective Hydrogenation Unit	VOC							0	0	Fugitives: Piping and Equipment Leak	
New/Modified	No	LPG-FUG	##F	LPG Gas Plant	VOC							0	0	Fugitives: Piping and Equipment Leak	
New/Modified	No	30B05F	##F	Boiler 30-B-05	VOC							0	0	Fugitives: Piping and Equipment Leak	
												0	0		
												0	0		
												0	0		
												0	0		
												0	0		
												0	0		

Texas Commission on Environmental Quality
Form PI-1 General Application
Stack Parameters

Date: April 19, 2022
Permit #: 38754
Company: Valero Refining - Texas, L.P.

Emission Point Discharge Parameters												
EPN	**Included in EMEW?**	**UTM Coordinates Zone**	**East (Meters)**	**North (Meters)**	**Building Height (ft)**	**Height Above Ground (ft)**	**Stack Exit Diameter (ft)**	**Velocity (FPS)**	**Temperature (°F)**	**Fugitives - Length (ft)**	**Fugitives - Width (ft)**	**Fugitives - Axis Degrees**
MSS Caps	Yes											
1	Yes											
131	Yes											
132	Yes											
74	Yes											
114	Yes											
115	Yes											
116	Yes											
118	Yes											
153	Yes											
30-B-04	Yes											
30-B-04MSS	Yes											
117	Yes											
120	Yes											
162	Yes											
119	Yes											
150	Yes											
151	Yes											
152	Yes											
172	Yes											
49-H-90	Yes											
195	Yes											
1F	Yes											
2F	Yes											
4F	Yes											
11F	Yes											
12F	Yes											
13F	Yes											
18F	Yes											
20F	Yes											
21/22F	Yes											
30F	Yes											
07F	Yes											
31F	Yes											
36F	Yes											
37F	Yes											
38F	Yes											
46-24F	Yes											
41F	Yes											
47F	Yes											
47PSA	Yes											
48F	Yes											

Texas Commission on Environmental Quality
Form PI-1 General Application
Stack Parameters

Date: April 19, 2022
Permit #: 38754
Company: Valero Refining - Texas, L.P.

EPN	Included in EMEW?	UTM Coordinates Zone	East (Meters)	North (Meters)	Building Height (ft)	Height Above Ground (ft)	Stack Exit Diameter (ft)	Velocity (FPS)	Temperature (°F)	Fugitives - Length (ft)	Fugitives - Width (ft)	Fugitives - Axis Degrees
49F	Yes											
175	Yes											
52F	Yes											
DOCKS	Yes											
08F	Yes											
LPG STGF	Yes											
MVRUF	Yes											
TERM-F	Yes											
TRKRACKFUG	Yes											
83F	Yes											
54F	Yes											
42F	Yes											
168	Yes											
69	Yes											
122	Yes											
123	Yes											
167-CT	Yes											
1CT	Yes											
16-P-04	Yes											
16-P-07	Yes											
16-P-11	Yes											
16-P-12	Yes											
16-P-13	Yes											
16-P-14	Yes											
126	Yes											
158	Yes											
127	Yes											
135	Yes											
FLARECAP	Yes											
31	Yes											
SHIP FUG	Yes											
VRU	Yes											
TRUCKFUG	Yes											
TRUCKCOMB	Yes											
AE-49601A/B	Yes											
AE-49900A/B	Yes											
AE-49901A/B	Yes											
121	Yes											
FUG-CAP	Yes											
155	Yes											
21 BH	Yes											
187	Yes											
83-P-136A	Yes											

Date: _April 19, 2022_
Permit #: _38754_
Company: _Valero Refining - Texas, L.P._

EPN	Included in EMEW?	UTM Coordinates Zone	East (Meters)	North (Meters)	Building Height (ft)	Height Above Ground (ft)	Stack Exit Diameter (ft)	Velocity (FPS)	Temperature (°F)	Fugitives - Length (ft)	Fugitives - Width (ft)	Fugitives - Axis Degrees
83-P-136B	Yes											
WWTP-OWS	Yes											
186	Yes											
184	Yes											
185	Yes											
83-V-97	Yes											
83-V-58	Yes											
83-V-59	Yes											
183a	Yes											
182	Yes											
124	Yes											
62	Yes											
83-TK27	Yes											
WWTP-AERB	Yes											
WWTP-CLRF	Yes											

Texas Commission on Environmental Quality
Form PI-1 General Application
Public Notice

Date: April 19, 2022
Permit #: 38754
Company: Valero Refining - Texas, L.P.

I. Public Notice Applicability	
A. Application Type	
Is this an application for a new or major modification of a PSD (including GHG), Nonattainment, or HAP permit?	Yes
Is this an application for a minor permit amendment?	Yes
Is there any change in character of emissions in this application (such as a new VOC or PM species)?	No
Is there a new air contaminant in this application (such as a newly emitted or newly quantified criteria pollutant)?	No

B. Project Increases and Public Notice Thresholds (for Initial and Amendment Projects)

For public notice applicability, the agency does not include consolidation or incorporation of any previously authorized facility or activity (PBR, standard permits, etc.), changes to permitted allowable emission rates when exclusively due to changes to standardized emission factors, or reductions in emissions which are not enforceable through the amended permit. Thus, the total emissions increase would be the sum of emissions increases under the amended permit and the emissions decreases under the amended permit for each air contaminant.

The table below will generate emission increases based on the values represented on the "Unit Types - Emission Rates" sheet. Use the "yes" and "no" options in column B of the "Unit Types - Emission Rates" worksheet to indicate if a unit's proposed change of emissions should be included in these totals.

Notes:

1. Emissions of PM, PM10, and/or PM2.5 may have been previously quantified and authorized as PM, PM10,and/or PM2.5. These emissions will be speciated based on current guidance and policy to demonstrate compliance with current standards and public notice requirements may change during the permit review.

This row is optional. If you do not think the table below accurately represents public notice applicability increases for your project, provide discussion here (1000 characters).	
Do the facilities handle, load, unload, dry, manufacture, or process grain, seed, legumes, or vegetable fibers (agricultural facilities)?	No

Pollutant	**Current Long-Term (tpy)**	**Consolidated Emissions (tpy)**	**Proposed Long-Term (tpy)**	**Project Change in Allowable (tpy)**	**PN Threshold**	**Notice required?**
VOC	1068.64	0.00	1122.72	54.08	5	Yes
PM	833.18	0.00	842.02	8.84	5	Yes*
PM_{10}	828.09	0.00	836.95	8.86	5	Yes*
$PM_{2.5}$	757.51	0.00	807.81	50.30	5	Yes*
NO_x	1617.73	0.00	1654.85	37.12	5	Yes
CO	3019.83	0.00	3220.23	200.40	50	Yes
SO_2	1557.56	0.00	1614.22	56.66	10	Yes
Pb	0.00	0.00	0.00	0.00	0.6	No
H2S	21.72	0	21.7889045	0.068904501	5	No
NH3	29.06	0	37.8	8.74	5	Yes
Exempt Solvents	0.6	0	0.6	0	5	No
HF	2.3	0	2.3	0	5	No
Cl2	0.04	0	0.04	0	5	No
H2SO4	214.63	0	199.31	-15.32	5	No
HCl	0.57	0	0.57	0	5	No
HCN	320.4	0	320.4	0	5	No
CO2	0	0	2674037	2674037	5	Yes
CH4	0	0	79.86	79.86	5	Yes
N2O	0	0	14.84	14.84	5	Yes
CO2 Equivalent	0	0	2680456	2680456	**	Yes

* Notice is required for PM, PM10, and PM2.5 if one of these pollutants is above the threshold.

** Notice of a GHG action is determined by action type. Initial and major modification always require notice. Voluntary updates require a consolidated notice if there is a change to BACT. Project emission increases of CO2e (CO2 equivalent) are not relevant for determining public notice of GHG permit actions.

D. Is public notice required for this project as represented in this PI-1? If no, proceed to Section III Small Business Classification. Note: public notice applicability for this project may change throughout the technical review.	Yes
E. Are any HAPs to be authorized/re-authorized with this project? The category "HAPs" must be specifically listed in the public notice if the project authorizes (reauthorizes for renewals) any HAP pollutants.	No

II. Public Notice Information

Complete this section if public notice is required (determined in the above section) or if you are not sure if public notice is required.

A. Contact Information

Enter the contact information for the **person responsible for publishing.** This is a designated representative who is responsible for ensuring public notice is properly published in the appropriate newspaper and signs are posted at the facility site. This person will be contacted directly when the TCEQ is ready to authorize public notice for the application.

Prefix (Mr., Ms., Dr., etc.):	Ms.
First Name:	Meagan
Last Name:	Marquard
Title:	Superintendent Environmental
Company Name:	Valero Refining - Texas, L.P.

Mailing Address:	PO Box 9370
Address Line 2:	
City:	Corpus Christi
State:	TX
ZIP Code:	78469
Telephone Number:	361-299-8913
Fax Number:	361-289-3126
Email Address:	Meagan.Marquard@valero.com

Enter the contact information for the **Technical Contact.** This is the designated representative who will be listed in the public notice as a contact for additional information.

Prefix (Mr., Ms., Dr., etc.):	Ms.
First Name:	Meagan
Last Name:	Marquard
Title:	Superintendent Environmental
Company Name:	Valero Refining - Texas, L.P.
Mailing Address:	PO Box 9370
Address Line 2:	
City:	Corpus Christi
State:	TX
ZIP Code:	78469
Telephone Number:	361-299-8913
Fax Number:	361-289-3126
Email Address:	Meagan.Marquard@valero.com

B. Public place

Place a copy of the full application (including the entire completed PI-1 and all attachments) at a public place in the county where the facilities are or will be located. You must state where in the county the application will be available for public review and comment. The location must be a public place and described in the notice. A public place is a location which is owned and operated by public funds (such as libraries, county courthouses, city halls) and cannot be a commercial enterprise. You are required to pre-arrange this availability with the public place indicated below. The application must remain available from the first day of publication through the designated comment period.

If this is an application for a PSD, nonattainment, or FCAA §112(g) permit, the public place must have internet access available for the public as required in 30 TAC § 39.411(f)(3).

If the application is submitted to the agency with information marked as Confidential, you are required to indicate which specific portions of the application are not being made available to the public. These portions of the application must be accompanied with the following statement: ***Any request for portions of this application that are marked as confidential must be submitted in writing, pursuant to the Public Information Act, to the TCEQ Public Information Coordinator, MC 197, P.O. Box 13087, Austin, Texas 78711-3087.***

Name of Public Place:	Owen R. Hopkins Public Library
Physical Address:	3202 McKenzie Road
Address Line 2:	
City:	Corpus Christi
ZIP Code:	78410
County:	Nueces
Has the public place granted authorization to place the application for public viewing and copying?	Yes
Does the public place have Internet access available for the public?	Yes

C. Alternate Language Publication

In some cases, public notice in an alternate language is required. If an elementary or middle school nearest to the facility is in a school district required by the Texas Education Code to have a bilingual program, a bilingual notice will be required. If there is no bilingual program required in the school nearest the facility, but children who would normally attend those schools are eligible to attend bilingual programs elsewhere in the school district, the bilingual notice will also be required. If it is determined that alternate language notice is required, you are responsible for ensuring that the publication in the alternate language is complete and accurate in that language.

Is a bilingual program required by the Texas Education Code in the School District?	Yes
Are the children who attend either the elementary school or the middle school closest to your facility eligible to be enrolled in a bilingual program provided by the district?	Yes
If yes to either question above, list which language(s) are required by the bilingual program.	Spanish
Enter the second required language, if applicable.	
Enter the third required language, if applicable.	
Enter the fourth required language, if applicable.	

D. PSD and Nonattainment Permits Only

If this is an application for emissions of GHGs, select either "Separate Public Notice" or "Consolidated Public Notice". Note: Separate public notices requires a separate application.	Consolidated Public Notice

We must notify the applicable county judge and presiding officer when a PSD or Nonattainment permit or modification application is received. This information can be obtained at the link below:
https://www.txdirectory.com

Provide the information for the **County Judge** for the location where the facility is or will be located.

The Honorable:	Barbara Canales
Mailing Address:	901 Leopard, Room 303
Address Line 2:	
City:	Corpus Christi
State:	Texas
ZIP Code:	78401

Provide the information for the **Presiding Officer(s)** of the municipality for this facility site. This is frequently the Mayor.

First Name:	Paulette
Last Name:	Guajardo
Title:	Mayor
Mailing Address:	P.O. Box 9277
Address Line 2:	
City:	Corpus Christi
State:	Texas
ZIP Code:	78469
Are the proposed facilities located within 100 km or less of an affected state or Class I Area?	No

III. Small Business Classification	
Complete this section to determine small business classification. If a small business requests a permit, agency rules (30 TAC § 39.603(f)(1)(A)) allow for alternative public notification requirements if all of the following criteria are met. If these requirements are met, public notice does not have to include publication of the prominent (12 square inch) newspaper notice.	
Does the company (including parent companies and subsidiary companies) have fewer than 100 employees or less than $6 million in annual gross receipts?	No
Small business classification:	**No**

Texas Commission on Environmental Quality
Form PI-1 General Application
Federal Applicability

Date: April 19, 2022
Permit #: 38754
Company: Valero Refining - Texas, L.P.

I. County Classification	
Does the project require retrospective review?	No
County (completed for you from your response on the General sheet)	Nueces
This project will be located in an area that is in attainment for ozone as of Sept. 23, 2019. Select from the drop-down list to the right if you would like the project to be reviewed under a different classification.	
Determination:	**This project will be located in an area that is in attainment or unclassified for all pollutants. Nonattainment review is not required.**

II. PSD and GHG PSD Applicability Summary

Is netting required for the PSD analysis for this project? **Yes**

If yes, the project increases listed below should be after netting has been performed. Attach the netting information to the application.

Pollutant	**Project Increase (after netting)**	**Threshold**	**PSD Review Required?**
CO	413.3	100	Yes
NO_x	298.8	40	Yes
PM	241.7	25	Yes
PM_{10}	239.1	15	Yes
$PM_{2.5}$	238.3	10	Yes
SO_2	447.7	40	Yes
Ozone (as VOC)	110.7	40	Yes
Ozone (as NOx)	298.8	40	Yes
Pb	0	0.6	No
H_2S	0.6	10	No
TRS	0.6	10	No
Reduced sulfur compounds (including H_2S)	0.6	10	No
H_2SO_4	168.6	7	Yes
Fluoride (excluding HF)	0	3	No
CO2e	1110869	75000	Yes

[redacted]

Texas Commission on Environmental Quality
Form PI-1 General Application
Fees

Date: April 19, 2022
Permit #: 38754
Company: Valero Refining - Texas, L.P.

I. Expedited Permitting Request	
Are you requesting to expedite this project?	Yes
Does the purpose of the application associated with this request to expedite benefit the economy of this state or an area of this state? If no, this project does not qualify for expedited permitting.	Yes
Surcharge amount due	$ 20,000.00
Surcharge amount paid	$ 20,000.00
Enter the check, money order, ePay Voucher, or other transaction number.	ePay Voucher No. 530715
You must request expedited processing and pay the fee through STEERS when submitting your ePermit application.	

II. General Information - Non-Renewal	
Is this project for new facilities controlled and operated directly by the federal government? (30 TAC § 116.141(b)(1) and 30 TAC § 116.163(a))	No
A fee of $75,000 shall be required if no estimate of capital project cost is included with the permit application. (30 TAC § 116.141(d)) Select "yes" here to use this option.	Yes
Select Application Type	Major Application

VAL_000695

Date: _April 19, 2022_
Permit #: _38754_
Company: _Valero Refining - Texas, L.P._

In signing the "General" sheet with this fee worksheet attached, I certify that the total estimated capital cost of the project as defined in 30 TAC §116.141 is equal to or less than the above figure. I further state that I have read and understand Texas Water Code § 7.179, which defines Criminal Offenses for certain violations, including intentionally or knowingly making, or causing to be made, false material statements or representations.

Your estimated capital cost:	Maximum fee appies.
Permit Application Fee:	**$75,000.00**

VII. Total Permit Fees	
Note: fees can be paid together with one payment or as two separate payments.	
Non-Renewal Fee	$75,000.00
Total	$75,000.00

VIII. Payment Information	
A. Payment One (required)	
Was the fee paid online?	Yes
Enter the fee amount:	$ 75,000.00
Enter the check, money order, ePay Voucher, or other transaction number (enter "STEERS" if submitting and paying through STEERS):	ePay Voucher No. 530714 STEERS
Enter the Company name as it appears on the check:	

C. Total Paid	**$75,000.00**

IX. Professional Engineer Seal Requirement	
Is the estimated capital cost of the project above $2 million?	Yes
Is this project subject to an exemption contained in the Texas Engineering Practice Act (TEPA)? (30 TAC § 116.110(f))	No
Is the application required to be submitted under the seal of a Texas licensed P.E.? Note: an electronic PE seal is acceptable.	Yes

Pollutant	Does this pollutant require PSD review?	How will you demonstrate that this project meets all applicable requirements?	Notes	Additional Notes (optional)
Ozone	Yes	Protocol (required for all PSD projects, excluding GHG PSD)	Attach a protocol meeting all requirements listed on the TCEQ website.	
VOC	No	MERA steps 0-2 AND Modeling (screen or refined)	Attach both an "Electronic Modeling Evaluation Workbook" (EMEW) AND a detailed description of which MERA step was met. Include speciated emission rates with the total VOC and/or PM species corresponding to the short-term and long-term differences represented on the Unit Types-Emission Rates sheet.	
CO	Yes	Protocol (required for all PSD projects, excluding GHG PSD)	Attach a protocol meeting all requirements listed on the TCEQ website.	
H2S	No	Modeling: screen or refined	Attach a completed "Electronic Modeling Evaluation Workbook" (EMEW).	
NH3	No	Modeling: screen or refined	Attach a completed "Electronic Modeling Evaluation Workbook" (EMEW).	
NOx	Yes	Protocol (required for all PSD projects, excluding GHG PSD)	Attach a protocol meeting all requirements listed on the TCEQ website.	
PM	Yes	Protocol (required for all PSD projects, excluding GHG PSD)	Attach a protocol meeting all requirements listed on the TCEQ website.	

Pollutant	Does this pollutant require PSD review?	How will you demonstrate that this project meets all applicable requirements?	Notes	Additional Notes (optional)
PM10	Yes	Protocol (required for all PSD projects, excluding GHG PSD)	Attach a protocol meeting all requirements listed on the TCEQ website.	
PM2.5	Yes	Protocol (required for all PSD projects, excluding GHG PSD)	Attach a protocol meeting all requirements listed on the TCEQ website.	
SO2	Yes	Protocol (required for all PSD projects, excluding GHG PSD)	Attach a protocol meeting all requirements listed on the TCEQ website.	
Exempt Solvents	No	Protocol (required for all PSD projects, excluding GHG PSD)	Attach a protocol meeting all requirements listed on the TCEQ website.	
HF	No	Not applicable	This pollutant is not a part of this project or does not require an impacts analysis.	
Cl2	No	Not applicable	This pollutant is not a part of this project or does not require an impacts analysis.	
H2SO4	Yes	Protocol (required for all PSD projects, excluding GHG PSD)	Attach a protocol meeting all requirements listed on the TCEQ website.	

Date: _April 19, 2022_
Permit #: _38754_
Company: _Valero Refining - Texas, L.P._

Pollutant	Does this pollutant require PSD review?	How will you demonstrate that this project meets all applicable requirements?	Notes	Additional Notes (optional)
HCl	No	Not applicable	This pollutant is not a part of this project or does not require an impacts analysis.	
HCN	No	Not applicable	This pollutant is not a part of this project or does not require an impacts analysis.	
CO2				
CH4				
N2O				
CO2 Equivalent				

Texas Commission on Environmental Quality
Form PI-1 General Application
BACT

Date: _April 19, 2022_
Permit #: _38754_
Company: _Valero Refining - Texas, L.P._

Plant Type	Current Tier I BACT	Confirm	Additional Notes
Plant fuel gas facility	Maximum short term H2S emissions: 0.1 gr/dscf or 160 ppmv. Maximum annual H2S emissions: 80 ppmv.	Yes	Current permit requies 87 ppmv for short-term and 60 ppmv for annual.

Action Requested	FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
New/Modified	Various	MSS Activities	CO	See Additional Notes:	Yes	See Application Section 6
			H2S	See Additional Notes:	Yes	See Application Section 6
			NH3	See Additional Notes:	Yes	See Application Section 6
			NOx	See Additional Notes:	Yes	See Application Section 6
			PM	The emission reduction techniques for PM10 and PM2.5 will follow the technique for PM. See Additional Notes:	Yes	See Application Section 6
			SO2	See Additional Notes:	Yes	See Application Section 6
			VOC	See Additional Notes:	Yes	See Application Section 6
			Exempt Solvents	See Additional Notes:	Yes	See Application Section 6
			MSS	Not required since this is a MSS unit type.	Yes	
New/Modified	HOC-FUG	Fugitives: Piping and Equipment Leak	H2S	AVO inspection twice per shift. Appropriate credit for AVO program.	Yes	
			VOC	Specify which is applicable: 1. Uncontrolled VOC emissions < 10 tpy: none 2. 10 tpy < uncontrolled VOC emissions < 25 tpy: 28M leak detection and repair program. 75% credit for 28M. 3. Uncontrolled VOC emissions > 25 tpy: 28VHP leak detection and repair program. 97% credit for valves, 85% for pumps and compressors. 4. VOC vp < 0.002 psia: no inspection required, no fugitive emissions expected. For emissions of approved odorous compounds (chlorine, ammonia, hydrogen sulfide, hydrogen cyanide and mercaptans only): AVO inspection twice per shift. Appropriate credit for AVO program.	Yes	See Application Section 6
			MSS	Same as normal operation BACT requirements.	Yes	
New/Modified	SWS-FUG	Fugitives: Piping and Equipment Leak	H2S	AVO inspection twice per shift. Appropriate credit for AVO program.	Yes	

Date: April 19, 2022
Permit #: 38754
Company: Valero Refining - Texas, L.P.

Action Requested	FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
			VOC	Specify which is applicable: 1. Uncontrolled VOC emissions < 10 tpy: none 2. 10 tpy < uncontrolled VOC emissions < 25 tpy: 28M leak detection and repair program. 75% credit for 28M. 3. Uncontrolled VOC emissions > 25 tpy: 28VHP leak detection and repair program. 97% credit for valves, 85% for pumps and compressors. 4. VOC vp < 0.002 psia: no inspection required, no fugitive emissions expected. For emissions of approved odorous compounds (chlorine, ammonia, hydrogen sulfide, hydrogen cyanide and mercaptans only): AVO inspection twice per shift. Appropriate credit for AVO program.	Yes	See Application Section 6
			MSS	Same as normal operation BACT requirements.	Yes	
New/Modified	24-ST-01	Fluid Catalytic Cracking Unit	CO	500 ppmv maximum hourly concentration.	Yes	
			HCN	See additional notes:	Yes	See Application Section 6
			H2SO4	See Additional Notes:	Yes	See Application Section 6
			NH3	See Additional Notes:	Yes	See Application Section 6
			NOx	Short term limit: 200 ppmv, one hour average corrected to 0% oxygen. Annual emission limit: 100 ppmv, corrected to 0% oxygen.	Yes	
			PM	The emission reduction techniques for PM10 and PM2.5 will follow the technique for PM. Includes condensable PM. 1 lb/1000 lbs. of coke burned off. Opacity is limited to 15-20% over a 6-minute average period.	Yes	
			SO2	Short term limit: 300 ppmv, one hour average, corrected to 0% oxygen. Annual emission limit: 100 ppmv, corrected to 0% oxygen.	Yes	
			VOC	<10 ppmv exit concentration.	Yes	
			H2S	See Additional Notes:		See Application Section 6
			CO2	See additional notes:		See Application Section 6
			CH4	See additional notes:		See Application Section 6
			N2O	See additional notes:		See Application Section 6
			CO2 Equivalent	See additional notes:		See Application Section 6
			MSS	Same as normal operation BACT requirements.	Yes	
New/Modified	30-B-05	Boiler: Liquid and Gas Fuel, > 40 MMBtu/hr	CO	50 ppmv at 3% O2 achieved by good combustion practices, oxidation catalyst, and/or maintenance of the boiler. Specify technique(s).	Yes	See Application Section 6
			NH3	10 ppmvd at 3% O2 achieved by controlling the NH3 injection system to minimize NH3 slip.	Yes	See Application Section 6

Texas Commission on Environmental Quality
Form PI-1 General Application
BACT

Action Requested	FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
			NOx	Specify fuel type(s) to be fired. When firing natural gas: 0.01 lb/MMBtu achieved by When firing plant fuel gas: 0.015 lb/MMBtu achieved Note: plant fuel gas may contain up to 75% natural gas. Specifics: <50% H2; > 920 Btu/dscf. Emission limits typically achieved using dry-low NOx combustors, limiting fuel consumption, SCR, and/or water or steam injection. Specify technique(s). Fuel oil firing limited to 760 hours/yr.	Yes	See Application Section 6
			PM	The emission reduction techniques for PM10 and PM2.5 will follow the technique for PM. Less than 5% opacity. Good combustion practices.	Yes	See Application Section 6
			SO2	Firing low sulfur fuel and good combustion practices.	Yes	See Application Section 6
			VOC	Good combustion practices.	Yes	See Application Section 6
			H2S	Firing low sulfur fuel.		See Application Section 6
			CO2	See additional notes:		See Application Section 6
			CH4	See additional notes:		See Application Section 6
			N2O	See additional notes:		See Application Section 6
			CO2 Equivalent	See additional notes:		See Application Section 6
			MSS	Minimizing the duration of these activities and operating the facility in accordance with best management practices and good air pollution control practices	Yes	
New/Modified	HOC-PP-CT	Cooling Tower	PM	The emission reduction techniques for PM10 and PM2.5 will follow the technique for PM. Drift < 0.001% achieved by drift eliminators	Yes	See Application Section 6
			VOC	Non-contact design. Monthly monitoring of VOC in water per Appendix P or approved equivalent (assume all VOC stripped out). Repair identified leaks as soon as possible, but before next scheduled shutdown, or shutdown triggered by 0.08 ppmw cooling water VOC concentration.	Yes	See Application Section 6
			MSS	Same as normal operation BACT requirements.	Yes	
New/Modified	XX-01	Control: Adsorption System: Disposable	VOC	Minimum of two carbon canisters in series; continuous emissions monitor (CEM) and recorder before the last canister, but periodic monitoring before the last canister may be acceptable for single compound or low use rate systems. Breakthrough concentration 20-100 ppm based on vendor representations for specific compounds.	Yes	See Application Section 6

Action Requested	FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
			MSS	Same as normal operation BACT requirements.	Yes	
New/Modified	MEROX	Process Vent	VOC	Non-halogenated VOCs: flare, any oxidizer, adsorber, absorber/scrubber, etc. Specify technique. Must meet that control device's approved efficiency. Halogenated VOC: Thermal oxidation followed by absorber/scrubber carbon adsorption. Specify technique. Must meet that control device's approved efficiency.	Yes	See Application Section 6
			SO2	See Additional Notes:	Yes	See Application Section 6
			H2S	See Additional Notes:	Yes	See Application Section 6
			MSS	Same as normal operation BACT requirements.	Yes	
New/Modified	SHU2-FUG	Fugitives: Piping and Equipment Leak	VOC	Specify which is applicable: 1. Uncontrolled VOC emissions < 10 tpy: none 2. 10 tpy < uncontrolled VOC emissions < 25 tpy: 28M leak detection and repair program. 75% credit for 28M. 3. Uncontrolled VOC emissions > 25 tpy: 28VHP leak detection and repair program. 97% credit for valves, 85% for pumps and compressors. 4. VOC vp < 0.002 psia: no inspection required, no fugitive emissions expected. For emissions of approved odorous compounds (chlorine, ammonia, hydrogen sulfide, hydrogen cyanide and mercaptans only): AVO inspection twice per shift. Appropriate credit for AVO program.	Yes	See Application Section 6
			MSS	Same as normal operation BACT requirements.	Yes	
New/Modified	LPG-FUG	Fugitives: Piping and Equipment Leak	VOC	Specify which is applicable: 1. Uncontrolled VOC emissions < 10 tpy: none 2. 10 tpy < uncontrolled VOC emissions < 25 tpy: 28M leak detection and repair program. 75% credit for 28M. 3. Uncontrolled VOC emissions > 25 tpy: 28VHP leak detection and repair program. 97% credit for valves, 85% for pumps and compressors. 4. VOC vp < 0.002 psia: no inspection required, no fugitive emissions expected. For emissions of approved odorous compounds (chlorine, ammonia, hydrogen sulfide, hydrogen cyanide and mercaptans only): AVO inspection twice per shift. Appropriate credit for AVO program.	Yes	See Application Section 6

Date: _April 19, 2022_
Permit #: _38754_
Company: _Valero Refining - Texas, L.P._

Texas Commission on Environmental Quality
Form PI-1 General Application
BACT

Action Requested	FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
			MSS	Same as normal operation BACT requirements.	YEs	
New/Modified	30B05F	Fugitives: Piping and Equipment Leak	VOC	Specify which is applicable: 1. Uncontrolled VOC emissions < 10 tpy: none 2. 10 tpy < uncontrolled VOC emissions < 25 tpy: 28M leak detection and repair program. 75% credit for 28M. 3. Uncontrolled VOC emissions > 25 tpy: 28VHP leak detection and repair program. 97% credit for valves, 85% for pumps and compressors. 4. VOC vp < 0.002 psia: no inspection required, no fugitive emissions expected. For emissions of approved odorous compounds (chlorine, ammonia, hydrogen sulfide, hydrogen cyanide and mercaptans only): AVO inspection twice per shift. Appropriate credit for AVO program.	Yes	See Application Section 6
			MSS	Same as normal operation BACT requirements.	Yes	

Texas Commission on Environmental Quality
Form PI-1 General Application
Monitoring

Date: April 19, 2022
Permit #: 38754
Company: Valero Refining - Texas, L.P.

FIN	Unit Type	Pollutant	Minimum Monitoring Requirements	Confirm	Additional Notes for Monitoring	Proposed Measurement Technique (only complete for pollutants with a project increase above the PSD threshold)	Additional Notes for Measuring:
Various	MSS Activities	CO	Requirement dependent on application representation. Vapor concentration measurement prior to opening to atmosphere may be required and/or emission potential may be recalculated. Each measurement and/or number of events monthly must be monitored. Must monitor open ended lines for leaks if open more than 72 hours without cap, blind flange or plug. Where add on control is used for purge, monitoring consistent with device used and flow and firing rates monitored or potential calculated.	Yes		Record keeping	
		H2S	See Additional Notes:	Yes	There is no change to existing MSS emission limits for this project	Record keeping	
		NH3	See Additional Notes:	Yes	There is no change to existing MSS emission limits for this project	Record keeping	
		NOx	Where add on control is used for purge, monitoring consistent with device used and flow and firing rates monitored or potential calculated.	Yes		Record keeping	
		PM	The emission monitoring techniques for PM10 and PM2.5 will follow the technique for PM. Blasting material and usage. Paint spray type and usage. Combustion firing rates. Differential pressure across PM control devices.	Yes		Record keeping	
		SO2	Where add on control is used for purge, monitoring consistent with device used and flow and firing rates monitored or potential calculated.	Yes		Record keeping	
		VOC	Requirement dependent on application representation. Vapor concentration measurement prior to opening to atmosphere may be required and/or emission potential may be recalculated. Each measurement and/or number of events monthly must be monitored. Must monitor open ended lines for leaks if open more than 72 hours without cap, blind flange or plug. Where add on control is used for purge, monitoring consistent with device used and flow and firing rates monitored or potential calculated.	Yes		Record keeping	
		Exempt Solvents	See Additional Notes:	Yes	There is no change to existing MSS emission limits for this project	Record keeping	
HOC-FUG	Fugitives: Piping and Equipment Leak	H2S	Look for leaks twice per shift using audio, visual or olfactory (AVO) senses to observe leaks. Record results and corrective action taken.	Yes		Record keeping	
		VOC	Use EPA Method 21 to monitor for leaks from seals on pumps, compressors, agitator and valve seals on piping components in light liquid and gas VOC service quarterly. Gas or hydraulic check new and a replaced connectors prior to returning to service, or monitor with Method 21 within 15 days of returning to service. Leak detection and repair (LDAR) Program 28M has a leak definition where repair action is required at 10,000 ppmv. LDAR Program 28 VHP has a leak definition where repair action is required at 500 ppmv for valves and connectors and 2000 ppmv for pumps, compressors and agitators. Check connectors weekly using audio, visual or olfactory (AVO) senses to observe leaks. Record results and corrective action taken.	Yes		Record keeping	
SWS-FUG	Fugitives: Piping and Equipment Leak	H2S	Look for leaks twice per shift using audio, visual or olfactory (AVO) senses to observe leaks. Record results and corrective action taken.	Yes		Record keeping	
		VOC	Use EPA Method 21 to monitor for leaks from seals on pumps, compressors, agitator and valve seals on piping components in light liquid and gas VOC service quarterly. Gas or hydraulic check new and a replaced connectors prior to returning to service, or monitor with Method 21 within 15 days of returning to service. Leak detection and repair (LDAR) Program 28M has a leak definition where repair action is required at 10,000 ppmv. LDAR Program 28 VHP has a leak definition where repair action is required at 500 ppmv for valves and connectors and 2000 ppmv for pumps, compressors and agitators. Check connectors weekly using audio, visual or olfactory (AVO) senses to observe leaks. Record results and corrective action taken.	Yes		Record keeping	

24-ST-01	Fluid Catalytic Cracking Unit	CO	CEMS for CO and O2, Flow monitoring or calculation	Yes		CEMS	
		HCN	See additional notes:	Yes	Emission factor used for permit limit apllied to actual calculated coke burn rate.	COMS	Calculated coke burn calculated using Equation 6 from 40 CFR § 60.104a(d)(4)(iii)
		H2SO4	CEMS for SO2 and O2, Flow monitoring or calculation	Yes	Emission factor used for permit limit apllied to actual calculated coke burn rate.	COMS	Calculated coke burn calculated using Equation 6 from 40 CFR § 60.104a(d)(4)(iii)
		NH3	See Additional Notes:	Yes	Emission factor used for permit limit apllied to actual calculated coke burn rate.	COMS	Calculated coke burn calculated using Equation 6 from 40 CFR § 60.104a(d)(4)(iii)
		NOx	CEMS for NOx and O2, Flow monitoring or calculation	Yes		CEMS	
		PM	The emission monitoring techniques for PM10 and PM2.5 will follow the technique for PM. Continuous Opacity Monitor, or differential pressure across wet scrubber with daily opacity readings	Yes	Emission factor used for permit limit apllied to actual calculated coke burn rate.	COMS	Calculated coke burn calculated using Equation 6 from 40 CFR § 60.104a(d)(4)(iii)
		SO2	CEMS for SO2 and O2, Flow monitoring or calculation	Yes		CEMS	
		VOC	CPMS for Coke Burn, CEMS for CO and O2	Yes		CEMS	
		H2S	CEMS for SO2 and O2, Flow monitoring or calculation	No	Not Applicable. Emission Rates are less than 0.01 lb/hr and tpy	Record keeping	
		CO2	See additional notes:	Yes	CO2 , CO, and O2 CEMS used along with Equation Y-6 and Y-7a from 40 CFR Part 98 Subpart Y are used to calcute CO2 emissions.	CEMS	
		CH4	See additional notes:	Yes	Calculated using Equation Y-9 from 40 CFR Part 98 Subpart Y.	CEMS	
		N2O	See additional notes:	Yes	Calculated using Equation Y-10 from 40 CFR Part 98 Subpart Y.	CEMS	
		CO2 Equivalent	See additional notes:		Calucated using method described in 40 CFR Part 98.		
30-B-05	Boiler: Liquid and Gas Fuel, > 40 MMBtu/hr	CO	totalizing fuel flow meter record monthly fuel analysis for heating value every six month visible emission/opacity observations >100 MMBtu/hr: continuous flow meter average hourly, CO and O2 CEMS	Yes		CEMS	
		NH3	SCR and NSCR: ammonia CEMS or NOx monitor across the catalyst continuous flow meter average hourly, O2 CEMS	Yes		CEMS	
		NOx	totalizing fuel flow meter record monthly fuel analysis for heating value every six month CEMS. Data collected four times per hour and averaged hourly. >100 MMBtu/hr: continuous flow meter average hourly, NOx and O2 CEMS	Yes		CEMS	
		PM	The emission monitoring techniques for PM10 and PM2.5 will follow the technique for PM. totalizing fuel flow meter record monthly, fuel analysis for heating value every six month, visible emission/opacity observations daily for major sources and quarterly for minor sources. >100 MMBtu/hr: continuous flow meter average hourly, CO and O2 CEMS	Yes		Other:	CEMS and COMS
		SO2	totalizing fuel flow meter record monthly fuel analysis for heating value and total sulfur every six month visible emission/opacity observations Refinery: Continuous H2S monitoring of fuel gas	Yes		COMS	
		VOC	totalizing fuel flow meter record monthly fuel analysis for heating value every six month CEMS. Data collected four times per hour and averaged hourly. >100 MMBtu/hr: continuous flow meter average hourly, CO and O2 CEMS	Yes		COMS	
		H2S	totalizing fuel flow meter record monthly fuel analysis for heating value and total sulfur every six month Refinery: Continuous H2S monitoring of fuel gas	No	Not Applicable. Emission Rates are less than 0.01 lb/hr and tpy	Record keeping	
		CO2	See additional notes:	Yes	Monthly thermal efficiency calculation	COMS	
		CH4	See additional notes:	Yes	Monthly thermal efficiency calculation	COMS	
		N2O	See additional notes:	Yes	Monthly thermal efficiency calculation	COMS	
		CO2 Equivalent	See additional notes:	Yes	Monthly thermal efficiency calculation		

HOC-PP-CT	Cooling Tower	PM	The emission monitoring techniques for PM10 and PM2.5 will follow the technique for PM. Cooling water circulation rate measured hourly unless maximum circulation rate assumed. Large (>50,000 gpm circulation rate): Total Dissolved Solids (TDS) in the cooling water daily then reduced to weekly and quarterly with daily conductivity measurement that is correlated. Small (<50,000 gpm circulation rate): Total Dissolved Solids (TDS) in the cooling water measured weekly.	Yes		Record keeping	
		VOC	VOC concentration in the cooling water by TCEQ stripping method or approved equivalent monthly. Cooling water circulation rate measured hourly unless maximum circulation rate assumed.	Yes		Record keeping	
XX-01	Control: Adsorption System: Disposable	VOC	VOC concentration measured at a frequency equivalent to between 20 and 30 percent of the minimum potential saturation time. Visual inspection for carbon build up around the stack weekly.	Yes		Record keeping	
MEROX	Process Vent	VOC	Production rate or flow as appropriate Monitoring consistent with Control Device	Yes		Record keeping	
		SO2	See Additional Notes:	Yes	Same as VOC	Record keeping	
		H2S	See Additional Notes:	Yes	Same as VOC	Record keeping	
SHU2-FUG	Fugitives: Piping and Equipment Leak	VOC	Use EPA Method 21 to monitor for leaks from seals on pumps, compressors, agitator and valve seals on piping components in light liquid and gas VOC service quarterly. Gas or hydraulic check new and a replaced connectors prior to returning to service, or monitor with Method 21 within 15 days of returning to service. Leak detection and repair (LDAR) Program 28M has a leak definition where repair action is required at 10,000 ppmv. LDAR Program 28 VHP has a leak definition where repair action is required at 500 ppmv for valves and connectors and 2000 ppmv for pumps, compressors and agitators. Check connectors weekly using audio, visual or olfactory (AVO) senses to observe leaks. Record results and corrective action taken.	Yes		Record keeping	

LPG-FUG	Fugitives: Piping and Equipment Leak	VOC	Use EPA Method 21 to monitor for leaks from seals on pumps, compressors, agitator and valve seals on piping components in light liquid and gas VOC service quarterly. Gas or hydraulic check new and a replaced connectors prior to returning to service, or monitor with Method 21 within 15 days of returning to service. Leak detection and repair (LDAR) Program 28M has a leak definition where repair action is required at 10,000 ppmv. LDAR Program 28 VHP has a leak definition where repair action is required at 500 ppmv for valves and connectors and 2000 ppmv for pumps, compressors and agitators. Check connectors weekly using audio, visual or olfactory (AVO) senses to observe leaks. Record results and corrective action taken.	Yes		Record keeping	
30B05F	Fugitives: Piping and Equipment Leak	VOC	Use EPA Method 21 to monitor for leaks from seals on pumps, compressors, agitator and valve seals on piping components in light liquid and gas VOC service quarterly. Gas or hydraulic check new and a replaced connectors prior to returning to service, or monitor with Method 21 within 15 days of returning to service. Leak detection and repair (LDAR) Program 28M has a leak definition where repair action is required at 10,000 ppmv. LDAR Program 28 VHP has a leak definition where repair action is required at 500 ppmv for valves and connectors and 2000 ppmv for pumps, compressors and agitators. Check connectors weekly using audio, visual or olfactory (AVO) senses to observe leaks. Record results and corrective action taken.	Yes		Record keeping	

Texas Commission on Environmental Quality
Form PI-1 General Application
Materials

Date: April 19, 2022
Permit #: 38754
Company: Valero Refining - Texas, L.P.

Item	How submitted	Date submitted
A. Administrative Information		
Form PI-1 General Application	STEERS	09/30/2021
Hard copy of the General sheet with original (ink) signature	Not applicable	
Professional Engineer Seal	STEERS	09/30/2021
B. General Information		
Copy of current permit (both Special Conditions and MAERT)		
Core Data Form	Not applicable	
Area map	STEERS	09/30/2021
Plot plan	STEERS	09/30/2021
Process description	STEERS	09/30/2021
Process flow diagram	STEERS	09/30/2021
List of MSS activities	STEERS	09/30/2021
State regulatory requirements discussion	STEERS	09/30/2021
C. Federal Applicability		
Summary and project emission increase determination - Tables 1F and 2F	STEERS	09/30/2021
Netting analysis (if required) - Tables 3F and 4F as needed	STEERS	09/30/2021
D. Technical Information		
BACT discussion, if additional details are attached	STEERS	09/30/2021
Monitoring information, if additional details are attached	STEERS	09/30/2021
Material Balance (if applicable)	STEERS	09/30/2021
Calculations	STEERS	09/30/2021
E. Impacts Analysis		
Qualitative impacts analysis		
MERA analysis	Not applicable	
EMEW: SCREEN3	Not applicable	
EMEW: NonSCREEN3	STEERS	09/30/2021
PSD modeling protocol	STEERS	09/30/2021
F. Additional Attachments		

Texas Commission on Environmental Quality
Form PI-1 General Application Summary

Date: April 19, 2022
Permit #: 38754
Company: Valero Refining - Texas, L.P.

Project Summary

This sheet is a summary of representations made in this PI-1. No additional information is required by the applicant.

Project Description

Valero plans to undertake changes to the West Plant Heavy Oil Cracker (HOC), a fluidized catalytic cracking (FCC) unit. Due to the integrated nature of refinery operations, the project ("HOC Reconfiguration Project") will necessitate construction of a new utility boiler, a new cooling tower, and a new Gas Plant.

Contact Data

Company	Valero Refining - Texas, L.P.
Responsible official	Mr. Joe Almaraz
Phone	361-289-3328
Email	Joe.Almaraz@valero.com
Technical contact	Ms. Meagan Marquard
Phone	361-299-8913
Email	Meagan.Marquard@valero.com

Permit and Action Type Requested

Permit Type	**Action Type**	**Permit Number**
Minor NSR	Amendment	38754
Special Permit	Not applicable	
De Minimis	Not applicable	
Flexible	Not applicable	
PSD	Major Modification	PSDTX324M14
Nonattainment	Not applicable	
HAP Major Source [FCAA § 112(g)]	Not applicable	
PAL	Not applicable	
GHG PSD	Initial	TBD

Fees

Non-Renewal fee	$75,000.00
Renewal fee	
Total Fee	$75,000.00

Miscellaneous

TCEQ Region	Region 14
RN	RN100214386
CN	CN600127468
Title V site?	Yes
Industry group	Chemical / Energy
Public notice required?	Yes

Air Pollutant Watch List

Is this facility located in an APWL area AND this application includes that pollutant?	No
APWL pollutants	

Disaster Review

Any air contaminants for which a disaster review is required?	No
Disaster review pollutants	

Application contains **confidential** information?	No

Project Timing

Projected Start of Construction	10/1/2022
Projected Start of Operation	1/1/2024

Project Emission Summary (tpy)

Pollutant	**Current (tpy)**	**Consolidated Emissions (tpy)**	**Proposed (tpy)**	**Project Change in Allowable (tpy)**
VOC	1068.64	0.00	1122.72	54.08
PM	833.18	0.00	842.02	8.84
PM_{10}	828.09	0.00	836.95	8.86
$PM_{2.5}$	757.51	0.00	807.81	50.30
NO_x	1617.73	0.00	1654.85	37.12
CO	3019.83	0.00	3220.23	200.40
SO_2	1557.56	0.00	1614.22	56.66
Pb	0.00	0.00	0.00	0.00
H2S	21.72	0.00	21.79	0.07
NH3	29.06	0.00	37.80	8.74
Exempt Solvents	0.60	0.00	0.60	0.00
HF	2.30	0.00	2.30	0.00
Cl2	0.04	0.00	0.04	0.00
H2SO4	214.63	0.00	199.31	-15.32
HCl	0.57	0.00	0.57	0.00
HCN	320.40	0.00	320.40	0.00
CO2	0.00	0.00	2674037.00	2674037.00
CH4	0.00	0.00	79.86	79.86
N2O	0.00	0.00	14.84	14.84
CO2 Equivalent	0.00	0.00	2680456.00	2680456.00

Federal Applicability

County	Nueces
County classification (as of 9/23/2019)	attainment or unclassified for all pollutants
Ozone classification requested for this project	attainment or unclassified for all pollutants
Pollutants requiring PSD review	CO, NOx, PM, PM10, PM2.5, SO2, Ozone (as VOC),
Pollutants requiring NA review	

Impacts

No impacts required	HF, Cl2, HCl, HCN,
Qualitative analysis	
MERA analysis	VOC,
Modeling	VOC, H2S, NH3,
PSD Protocol	Ozone, CO, NOx, PM, PM10, PM2.5, SO2, Exempt Sol

Special Conditions

Permit Numbers 38754 and PSDTX324M14

1. This permit authorizes emissions only from those points listed in the attached table entitled "Emission Sources - Emission Caps and Individual Emissions Limitations," and the facilities covered by this permit are authorized to emit subject to the emission rate limits on that table and other operating requirements specified in the special conditions.

Throughput Limitations

2. Tank truck loading operations are limited to the following liquids and maximum loading rates: **(12/19)**

Chemical	Hourly Rate (gal/hr)
Kerosene	30,000
Diesel	60,000
Gasoline	98,000
Residual Oils	31,920

3. Marine loading shall comply with the following:

A. Marine loading with emissions that are controlled with the marine vapor recovery unit (VRU) shall be limited to a maximum of 35,000 bbl/hr. The liquids that are loaded at this rate and controlled with the VRU at this facility are limited to gasoline, natural gasoline, naphtha, cat gasoline, alkylate, and reformate.

The BT concentrate, mixed xylenes, heartcut, and toluene concentrate may also be loaded into marine vessels with emissions controlled by the VRU, at a rate not to exceed 5,000 bbl/hr. Only one of these products may be loaded at a time.

B. Marine loading with uncontrolled vapor emissions shall be limited to the following services at the indicated rates:

Liquid	Barge bbl/hr	Ship bbl/hr
Diesel*	8,500	12,500
Kerosene*	5,000	12,500
Gas Oil	6,000	20,000
ATB	6,000	20,000
VTB	6,000	20,000
Slurry	6,000	0
Bunker	6,000	20,000

*Diesel and kerosene shall not be loaded onto ships and barges concurrently.

Loading Controls

4. Operation without visible liquid leaks or spills shall be maintained at all loading or unloading facilities regardless of vapor pressure. This does not apply to momentary dripping associated with the initial connection or disconnection of fittings. Sustained dripping from fittings during loading or unloading operations is not permitted. Any liquid spill that occurs during loading or unloading activities shall be cleaned up immediately to minimize air emissions.

5. Emissions resulting from the tank truck loading of gasoline shall be routed to the Vapor Combustor (Emission Point No. [EPN] TRUCKCOMB) for final abatement. The volatile organic compounds (VOC) emissions from EPN TRUCKCOMB shall not exceed 10 milligrams per liter of gasoline loaded. The vapor combustor combustion temperature shall be maintained at or above 1400˚F (based on a five-minute averaging period) when loading vapors are routed to it. This temperature shall be recorded during loading operations and the records maintained on-site. The vapor combustor operating temperature may be lowered if it has been tested at the lower temperature in accordance with Special Condition (SC) No. 39 to demonstrate compliance with this emission limit. Records associated with this permit condition shall be kept for at least five years. The Vapor Combustion Unit (EPN TRUCKCOMB) shall comply with the following. **(12/19)**

   A. The vapor combustor shall be operated with no visible emissions and have a constant pilot flame during all times waste gas could be directed to it. The temperature of the combustion chamber shall be continuously monitored when loading vapors are routed to it. The time, date, and duration of any drop of temperature below 1400°F shall be recorded. Each monitoring device shall be accurate to, and shall be calibrated or have a calibration check performed at a frequency in accordance with, the manufacturer's specifications.

   B. Pilot and make-up fuel for the vapor combustor shall be pipeline-quality, sweet natural gas containing no more than 5 grains of total sulfur per 100 dry standard cubic feet.

   C. The control device shall not have a bypass. If there is a bypass for the control device, comply with either of the following requirements:

      (1) Install a flow indicator that records and verifies zero flow at least once every fifteen minutes immediately downstream of each valve that if opened would allow a vent stream to bypass the control device and be emitted, either directly or indirectly, to the atmosphere; or

      (2) Once a month, inspect the valves, verifying that the position of the valves and the condition of the car seals prevent flow out the bypass.

      A bypass does not include authorized analyzer vents, highpoint bleeder vents, low point drains, or rupture discs upstream of pressure relief valves if the pressure between the disc and relief valve is monitored and recorded at least weekly. A deviation shall be reported if the monitoring or inspections indicate bypass of the control device when it is required to be in service.

6. All tank trucks loading gasoline at this facility shall be leak-tight tested a minimum of once a year using the method described in the U.S. Environmental Protection Agency (EPA) regulations in Title 40 Code of Federal Regulations Part 63 (40 CFR Part 63), Subparts A and R, National Emission Standards for Gasoline Distribution Facilities (Bulk Gasoline Terminals and Pipeline Breakout Stations). **(12/19)**

7. All tank truck loading of residual oils, kerosene and diesel shall be conducted using a submerged fill pipe or using a discharge point no higher than 6 in. above the bottom of the cargo tank. **(12/19)**

8. The marine VRU shall limit VOC emissions from EPN VRU to 5 mg/l of liquid loaded.

9. All marine loading emissions of liquids with vapor pressures greater than 0.5 pound per square inch, absolute (psia) must be vented to the VRU.

10. A vacuum of at least one-inch water column shall be established downstream of the dock pressure control valve prior to commencing marine loading. A vacuum shall also be established on the barge or ship being loaded if possible. The vacuum shall be maintained during loading and monitored continually or an alarm activated if the vacuum is not maintained.

11. The VRU VOC concentration as measured by the continuous emission monitor specified in SC No. 40 shall not exceed 7,621 parts per million (ppm) over any one-hour period while the marine loading emissions are being vented. If the reading exceeds this limit, marine loading shall be secured, the Texas Commission on Environmental Quality (TCEQ) Corpus Christi Regional Office notified, and the cause determined and corrected before loading resumes.

Combustion Controls

12. Flares shall be designed and operated in accordance with the following requirements: **(01/21)**

A. The flare system(s) shall be designed such that the combined vent gas, assist air, and/or total steam to each flare meets the 40 CFR § 63.670 specifications for minimum combustion zone net heating value and maximum tip velocity at all times that emissions may be directed to the flare for more than 15 minutes. Flared gas actual exit velocity, vent gas net heating value, and flared gas combustion zone net heating value shall be determined in accordance with 40 CFR §63.670(k), §63.670(l), and §63.670(m) on a 15-minute block average and recorded at least once every 15 minutes.

If the flare actively receives perimeter assist air, it shall be operated to meet the 40 CFR §63.670 specifications for minimum net heating value dilution parameters. .

B. The flare(s) shall be operated with pilot flame(s) present at all times vent gas may be directed to the flare(s). The pilot flame(s) shall be continuously monitored by a thermocouple, infrared monitor, or ultraviolet monitor. The time, date, and duration of any loss of pilot flame shall be recorded. Each monitoring device shall be accurate to, and shall be calibrated at a frequency in accordance with, the manufacturer's specifications.

C. Flares shall be operated with no visible emissions except periods not to exceed a total of five minutes during any two consecutive hours, demonstrated and recorded per the requirements of §63.670(h).

D. The permit holder shall install flow monitors that continuously measure, calculate and record the total volumetric vent stream flow rate (including waste gas, purge gas, supplemental gas, and sweep gas), and shall install a monitoring system capable of determining the concentration of individual components in the flare vent gas or the net heating value of the flare vent gas. The flow monitor sensor and analyzer sample points shall be installed in the vent stream such that the total vent stream to the flare is measured and analyzed.

If one or more gas streams that combine to comprise the total flare vent gas flow are monitored separately for net heating value and flow, the 15-minute block average net heating value shall be determined separately for each measurement location and a flow-weighted average of the gas stream net heating values shall be used to determine the 15-minute block average net heating value of the cumulative flare vent gas.

If assist air or assist steam is used, the owner or operator shall install, operate, calibrate, and maintain a monitoring system capable of continuously measuring, calculating, and recording the total volumetric flow rate of assist air and/or assist steam used with the flare.

If pre-mix assist air and/or perimeter assist are used, the owner or operator shall install, operate, calibrate, and maintain a monitoring system capable of separately measuring, calculating, and recording the volumetric flow rate of premix assist air and/or perimeter assist air used with the flare. Continuously monitoring fan speed or power and using fan curves is an acceptable method for continuously monitoring assist air flow rates.

Perimeter assist air includes all air assist except premix assist air. Premix assist air includes any air intentionally entrained in center steam.

Assist air includes premix assist air and perimeter assist air, but does not include the surrounding ambient air.

The monitors shall be calibrated or have a calibration check performed as specified in Table 13 of the appendix to 40 CFR 63, Part CC to meet the following accuracy specifications: the vent flow monitor shall be ±20 percent of flow rate at velocities ranging from 0.03 to 0.3 meters per second (0.1 to 1 feet per second) ±5 percent of flow rate at velocities greater than 0.3 meters per second (1 feet per second), all other gas flow monitors shall be ±5 percent over the normal range of flow measured or 280 liters per minute (10 cubic feet per minute) whichever is greater, temperature monitor shall be ±1 percent over the normal range of temperature measured, expressed in degrees Celsius (C), or 2.8 degrees C, whichever is greater, and pressure monitor shall be ±5 percent over the normal operating range or 0.12 kilopascals (0.5 inches of water column), whichever is greater. For purposes of this permit, a calibration check means, at a minimum, using a second device or method to verify that the monitor is accurate as specified in the permit.

Calorimeters shall have an accuracy of at least ±2% of span and be calibrated, installed, operated, and maintained in accordance with manufacturer recommendations and as specified in Table 13 of the appendix to 40 CFR 63, Part CC, to continuously measure and record the net heating value of the vent gas sent to the flare, in British thermal units/standard cubic foot of the gas.

For determination of net heating value by gas chromatograph, the minimum accuracy shall be as specified in Performance Specification 9 of Part 60, appendix B. Composition monitoring instruments shall be calibrated, installed, operated, and maintained in accordance with manufacturer recommendations and as specified in 40 CFR §63.671(e) and Table 13 of 40 CFR Pt. 63, Subpart CC. Individual component properties specified in Table 12 of Subpart CC shall apply to net heating value calculations.

E. Quality assured (or valid) data must be generated during periods that flare is operating. Loss of valid data due to periods of monitor break down, out-of-control operation (producing inaccurate data), repair, maintenance, or calibration may be exempted provided it does not exceed 5 percent of the time (in minutes) that the flare operated over the previous rolling 12-month period. The measurements missed shall be estimated using engineering judgment and the methods used recorded.

F. Hourly mass emission rates shall be determined and recorded using the monitoring data collected pursuant to paragraph D of this Special Condition and the emission factors specified in the permit application PI-1 dated March 31, 2011.

G. The Acid Gas Flare (EPN 135) is not authorized for routine emissions or for planned maintenance, startup, and shutdown (MSS) emissions.

13. The American Petroleum Institute (API) Separator Combustor shall achieve at least 98 percent destruction efficiency. The vapor combustor combustion temperature shall be maintained at or above 1600˚F (based on a five-minute averaging period) when the separator is in service. This temperature shall be recorded and the records maintained on-site. The vapor combustor operating temperature may be lowered if it has been tested at the lower temperature in accordance with SC No. 38 to demonstrate compliance with this emission limit. Records associated with this permit condition shall be kept for five years.

A back-up carbon adsorption system (CAS) is a means of control equivalent to the API Separator Combustor for compliance with the preceding paragraph of this special condition. When used as back-up control, the CAS shall meet the following requirements:

A. The CAS shall consist of 2 carbon canisters in series with adequate carbon supply for the emission control operation.

B. The CAS shall be sampled downstream on the first can and the concentration recorded at least once every hour of CAS run time to determine breakthrough of the VOC. The sampling frequency may be extended using either of the following methods:

(1) The CAS systems equipped with an upstream liquid scrubber may be sampled once every 12 hours of CAS run time to determine breakthrough.

(2) Sampling frequency may be extended to up to 30 percent of the minimum potential saturation time for a new can of carbon. The permit holder shall maintain records including the calculations performed to determine the minimum saturation time.

(3) The carbon sampling frequency may be extended to longer periods based on previous experience with carbon control of a MSS waste gas stream. The past experience must be with the same VOC, type of facility, and MSS activity. The basis for the sampling frequency shall be recorded. If breakthrough is monitored on the initial sample of the upstream can when the polishing can is put in place, a permit deviation shall be recorded.

C. The method of VOC sampling and analysis shall be by detector meeting the requirements of SC No. 52. **(02/18)**

D. Breakthrough is defined as the highest measured VOC or benzene concentration at or exceeding 100 ppmv or 5 ppmv, respectively, above background. When the condition of breakthrough of VOC from the initial saturation canister occurs, the waste gas flow shall be switched to the second canister and a fresh canister shall be placed as the new final polishing canister within twenty-four hours. In lieu of replacing canisters, the flow of waste gas may be discontinued until the canisters are switched. Sufficient new activated carbon canisters shall be available to replace spent carbon canisters such that replacements can be done in the above specified time frame.

E. Records of CAS monitoring shall include the following:

(1) Sample time and date.

(2) Monitoring results (ppmv).

(3) Canister replacement log.

F. Single canister systems are allowed if the time the carbon canister is in service is limited to no more than 30 percent of the minimum potential saturation time. The permit holder shall maintain records for these systems, including the calculations performed to determine the saturation time. The time limit on carbon canister service shall be recorded and the expiration date attached to the carbon can.

G. Liquid scrubbers may be used upstream of carbon canisters to enhance VOC capture provided such systems are closed systems and the spent absorbing solution is discharged into a closed container, vessel, or system.

14. No visible emissions are allowed from the heaters.

15. The permittee shall operate a continuous hydrogen sulfide (H_2S) monitoring instrument in the fuel feed line header for all fired units with a firing rate greater than 40 MMBtu/hr to continuously monitor a representative sample of fuel gas for H_2S content. The instrument shall be installed and operated according to the specifications set out in 40 CFR § 60.105. These gases shall have a maximum H_2S concentration of 0.054 grain per dry standard cubic foot (dscf) on an hourly average. The Vacuum Unit Heater (EPN 74) may also be fired with vacuum off-gas having a maximum H_2S concentration of 0.10 grain/dscf on an hourly average.

16. Heater, boiler, and reboiler emissions of ammonia (NH_3), carbon monoxide (CO), hydrogen sulfide (H_2S), nitrogen oxide (NO_x), Particulate matter (PM), PM ≤ 10 microns diameter (PM_{10}), PM ≤ 2.5 microns diameter ($PM_{2.5}$), and volatile organic compounds (VOC) shall meet the following specifications: **(01/21)**

EPN	Facility	NO_x 1-hr block average (lb/MMBtu)	NO_x 3-hr block average (lb/MMBtu)	NO_x daily 365 rolling average (lb/MMBtu)	NO_x Compliance Method
162	38-H-01/02/03	0.06	--	0.060	CEMS
1	Crude Heater	0.06	--	0.060	CEMS
74	Vacuum Unit Heater	0.06	0.060	--	stack test
150	47-H-01/02/03/04	0.06	0.060	--	stack test
152	49-H-01/02/03/04	0.07	--	0.070	CEMS
153	Boiler 30-B-02	--	--	0.080	CEMS
172	RSU Heater	0.06	0.060	--	stack test
49H90	C7 Splitter Reboiler	0.04	--	0.040	CEMS
114	Desalter Heater	0.040	0.040	--	stack test
115	12-H-01A/B	0.06	0.060	--	stack test
116	HDS Heavy Oil Preheater	0.12	--	--	
117	Alky Fract Reboiler	0.036	--	0.036	CEMS
118	13-H-01A/B/C	0.06	--	0.060	CEMS

EPN	Facility	NO_x 1-hr block average (lb/MMBtu)	NO_x 3-hr block average (lb/MMBtu)	NO_x daily 365 rolling average (lb/MMBtu)	NO_x Compliance Method
119	Sulften Heater	0.12	--	--	
120	Butamer Heater	0.12	--	--	
195	GD Charge Heater	0.035	--	0.035	CEMS
30-B-04	Boiler 30-B-04	0.015	--	0.015	CEMS

EPN	Facility	CO 1-hr block average
162	38-H-01/02/03	0.05 lb/MMBtu
1	Crude Heater	0.05 lb/MMBtu
74	Vacuum Unit Heater	0.05 lb/MMBtu
150	47-H-01/02/03/04	0.03 lb/MMBtu
152	49-H-01/02/03/04	0.03 lb/MMBtu
153	Boiler 30-B-02	--
172	RSU Heater	0.05 lb/MMBtu
49H90	C7 Splitter Reboiler	0.05 lb/MMBtu
114	Desalter Heater	0.037 lb/MMBtu
115	12-H-01A/B	0.05 lb/MMBtu
116	HDS Heavy Oil Preheater	0.016 lb/MMBtu
117	Alky Fract Reboiler	0.016 lb/MMBtu
118	13-H-01A/B/C	0.05 lb/MMBtu
119	Sulften Heater	0.016 lb/MMBtu
120	Butamer Heater	0.016 lb/MMBtu
195	GD Charge Heater	100 ppmv (3% O_2)
30-B-04	Boiler 30-B-04	50 ppmv (3% O_2)

EPN	Facility	VOC lb/MMBtu	PM/PM_{10} / $PM_{2.5}$ lb/MMBtu
30-B-04	Boiler 30-B-04	0.0053	0.0075
119	Sulften Heater	0.0053	0.0075

EPN	Facility	H_2S in fuel gas lb/MMBtu	NH_3 lb/MMBtu
30-B-04	Boiler 30-B-04	87 ppmv	10 ppmv
119	Sulften Heater	87 ppmv	10 ppmv

During reduced-load operations for heaters or boilers equipped with CO CEMS, the emission limitations in the above table for CO shall not apply. Reduced-load operation means the operation of a heater or boiler at a firing rate of no greater than 50% of the maximum rated heat duty of the heater or boiler and not during planned MSS. The time and duration of each of each heater or boiler non-routine operation shall be recorded. Additionally, during each non-routine operation the rates of CO shall be calculated from a boiler or heater's CEMS data to demonstrate that MAERT emission limits are not exceeded. Records shall be maintained at the plant site for a period of five years. **(date)**

17. Heaters and boilers are prohibited from burning or combusting fuel oil. For purposes of this paragraph, fuel oil is predominately in the liquid phase at the point of combustion with a sulfur content of greater than 0.05% by weight. **(08/16)**

18. Upon request by the Executive Director of the TCEQ, the EPA, or any local air pollution control program having jurisdiction, the holder of this permit shall provide a sample and/or an analysis of the fuel(s) utilized in these facilities or shall allow air pollution control agency representatives to obtain a sample for analysis.

19. The Desalter Heater (EPN 114) shall comply with the following: **(10/18)**

A. The desalter heater shall only be fired with natural gas and fuel gas and the firing rate shall not exceed 99 MMBtu/hr on an annual basis (12-month rolling period) and short term basis.

(a)

B. The natural gas and fuel gas shall be sampled every 6 months to determine the net heating value. Test results from the fuel supplier may be used to satisfy this requirement.

C. The permit holder shall install and operate a fuel flow meter to measure the gas fuel usage for the desalter heater. The monitored data shall be reduced to an hourly average flow rate at least once every day, using a minimum of four equally-spaced data points from each one-hour period. The monitoring device shall be calibrated at a frequency in accordance with the manufacturer's specifications or at least annually, whichever is more frequent, and shall be accurate to within 5 percent.

D. Quality assured (or valid) data must be generated when the desalter heater is operating. Loss of valid data due to periods of monitor break down, out-of-control operation (producing inaccurate data), repair, maintenance, or calibration may be exempted provided it does not exceed 5 percent of the time (in minutes) that the desalter heater operated over the previous rolling 12 month period. The measurements missed shall be estimated using engineering judgment and the methods used recorded.

Sulfur Recovery Units (SRUs) and HOC Scrubber

20. The coke burn-off non-sulfate particulate matter (PM) emissions may not exceed 0.57 pound per 1,000 pounds of coke burn-off. The HOC scrubber sulfuric acid mist (a subset of total PM) emissions shall not exceed 0.35 pound per 1,000 pounds of coke burn-off.

    Particulate emissions from the HOC shall not exceed one (1) pound per 1,000 pounds of coke burned (front half only according to Method 5B or 5F, as appropriate), measured as a one-hour average over three performance test runs. **(08/16)**

21. The pH of the HOC scrubber circulating caustic solution shall be continually monitored and be maintained at a level between 6.0 and 9.0 by the addition of fresh caustic solution as required. The pH shall be recorded at least hourly, and the records maintained at the plant site for a period of five years. These records shall be made available for inspection by the Executive Director of the TCEQ or his designated representative.

22. The minimum sulfur recovery efficiency for the SRU/Sulften and SRU/Scot shall be 99.8 percent. The sulfur recovery efficiency shall be determined by calculation as follows: **(01/21)**

    Efficiency = (S recovered)*(100) / (S acid gas)

    Where:

Efficiency	=	sulfur recovery efficiency, percent
S recovered	=	(S acid gas - S stack), pounds per hour (lb/hr)
S acid gas	=	sulfur in acid gas stream, lb/hr
S stack	=	sulfur in incinerator stack, lb/hr

    The sulfur recovery efficiency shall be demonstrated for each calendar day (24-hour period) by a mass balance calculation using data obtained from the incinerator stack sulfur dioxide monitor and sulfur production records. Records and copies of the compliance calculations shall be maintained.

23. Acid gas must be routed to a properly operating SRU train. All SRU trains shall normally be operated when acid gas is being produced to maintain the maximum redundant sulfur capacity. The TCEQ Regional Office shall be notified within 72 hours if any SRU train is not fully operational. The notification shall include a description of the problem, the estimated loss of capacity, actions required to correct the problem, and when the line is expected to be fully operational.

    In the event that the Sulften/Scot unit is not operating properly, immediate steps shall be taken to correct the improper operation and shift the acid gas feeds to another fully operational SRU.

24. The Scot tail gas incinerator shall be operated with no less than 3.0 percent oxygen (O_2) in the incinerator stack and at no less than 1500˚F incinerator firebox exit temperature. The incinerator shall achieve a minimum H_2S destruction efficiency of 99.9 percent or 5 parts per million by volume (ppmv) (corrected to 3 percent excess O_2) reduced sulfur compound exit concentration. If stack testing indicates that a higher temperature or O_2 concentration is necessary to obtain a minimum H_2S destruction efficiency of 99.9 percent or 5 ppmv (corrected to 3 percent excess O_2) reduced sulfur compound exit concentration, then the temperature and O_2 maintained during the stack test will become the new minimum operating limits. The O_2 and temperature requirements do not apply

when performing a stack test on the incinerator in accordance with SC No. 39. The permit holder may request that the operating limits be relaxed with a permit alteration request should stack testing indicate the required emissions control is obtained at the proposed limits.

25. In order to control opacity from the stack of EPN 121, the permittee shall maintain the liquid to the filtering modules at a pressure greater than 45 pounds per square inch (psi) and the flue gas pressure drop across the filtering modules and the cyclolabs at no less than 5 inches of water. Liquid pressure and pressure drop shall be continuously recorded and maintained at the plant site for a period of five years. These records shall be made available for inspection by the Executive Director of the TCEQ or his designated representative.

    The opacity of emissions from the Caustic Scrubber Stack (EPN 121) shall not exceed 20 percent averaged over a six-minute period as determined by a trained observer.

Control Requirements

26. The Oleflex and Naphtha Continuous Catalyst Regenerator (CCR) scrubber liquids shall be sampled at least twice daily (once per shift) for caustic inventory. The pH of the scrubbing liquids in the Oleflex CCR caustic scrubber shall be maintained at 8 pH units or greater. The caustic concentration of the Naphtha Reformer CCR shall be maintained greater than 0.41 weight percent sodium hydroxide (measured as total alkalinity). **(11/20)**

27. The caustic absorber circulation rate for the Naphtha CCR shall be a minimum of 368 gpm. The circulation rate shall be recorded at least hourly, and the records maintained at the plant site for a period of five years. These records shall be made available for inspection by the Executive Director of the TCEQ or his designated representative.

28. Storage tanks are subject to the following requirements. The control requirements specified in paragraphs A through D of this condition shall not apply (1) where the VOC has an aggregate partial pressure of less than 0.50 psia at the maximum feed temperature or 95˚F, whichever is greater, or (2) to storage tanks smaller than 25,000 gallons.

    A. An internal floating deck or roof or equivalent control shall be installed in all tanks. The floating roof shall be equipped with one of the following closure devices between the wall of the storage vessel and the edge of the internal floating roof: (1) a liquid-mounted seal, (2) two continuous seals mounted one above the other, or (3) a mechanical shoe seal.

    B. An open-top tank containing a floating roof (external floating roof tank) which uses double seal or secondary seal technology shall be an approved control alternative to an internal floating roof tank provided the primary seal consists of either a mechanical shoe seal or a liquid-mounted seal and the secondary seal is rim-mounted. A weathershield is not approvable as a secondary seal unless specifically reviewed and determined to be vapor-tight.

    C. For any tank equipped with a floating roof, the permit holder shall perform the visual inspections and seal gap measurements as specified in 40 CFR § 60.113b, Testing and Procedures (as amended at 54 FR 32973, Aug. 11, 1989), to verify fitting and seal integrity. Records shall be maintained of the dates seals were inspected and seal gap measurements made, results of inspections and measurements made (including raw data), and actions taken to correct any deficiencies noted.

D. The floating roof design shall incorporate sufficient flotation to conform to the requirements of API Code 650 dated November 1, 1998, except that an internal floating cover need not be designed to meet rainfall support requirements and the materials of construction may be steel or other materials.

E. Uninsulated tank exterior surfaces exposed to the sun shall be white or aluminum. Storage tanks must be equipped with permanent submerged fill pipes.

F. The permit holder shall maintain an emissions record which includes calculated emissions of VOC from all storage tanks during the previous calendar month and the past consecutive 12-month period. The record shall include tank identification number, control method used, tank capacity in barrels, name of the material stored, VOC molecular weight, VOC monthly average temperature in degrees Fahrenheit, VOC vapor pressure at the monthly average material temperature in psia, VOC throughput for the previous month and year-to-date. Records of VOC monthly average temperature are not required to be kept for unheated tanks which receive liquids that are at or below ambient temperatures.

Emissions for tanks shall be calculated using the TCEQ publication titled "Technical Guidance Package for Chemical Sources - Storage Tanks."

G. Floating roof tanks 23, 26, and 164 shall be equipped with a Pole Sleeve System or equivalent as required by the Storage Tank Emission Reduction Partnership Program (STERPP) Agreement with U.S. EPA, dated May 23, 2001, as listed in Appendix I and Annex A of that agreement. Storage Tank 164 was owned by the Valero Bill Greehey Refinery – West Plant at the time of STERPP Agreement execution and is currently owned by NuStar Energy LP (a non-affiliated company).

29. Non-fugitive emissions from relief valves, safety valves, or rupture discs of gases containing VOC at a concentration of greater than 1 percent are not authorized by this permit unless authorized on the maximum allowable rates table. Any releases directly to atmosphere from relief valves, safety valves, or rupture discs of gases containing VOC at a concentration greater than 1 weight percent are not consistent with good practice for minimizing emissions.

30. The cooling towers shall comply with the following requirements:

A. The cooling tower water shall be monitored monthly for VOC leakage from heat exchangers in accordance with the requirements of the TCEQ Sampling Procedures Manual, Appendix P (dated January 2003 or a later edition) or another air stripping method approved by the TCEQ Executive Director.

B. Cooling water VOC concentrations above 0.08 ppmw indicate faulty equipment. Equipment shall be maintained so as to minimize VOC emissions into the cooling water. Faulty equipment shall be repaired at the earliest opportunity but no later than the next scheduled shutdown of the process unit in which the leak occurs.

C. Emissions from the cooling tower are not authorized if the VOC concentration of the water returning to the cooling tower exceeds 0.80 ppmw. The VOC concentrations above 0.80 ppmw are not subject to extensions for delay of repair under this permit condition. The results of the monitoring and maintenance efforts shall be recorded.

D. Cooling water shall be sampled once a week for total dissolved solids (TDS) and once a day for conductivity. Dissolved solids in the cooling water drift are considered to be emitted as total particulate matter (PM) / PM equal to or less than 10 microns in diameter (PM_{10}) / PM equal to or less than 2.5 microns in diameter ($PM_{2.5}$). The data shall result from collection of water samples from the cooling tower feed water and represent the water being cooled in the tower. Water samples should be capped upon collection, and transferred to a laboratory area for analysis. The analysis method for TDS shall be EPA Method 160.1, ASTM D5907, and SM 2540 C [SM - 19th edition of Standard Methods for Examination of Water]. The analysis method for Conductivity shall be ASTM D1125-95A and SM2510 B. Use of an alternative method shall be approved by the TCEQ Regional Director prior to its implementation.

E.

Fugitive Emissions Control

31. Piping, Valves, Flanges, Pumps, and Compressors in VOC Service - Intensive Directed Maintenance - 28 VHP

Except as may be provided for in the special conditions of this permit, the following requirements apply to the above-referenced equipment.

A. These conditions shall not apply (1) where the VOC has an aggregate partial pressure or vapor pressure of less than 0.044 psia at 68˚F or (2) the operating pressure is at least 5 kilopascals (0.725 psi) below ambient pressure. Equipment excluded from this condition shall be identified in a list or by one of the methods described below to be made readily available upon request.

The exempted components may be identified by one or more of the following methods:

(1) piping and instrumentation diagram (PID);
(2) a written or electronic database or electronic file;
(3) color coding;
(4) a form of weatherproof identification; or
(5) designation of exempted process unit boundaries.

B. Construction of new and reworked piping, valves, pump systems, and compressor systems shall conform to applicable American National Standards Institute (ANSI), API, American Society of Mechanical Engineers (ASME), or equivalent codes.

C. New and reworked underground process pipelines shall contain no buried valves such that fugitive emission monitoring is rendered impractical. New and reworked buried connectors shall be welded.

D. To the extent that good engineering practice will permit, new and reworked valves and piping connections shall be so located to be reasonably accessible for leak-checking during plant operation. Difficult-to-monitor and unsafe-to-monitor valves, as defined by Title 30 Texas Administrative Code Chapter 115 (30 TAC Chapter 115), shall be identified in a list to be made readily available upon request. The difficult-to-monitor and unsafe-to-monitor valves may be identified by one or more of the methods described in subparagraph A above. If an unsafe-to-monitor component is not considered safe to monitor within a calendar year, then it shall be monitored as soon as possible during safe-to-monitor times. A difficult-to-monitor component for which quarterly monitoring is specified may instead be monitored annually.

E. New and reworked piping connections shall be welded or flanged. Screwed connections are permissible only on piping smaller than two-inch diameter. Gas or hydraulic testing of the new and reworked piping connections at no less than operating pressure shall be performed prior to returning the components to service or they shall be monitored for leaks using an approved gas analyzer within 15 days of the components being returned to service. Adjustments shall be made as necessary to obtain leak-free performance. Connectors shall be inspected by visual, audible, and/or olfactory means at least weekly by operating personnel walk-through.

Each open-ended valve or line shall be equipped with an appropriately sized cap, blind flange, plug, or a second valve to seal the line. Except during sampling, both valves shall be closed. If the removal of a component for repair or replacement results in an open ended line or valve, it is exempt from the requirement to install a cap, blind flange, plug, or second valve for 72 hours. If the repair or replacement is not completed within 72 hours, the permit holder must complete either of the following actions within that time period: the line or valve must have a cap, blind flange, plug, or second valve installed; or the permit holder shall verify that there is no leakage from the open-ended line or valve. The open-ended line or valve shall be monitored on a weekly basis in accordance with the applicable permit condition for fugitive emission monitoring, except that a leak is defined as any VOC reading greater than background. Leaks must be repaired within 24 hours or a cap, blind flange, plug, or second valve must be installed on the line or valve. The results of this weekly check and any corrective actions taken shall be recorded.

F. Accessible valves shall be monitored by leak-checking for fugitive emissions at least quarterly using an approved gas analyzer. Sealless/leakless valves (including, but not limited to, welded bonnet bellows and diaphragm valves) and relief valves equipped with a rupture disc upstream or venting to a control device are not required to be monitored. For valves equipped with rupture discs, a pressure-sensing device shall be installed between the relief valve and rupture disc to monitor disc integrity. All leaking discs shall be replaced at the earliest opportunity but no later than the next process shutdown.

A check of the reading of the pressure-sensing device to verify disc integrity shall be performed weekly and recorded in the unit log or equivalent. Pressure-sensing devices that are continuously monitored with alarms are exempt from recordkeeping requirements specified in this paragraph.

The gas analyzer shall conform to requirements listed in Method 21 of 40 CFR part 60, appendix A. The gas analyzer shall be calibrated with methane. In addition, the response factor of the instrument for a specific VOC of interest shall be determined and meet the requirements of Section 8 of Method 21. If a mixture of VOCs are being monitored, the response factor shall be calculated for the average composition of the process fluid. A calculated average is not required when all of the compounds in the mixture have a response factor less than 10 using methane. If a response factor less than 10 cannot be achieved using methane, then the instrument may be calibrated with one of the VOC to be measured or any other VOC so long as the instrument has a response factor of less than 10 for each of the VOC to be measured.

Replaced components shall be re-monitored within 15 days of being placed back into VOC service.

G. Except as may be provided for in the special conditions of this permit, all pump and compressor seals shall be monitored with an approved gas analyzer at least quarterly or be equipped with a shaft sealing system that prevents or detects emissions of VOC from the seal. Seal systems designed and operated to prevent emissions or seals equipped with an automatic seal failure detection and alarm system need not be monitored. These seal systems may include (but are not limited to) dual pump seals with barrier fluid at higher pressure than process pressure, seals degassing to vent control systems kept in good working order, or seals equipped with an automatic seal failure detection and alarm system. Submerged pumps or sealless pumps (including, but not limited to, diaphragm, canned, or magnetic-driven pumps) may be used to satisfy the requirements of this condition and need not be monitored.

H. Damaged or leaking valves or connectors found to be emitting VOC in excess of 500 ppmv or found by visual inspection to be leaking (e.g., dripping process fluids) shall be tagged and replaced or repaired. Damaged or leaking pump and compressor seals found to be emitting VOC in excess of 2,000 ppmv or found by visual inspection to be leaking (e.g., dripping process fluids) shall be tagged and replaced or repaired. A first attempt to repair the leak must be made within 5 days. Records of the first attempt to repair shall be maintained.

I. Every reasonable effort shall be made to repair a leaking component, as specified in this paragraph, within 15 days after the leak is found. If the repair of a component would require a unit shutdown that would create more emissions than the repair would eliminate, the repair may be delayed until the next scheduled shutdown. All leaking components which cannot be repaired until a scheduled shutdown shall be identified for such repair by tagging within 15 days of the detection of the leak. A listing of all components that qualify for delay of repair shall be maintained on a delay of repair list. The cumulative daily emissions from all components on the delay of repair list shall be estimated by multiplying by 24 the mass emission rate for each component calculated in accordance with the instructions in 30 TAC 115.782 (c)(1)(B)(i)(II). The calculations of the cumulative daily emissions from all components on the delay of repair list shall be updated within ten days of when the latest leaking component is added to the delay of repair list. When the cumulative daily emission rate of all components on the delay of repair list times the number of days until the next scheduled unit shutdown is equal to or exceeds the total emissions from a unit shutdown as calculated in accordance with 30 TAC 115.782 (c)(1)(B)(i)(I), the TCEQ Regional Manager and any local programs shall be notified and may require early unit shutdown or other appropriate action based on the number and severity of tagged leaks awaiting shutdown. This notification shall be made within 15 days of making this determination.

J. Records of repairs shall include date of repairs, repair results, justification for delay of repairs, and corrective actions taken for all components. Records of instrument monitoring shall indicate dates and times, test methods, and instrument readings. The instrument monitoring record shall include the time that monitoring took place for no less than 95% of the instrument readings recorded. Records of physical inspections shall be noted in the operator's log or equivalent.

K. Alternative monitoring frequency schedules of 30 TAC §§ 115.352 through 115.359 or National Emission Standards for Organic Hazardous Air Pollutants, 40 CFR Part 63, Subpart H, may be used in lieu of Items F through G of this condition.

Compliance with the requirements of this condition does not assure compliance with requirements of 30 TAC Chapter 115, an applicable New Source Performance Standards (NSPS), or an applicable National Emission Standard for Hazardous Air Pollutants (NESHAPS) and does not constitute approval of alternative standards for these regulations.

32. Pump and compressor seals shall be monitored for fugitive leakage monthly rather than quarterly as specified by SC No. 31. The leak definitions, recordkeeping, and corrective actions of those conditions still apply to these components.

33. In addition to the weekly physical inspection required by Item E of SC No. 31, all accessible valve connectors in gas or vapor and light liquid service shall be monitored quarterly with an approved gas analyzer in accordance with Items F through J of SC No. 31.

In lieu of the monitoring frequency specified in the above paragraph, connectors may be monitored on a semiannual basis if the percent of connectors leaking for two consecutive quarterly monitoring periods is less than 0.5 percent.

Connectors may be monitored on an annual basis if the percent of connectors leaking for two consecutive semiannual monitoring periods is less than 0.5 percent.

If the percent of connectors leaking for any semiannual or annual monitoring period is 0.5 percent or greater, the facility shall revert to quarterly monitoring until the facility again qualifies for the alternative monitoring schedules previously outlined in the paragraph.

The percent of connectors leaking used in paragraph B shall be determined using the following formula:

(Cl + Cs) x 100/Ct = Cp

Where:

Cl = the number of connectors found leaking by the end of the monitoring period, either by Method 21 or sight, sound, and smell.

Cs = the number of connectors for which repair has been delayed and are listed on the facility shutdown log.

Ct = the total number of connectors in the facility subject to the monitoring requirements, as of the last day of the monitoring period, not including nonaccessible and unsafe-to-monitor connectors.

Cp = the percentage of leaking connectors for the monitoring period.

34. Process Piping, Valves, Pumps, and Compressors in H_2S and Hydrogen Fluoride (HF) Service.

This condition shall apply to all process streams with greater than 2 weight percent H_2S and all process streams with greater than 0.5 weight percent HF.

A. Audio, olfactory, and visual checks for H_2S and HF leaks within the operating area shall be made once a shift. **(date)**

B. Immediately, but no later than one hour upon detection of a leak, plant personnel shall take the following actions:

(1) Isolate the leak.

(2) Commence repair or replacement of the leaking component.

(3) If immediate repair is not possible, a leak collection or containment system will be used to prevent or minimize the leak or the facility shall be shutdown in an orderly manner until repair or replacement can be made. Containment can include adjustment of bolts, fittings, packing glands, and pump or compressor seals to contain the leak.

Records shall be maintained of all inspections, leaks noted, repairs, and replacements made. These records shall be maintained at the plant site for a period of five years and shall be made immediately available at the request of TCEQ personnel.

Wastewater Collection and Treatment

35. The wastewater collection and treatment system shall comply with the requirements of this permit and with the requirements for wastewater systems in 40 CFR Part 60, Subparts A and QQQ,

except as described in the following sentence. Components for which construction, modification, or reconstruction has not commenced after May 4, 1987, in the process units that follow, shall comply with the requirements of this permit and with the requirements of applicable State regulations, but are exempt from 40 CFR Part 60, Subparts A and QQQ.

Process Unit	
Heavy Oil Cracker	Vacuum Unit
HDS Unit	HF Alky Unit
SMR Unit	Boilerhouse
Crude Unit	SWS/Amine
SRU/Sulften	Tank Farm

36. The wastewater collection systems which are routed to a control device shall comply with the following requirements:

A. Process wastewater drains shall be equipped with water seals or equivalent. Lift stations, manholes, junction boxes, any other wastewater collection system components, conveyance, storage, and treatment system to the biological treatment unit shall be equipped with a closed vent system that routes all organic vapors to an API Separator Combustor or a back-up CAS.

B. Water seals shall be checked by visual or physical inspection quarterly for indications of low water levels or other conditions that would reduce the effectiveness of water seal controls. Water seals shall be restored as necessary within 24 hours. Records shall be maintained of these inspections and of corrective actions taken.

37. The daily wastewater flow into the wastewater treatment plant shall be monitored and recorded. The rolling 12-month wastewater flow shall be totaled on a monthly basis.

38. The minimum mixed liquor total suspended solids (MLSS) concentration in the aeration basins on a daily average basis shall not be less than 2000 mg/L. The MLSS concentration is the arithmetic average of all samples collected during the 24-hour period. The MLSS concentrations shall be monitored and recorded daily using Method 160.2 (Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020 or Method 2540D (Standard Methods of the Examination of Water and Wastewater, 18th Edition, American Public Health Association).

Compliance Testing

39. The permit holder shall perform stack sampling and other testing as required to establish the actual pattern and quantities of air contaminants being emitted into the atmosphere from all heaters and boilers with firing rates greater than 40 MMBtu/hr, Scot Tail Gas Incinerator (EPN 121 or 121a), Sulften Tail Gas Incinerator (EPN 121 or 121a), Caustic Scrubber (EPN 121), Marine Loading VRU (EPN VRU), and Vapor Combustors (EPNs TRUCKCOMB and 124), to demonstrate compliance with the maximum allowable emissions rate table (MAERT). Sampling shall be performed upstream and downstream of the SMR condensate stripper vent condenser to demonstrate compliance with SC No. 46. The permit holder is responsible for providing sampling and testing facilities and conducting the sampling and testing operations at his expense. Sampling shall be

conducted in accordance with the appropriate procedures of the TCEQ Sampling Procedures Manual and the U.S. Environmental Protection Agency (EPA) Reference Methods. **(02/18)**

Requests to waive testing for any pollutant specified in this condition shall be submitted to the TCEQ Office of Air, Air Permits Division. Test waivers and alternate/equivalent procedure proposals for40 CFR Part 60 testing which must have EPA approval shall be submitted to the TCEQ Regional Director.

A. The appropriate TCEQ Regional Office shall be notified not less than 30 days prior to sampling.

The notice shall include:

(1) Proposed date for pretest meeting.

(2) Date sampling will occur.

(3) Name of firm conducting sampling.

(4) Type of sampling equipment to be used.

(5) Method or procedure to be used in sampling.

(6) Description of any proposed deviation from the sampling procedures specified in this permit or TCEQ/EPA sampling procedures.

(7) Procedure/parameters to be used to determine worst case emissions, such as production rate, to set operating parameters and limits to be monitored during the sampling period.

The purpose of the pretest meeting is to review the necessary sampling and testing procedures, to provide the proper data forms for recording pertinent data, and to review the format procedures for the test reports.

B. Air contaminants to be tested from sources:

(1) Air contaminants emitted from the heaters and boilers to be tested for include (but are not limited to) NO_x and CO.

(2) Air contaminants emitted from the caustic scrubber to be tested for include (but are not limited to) sulfur dioxide (SO_2), NO_x, PM (both front and back-half of the sampling train), sulfuric acid, and CO. Stack testing of the Belco Scrubber (EPN 121) shall be accomplished by temporarily routing the Sulften and Scot Tail gas to EPN 121a. The sulfuric acid mist stack sample shall be performed using both TCEQ Method 24 and EPA Method 8. The lower of the two sampling results may be used to demonstrate compliance.

(3) Air contaminants emitted from the Sulften and Scot tail gas incinerators to be tested for include (but are not limited to) SO_2, NO_x, CO, PM (both front and back half of the sampling train), and total reduced sulfur.

(4) Air contaminants emitted from the vapor combustors to be tested for include (but are not limited to) VOC, NO_x, and CO.

(5) Air contaminants to be tested for the SMR condensate stripper vent condenser include methanol.

C. Requests for additional time to perform sampling shall be submitted to the TCEQ Corpus Christi Regional Office. Additional time to comply with the applicable requirements of 40 CFR Part 60 and 40 CFR Part 61 requires the EPA approval. Sampling of air contaminants shall occur as follows:

(1) Air contaminants monitored with a CEMS as specified under SC No. 40 shall be sampled to support CEMS operation as required by that condition.

(2) Sampling of air contaminants not monitored by CEMS under SC No. 40 shall occur as follows:

(a) Within 180 days of the issuance of this permit unless the emission point had been sampled within the last 5 years.

(b) Each emission point shall be sampled within 60 days of achieving maximum operation, not to exceed 180 days after initial operation, if new burners have been installed or if an operational change has been made allowing emissions to increase more than 10 percent greater than determined by the last stack sample.

(c) Each emission point shall be sampled as may be required by the Executive Director of the TCEQ.

D. The facility shall operate at maximum production rates during stack emission testing. Primary operating parameters that enable determination of production rates shall be monitored and recorded during the stack test. Any additional parameters shall be determined at the pretest meeting and shall be stated in the sampling report. Permit conditions and parameter limits may be waived during stack testing performed under this condition if the proposed condition/parameter range is identified in the test notice specified in paragraph A and accepted by the TCEQ Regional Office. Permit allowable emissions and emission control requirements are not waived and still apply during stack testing periods.

During subsequent operations, if an operating parameter as determined in the previous paragraph is greater than that recorded during the test period, stack sampling shall be performed at the new operating conditions within 120 days. This sampling may be waived by the TCEQ Air Section Manager for the Region.

E. One copy of the final sampling report shall be forwarded to the TCEQ within 60 days after sampling is completed. Sampling reports shall comply with the attached conditions of Chapter 14 of the TCEQ Sampling Procedures Manual. The reports shall be distributed as follows:

One copy to the TCEQ Corpus Christi Regional Office.

Continuous Determination of Compliance

40. The holder of this permit shall install, calibrate, and maintain a CEMS to measure and record the in-stack concentration of VOC from the marine VRU; CO, NO_x, and O_2 from the heaters and boilers with firing rates greater than 100 MMBtu/hr; SO_2 and O_2 from the SRU/Sulften Tail Gas Incinerator (exhausts to EPN 121 or 121a); SO_2 and O_2 from the SRU/Scot Tail Gas Incinerator (exhausts to EPN 121 or 121a), and NO_x, CO, O_2, and SO_2 from the Caustic Scrubber (exhausts to EPN 121). The monitoring system shall meet the following section of Requirements for CEMS. **(02/18)**

Requirements for CEMS

A. The CEMS shall meet the design and performance specifications, pass the field tests, and meet the installation requirements and the data analysis and reporting requirements specified in the applicable Performance Specification Nos. 1 through 7, 40 CFR Part 60, Appendix B. If there are no applicable performance specifications in 40 CFR Part 60, Appendix B, contact the TCEQ Office of Air, Air Permits Division for requirements to be met.

B. Section 1 below applies to sources subject to the quality-assurance requirements of 40 CFR Part 60, Appendix F; section 2 applies to all other sources:

(1) The permit holder shall assure that the CEMS meets the applicable quality-assurance requirements specified in 40 CFR Part 60, Appendix F, Procedure 1. Relative accuracy exceedances, as specified in 40 CFR Part 60, Appendix F, § 5.2.3 and any CEMS downtime shall be reported to the appropriate TCEQ Regional Manager, and necessary corrective action shall be taken. Supplemental stack concentration measurements may be required at the discretion of the appropriate TCEQ Regional Manager.

(2) The system shall be zeroed and spanned daily, and corrective action taken when the 24-hour span drift exceeds two times the amounts specified in the applicable Performance Specification Nos. 1 through 9, 40 CFR Part 60, Appendix B, or as specified by the TCEQ if not specified in Appendix B. Zero and span is not required on weekends and plant holidays if instrument technicians are not normally scheduled on those days, unless the monitor is required by a subpart of NSPS or NESHAPS, in which case zero and span shall be done daily without exception.

Each monitor shall be quality-assured at least quarterly using Cylinder Gas Audits (CGA) in accordance with 40 CFR Part 60, Appendix F, Procedure 1, Section 5.1.2, with the following exception: a relative accuracy test audit (RATA) is not required once every four quarters (i.e., four successive quarterly CGA may be conducted). An equivalent quality-assurance method approved by the TCEQ may also be used. Successive quarterly audits shall occur no closer than two months.

All CGA exceedances of +15 percent accuracy indicate that the CEMS is out of control.

C. The monitoring data shall be reduced to hourly average concentrations at least once weekly, using a minimum of four equally-spaced data points from each one-hour period. The individual average concentrations shall be reduced to units of the permit allowable emission rate in pounds/hr at least once every week and cumulative tons per year (TPY) on a 12-month rolling average at least once every month.

D. All monitoring data and quality-assurance data shall be maintained by the source for a period of five years and shall be made available to the TCEQ Executive Director or his designated representative upon request. The data from the CEMS may, at the discretion of the TCEQ, be used to determine compliance with the conditions of this permit.

E. All cylinder gas audit exceedances of ±15 percent accuracy and any CEMS downtime associated with emissions from EPNs 121 and 121a shall be reported to the appropriate TCEQ Regional Director within three days of any downtime, and necessary corrective action shall be taken. If the CEMS downtime for a specific emission point occurs when emissions are not being routed to that stack, that time period shall not be considered reportable CEMS downtime for the purposes of this special condition. Exceedances at other emission points shall be reported in Semiannual Excess Emission Reports. Supplemental stack concentration measurements may be required at the discretion of the appropriate TCEQ Regional Director.

F. The appropriate TCEQ Regional Office shall be notified at least 30 days prior to any required RATA in order to provide them the opportunity to observe the testing.

G. Quality-assured (or valid) data must be generated when each emitting facility is operating, except during the performance of a daily zero and span check. Loss of valid data due to periods of monitor break down, out-of-control operation (producing inaccurate data), repair, maintenance, or calibration may be exempted, provided that it does not exceed 5 percent of the time (in minutes) that the facility operated over the previous rolling 12-month period. The measurements missed shall be estimated using engineering judgment and the methods used recorded. Options to increase system reliability to an acceptable value, including a redundant CEMS, may be required by the TCEQ Regional Manager.

H. This paragraph applies to the NO_x, SO_2, and O_2 CEMS on the Caustic Scrubber (exhausts to EPN 121) and to the heaters and boilers in listed in SC No. 16 with NO_x CEMS. In addition to the requirements of SC No. 40.A-G., the CEMS shall be installed, certified, calibrated, maintained and operated in accordance with the provisions of 40 CFR §60.13 which are applicable only to CEMs (excluding those provisions applicable only to continuous opacity monitoring systems) and Part 60, Appendices A and F, and the applicable performance specification test of 40 CFR Part 60, Appendix B. With respect to 40 CFR Part 60 Appendix F, in lieu of the requirements of 40 CFR Part 60, Appendix F §§5.1.1, 5.1.3 and 5.1.4, the source must conduct either a RAA or a RATA on each CEMS at least once every three (3) years. The source must also conduct CGA each calendar quarter during which a RAA or a RATA is not performed. **(02/18)**

41. Pollutant concentrations at the outlet from the Caustic Scrubber (exhausts to EPN 121) shall not exceed the following values at dry conditions, zero percent O_2:

Pollutant	Maximum Allowable	Averaging Period
SO_2	50 ppm	1.0 hour
SO_2	50 ppm	7-day rolling average **(04/16)**
SO_2	25 ppm	365-day rolling average **(04/16)**
CO	500 ppm	1.0 hour
NO_x	150 ppm	1.0 hour

Pollutant concentrations at the outlet from the SCOT Stack (EPN 121a) shall not exceed the following values at dry conditions, zero percent O_2:

Pollutant	Maximum Allowable	Averaging Period
SO_2	250 ppm	1.0 hour
CO	332 ppm	1.0 hour
NO_x	50 ppm	1.0 hour

42. The continuous monitoring data will be used to determine violations of the limitations in this permit. For purposes of enforcement, the following averaging periods shall be utilized unless otherwise specified in this permit with respect to a specific emission point and pollutant:

Pollutant	Averaging Period
SO_2	1.0 hour
CO	1.0 hour

Pollutant	Averaging Period
H_2S	1.0 hour
Opacity	6.0 minutes
NO_x	1.0 hour

HF Control Measures

43. The HF detection paint shall be used on all potential fugitive sources and possible leak sites. Locations with HF detection paint shall be inspected every shift during the audio, visual, and olfactory checks required by SC No. 34. If leaks are detected, corrective action shall be taken immediately as described in SC No. 34. If there is a problem with HF sensitive paint availability, the holder of this permit shall notify the TCEQ Corpus Christi Regional Office and request additional time for painting or request alternate leak detection methods pending availability of the HF sensitive paint.

44. In the event of an HF release which may have the potential for off-site impacts, the holder of this permit shall implement the procedures outlined in the emergency response plans.

45. There shall be no overhead work in the HF process unit where equipment is being lifted over unprotected vessels or lines without first completing a safe work checklist in accordance with Occupational Safety and Health Administration Process Safety Management rules. The safe work checklist shall be used to ensure that every effort is made to minimize the potential for an accident that would result in loss of integrity of HF-containing equipment.

    The holder of this permit is required to notify the TCEQ Corpus Christi Regional Office no less than eight hours prior to conducting work over unprotected vessels or lines containing more than 5 percent by weight HF.

Miscellaneous

46. The SMR stripper vent condenser shall collect 98 percent of the methanol in the stripper vent on an hourly averaging period. The stripper exhaust gas temperature shall be maintained below that maintained during the most recent stack sample following the initial stack test.

    The condenser exhaust gas temperature shall be continuously monitored and recorded when the stripper is operating. The temperature measurement device shall reduce the temperature readings to an averaging period of six minutes or less and record it at that frequency. The temperature measurement device shall be installed, calibrated, and maintained according to accepted practice and the manufacturer's specifications. The device shall have an accuracy of the greater of ±0.75 percent of the temperature being measured expressed in degrees Celsius or ±2.5˚C.

47. Flares: BUP Flare, Main Flare and Ground Flare shall be operated in accordance with the New Source Performance Standards for Petroleum Refineries, 40 CFR Part 60 Subpart Ja. **(04/16)**

48. After December 31, 2008 the maximum allowable emission limit of NO_x from the West Plant Heavy Oil Cracker (HOC) (EPN 121) shall not exceed 37 ppmv (dry, zero percent O_2 basis) on a 365-day

rolling average and shall not exceed 74 ppmv (dry, zero percent O_2 basis) on a 7-day rolling average. **(04/16)**

Maintenance, Startup, and Shutdown

49. Planned startup and shutdown emissions due to the activities identified in SC No. 50 are authorized from facilities and emission points identified in Attachment 1, Boiler 30-B-03 (EPN: 163) in Permit 20740, the Xylene Splitter Reboiler Heater 49-H-91 (EPN: 49-H-91) in Permit 20992, emission points identified in SC No. 16 in Permit 106965, and emission points identified in SC No. 25 in Permit 109543, provided the facility and emissions are compliant with the routine emission caps and SC No. 60 of this permit. **(02/14)**

50. This permit authorizes the emissions for the planned MSS activities summarized in the MSS Activity Summary (Attachment 4) attached to this permit. This permit also authorizes emissions from the following temporary facilities used to support planned MSS activities at permanent site facilities: frac tanks, containers, vacuum trucks, facilities used for painting or abrasive blasting, portable control devices identified in SC No. 61, and controlled recovery systems. Emissions from temporary facilities are authorized provided the temporary facility (a) does not remain on the plant site for more than 12 consecutive months, (b) is used solely to support planned MSS activities at the permanent site facilities listed in Attachment 1, and (c) does not operate as a replacement for an existing authorized facility.

    Attachment 2 identifies the inherently low emitting MSS activities that may be performed at the refinery. Emissions from activities identified in Attachment 2 shall be considered to be equal to the potential to emit represented in the permit application. The estimated emissions from the activities listed in Attachment 2 must be revalidated annually. This revalidation shall consist of the estimated emissions for each type of activity and the basis for that emission estimate.

    Routine maintenance activities, as identified in Attachment 3 may be tracked through the work orders or equivalent. Emissions from activities identified in Attachment 3 shall be calculated using the number of work orders or equivalent that month and the emissions associated with that activity identified in the permit application.

    The performance of each planned MSS activity not identified in Attachments 2 or 3 and the emissions associated with it shall be recorded and include at least the following information:

    A. the process unit at which emissions from the MSS activity occurred, including the emission point number and common name of the process unit;
    B. the type of planned MSS activity and the reason for the planned activity;
    C. the common name or the facility identification number, if applicable, of the facilities at which the MSS activity and emissions occurred;
    D. the date and time on which the MSS activity occurred;
    E. the estimated quantity of each air contaminant, or mixture of air contaminants, emitted with the data and methods used to determine it. The emissions shall be estimated using the methods identified in the permit application, consistent with good engineering practice.

    All MSS emissions shall be summed monthly and the rolling 12-month emissions shall be updated on a monthly basis. A sum of all hourly MSS emissions shall be kept during all times when MSS activities are occurring to demonstrate that the MAERT hourly MSS Cap is not exceeded. **(date)**

51. Process units and facilities, with the exception of those identified in SC Nos. 54 (related to Floating Roof Tanks), 55 (related to Fixed Roof Tanks), 57 (related to frac or temporary tanks), and activities listed in Attachment 2, shall operate in accordance with the following requirements during MSS.

A. The process equipment shall be depressurized to a control device or a controlled recovery system prior to venting to atmosphere, degassing, or draining liquid. Equipment that only contains material that is liquid with VOC true vapor pressure (TVP) less than 0.50 psi at the normal process temperature and 95°F may be opened to atmosphere and drained in accordance with paragraph C of this special condition without depressuring or degassing to a control device. The vapor pressure at 95°F may be used if the actual temperature of the liquid is verified to be less than 95°F and the temperature is recorded.

B. If mixed phase materials must be removed from process equipment, the cleared material shall be routed to a knockout drum or equivalent to allow for managed initial phase separation. If the VOC TVP is greater than 0.50 psi at either the normal process temperature or 95°F, any vents in the system must be routed to a control device or a controlled recovery system. The vapor pressure at 95°F may be used if the actual temperature of the liquid is verified to be less than 95°F and the temperature is recorded. Control must remain in place until degassing has been completed or the system is no longer vented to atmosphere.

C. All liquids from process equipment shall be removed to the maximum extent practical prior to opening equipment to commence degassing and/or maintenance. Liquids with a VOC partial pressure greater than or equal to 0.044 psia at 68°F shall be drained into a closed vessel or to a controlled oily water system, unless prevented by the physical configuration of the equipment. If it is necessary to drain liquid into an open pan or sump, the liquid shall be covered or transferred to a covered vessel within one hour of being drained. After draining is complete, empty open pans may remain in use for housekeeping reasons to collect incidental drips.

D. If the VOC TVP is greater than 0.50 psi at the normal process temperature or 95°F, facilities shall be degassed using good engineering practice to ensure air contaminants are removed from the system through the control device or controlled recovery system to the extent allowed by process equipment or storage vessel design. The vapor pressure at 95°F may be used if the actual temperature of the liquid is verified to be less than 95°F and the temperature is recorded.

The following requirements do not apply to fugitive components, pumps, compressors.

(1) For MSS activities identified in Attachment 3, the following option may be used in lieu of (2) below. The facilities being prepared for maintenance shall not be vented directly to atmosphere, except as necessary to verify an acceptable VOC concentration and establish isolation of the work area, until the VOC concentration has been verified to be less than 10 percent of the lower explosive limit (LEL) per the site safety procedures.

(2) The locations and/or identifiers where the purge gas or steam enters the process equipment or storage vessel and the exit points for the exhaust gases shall be recorded (PFD's, P&ID's, or Turnaround and Inspection [T&I] plans may be used to demonstrate compliance with the requirement). Documented refinery procedures used to deinventory equipment to a control device for safety purposes (i.e., hot work or vessel entry procedures) that achieve at least the same level of purging may be used in lieu of the above. If the process equipment is purged with a gas, purge gas must have passed through the control device or controlled recovery system for a sufficient period of time in accordance with the applicable site operating procedures before the

vent stream may be sampled to verify acceptable VOC concentration prior to uncontrolled venting. The VOC sampling and analysis shall be performed using an instrument meeting the requirements of SC No. 52. The sampling point shall be upstream of the inlet to the control device or controlled recovery system. The sample ports and the collection system must be designed and operated such that there is no air leakage into the sample probe or the collection system downstream of the process equipment or vessel being purged. The facilities shall be degassed to a control device or controlled recovery system until the VOC concentration is less than or equal to 10,000 ppmv or 10 percent of the LEL.

(3) Alternatively, the process equipment may filled with a liquid with a VOC vapor pressure less than 0.147 psi while venting to control. If it can be verified that the liquid filled the entire process equipment or vessel, no sampling is necessary. If not, the VOC concentration shall be verified to be less than 10,000 ppmv or 10 percent of the LEL using an instrument meeting the requirements of SC No. 52 while purging to control immediately after draining the liquid from the system. The locations and/or identifiers where the liquid enters the process equipment or storage vessel and the exit points for the exhaust gases shall be recorded (PFDs, P&IDs, or T&I plans may be used to demonstrate compliance with the requirement).

E. Equipment containing materials with VOC TVP greater than 0.50 psi may be vented directly to atmosphere if all the following criteria are met:

(1) It is not technically practicable to depressurize or degas, as applicable, into the process.

(2) There is not an available connection to a plant control system (flare).

(3) There is no more than 50 lb of air contaminants to be vented to atmosphere during each shutdown or startup of a piece of equipment, as applicable.

All instances of venting directly to atmosphere per SC No. 51.D must be documented when occurring as part of any MSS activity. The emissions associated with venting without control must be included in the work order, shift logs, or equivalent for those planned MSS activities identified in Attachment 3. **(02/18)**

52. Air contaminant concentration shall be measured using an instrument/detector meeting one set of requirements specified below.

A. The VOC concentration shall be measured using an instrument meeting all the requirements specified in EPA Method 21 (40 CFR Part 60, Appendix A) with the following exceptions:

(1) The instrument shall be calibrated within 24 hours of use with a calibration gas. The calibration gas used and its concentration, and the vapor to be sampled and its approximate response factor (RF), shall be recorded. If the RF of the VOC (or mixture of VOCs) to be monitored is greater than 2.0, the VOC concentration shall be determined as follows:

VOC Concentration = Concentration as read from the instrument*RF

(2) Sampling shall be performed as directed by this permit in lieu of section 8.3 of Method 21. During sampling, data recording shall not begin until after two times the instrument response time. The date and time shall be recorded, and VOC concentration shall be monitored for at least 5 minutes and the greatest VOC concentration recorded. This

VOC concentration shall not exceed the specified VOC concentration limit prior to uncontrolled venting.

(3) If a TVA-1000 series FID analyzer calibrated with methane is used to determine the VOC concentration, a measured concentration of 34,000 ppmv may be considered equivalent to 10,000 ppmv as VOC.

B. Colorimetric gas detector tubes may be used to determine air contaminant concentrations if they are used in accordance with the following requirements.

(1) The air contaminant concentration measured is less than 80 percent of the range of the tube. If the maximum range of the tube is greater than the release concentration defined in (3), the concentration measured is at least 20 percent of the maximum range of the tube.

(2) The tube is used in accordance with the manufacturer’s guidelines.

(3) At least 2 samples taken at least 5 minutes apart must satisfy the following prior to uncontrolled venting:

measured contaminant concentration (ppmv) < release concentration.

Where the release concentration is:

10,000*mole fraction of the total air contaminants present that can be detected by the tube.

The mole fraction may be estimated based on process knowledge. The release concentration and basis for its determination shall be recorded.

Records shall be maintained of the tube type, range, measured concentrations, and time the samples were taken.

C. Lower explosive limit measured with a lower explosive limit detector.

(1) The detector shall be calibrated monthly with a certified pentane gas standard at 25 percent of the lower explosive limit (LEL) for pentane. Records of the calibration date/time and calibration result (pass/fail) shall be maintained.

(2) A daily functionality test shall be performed on each detector using the same certified gas standard used for calibration. The LEL monitor shall read no lower than 90 percent of the calibration gas certified value. Records, including the date/time and test results, shall be maintained.

(3) A certified methane gas standard equivalent to 25 percent of the LEL for pentane may be used for calibration and functionality tests provided that the LEL response is within 95 percent of that for pentane.

D. For measuring benzene breakthrough on Carbon Adsorption Systems in SC No. 61.A.(4), a portable gas chromatograph using a flame ionization detector or photo ionization detector may be used. Alternatively a photo-ionization detector equipped with a benzene separation tube consistent with manufacturer requirements may be used. The monitor shall have the sensitivity and specificity to quantify low level benzene concentrations. The monitor device shall be calibrated within 24 hours of use with a certified calibration gas containing ~5 ppm benzene. Records of the calibration date/time and calibration result shall be maintained.

53. If the removal of a component for repair or replacement results in an open ended line or valve, the open ended line is exempt from any New Source Review (NSR) permit condition requirement to

install a cap, blind flange, plug, or second valve for 72 hours. If the repair or replacement is not completed within 72 hours, the permit holder must complete either of the following actions within that time period;

A. a cap, blind flange, plug, or second valve must be installed on the line or valve, or demonstrate that the line, valve, component, etc, has been double blocked from the process; or

B. the permit holder shall verify that there is no leakage from the open-ended line or valve. The open-ended line or valve shall be monitored on a weekly basis in accordance with the applicable NSR permit condition for fugitive emission monitoring except that a leak is defined as any VOC reading greater than background. Leaks must be repaired within 24 hours or a cap, blind flange, plug, or second valve must be installed on the line or valve. The results of this weekly check and any corrective actions taken shall be recorded.

54. This permit authorizes emissions from the storage tanks identified in Attachment 1 during planned floating roof landings. Tank floating roofs may only be landed for changes of tank service or tank inspection/maintenance as identified in the permit application, except when the VOC vapors below the floating roof are routed to a control device or a controlled recovery system while the roof is landed. Tank change of service includes landings to accommodate seasonal RVP spec changes and landings to correct off-spec material that cannot be blended into finished product tanks. Tank roof landings include all operations when the tank floating roof is on its supporting legs. These emissions are subject to the maximum allowable emission rates indicated on the MAERT. The following requirements apply to tank roof landings.

A. The tank liquid level shall be continuously lowered after the tank floating roof initially lands on its supporting legs until the tank has been drained to the maximum extent practicable without entering the tank. Liquid level may be maintained steady for a period of up to two hours if necessary to allow for valve lineups and pump changes necessary to drain the tank. This requirement does not apply where the vapor under a floating roof is routed to control during this process.

B. If the VOC TVP of the liquid previously stored in the tank is greater than 0.50 psi at 95°F tank refilling or degassing of the vapor space under the landed floating roof must begin within 24 hours after the tank has been drained. Floating roof tanks with liquid capacities less than 100,000 gallons may be degassed without control if the VOC TVP of the standing liquid in the tank has been reduced to less than 0.02 psia prior to ventilating the tank. Controlled degassing of the vapor space under landed roofs shall be completed as follows:

(1) Any gas or vapor removed from the vapor space under the floating roof must be routed to a control device or a controlled recovery system and controlled degassing must be maintained until the VOC concentration is less than 10,000 ppmv or 10 percent of the LEL. The locations and identifiers of vents other than permanent roof fittings and seals, control device or controlled recovery system, and controlled exhaust stream shall be recorded. There shall be no other gas/vapor flow out of the vapor space under the floating roof when degassing to the control device or controlled recovery system.

(2) The vapor space under the floating roof shall be vented using good engineering practice to ensure air contaminants are flushed out of the tank through the control device or controlled recovery system to the extent allowed by the storage tank design.

(3) A volume equivalent to twice the volume of the vapor space under the floating roof must have passed through the control device or into a controlled recovery system, before the vent stream may be sampled to verify acceptable VOC concentration. The

volume measurement shall not include any make-up air introduced into the control device or recovery system. The VOC sampling and analysis shall be performed as specified in SC No. 52.

(4) The sampling point shall be upstream of the inlet to the control device or controlled recovery system. The sample ports and the collection system must be designed and operated such that there is no air leakage into the sample probe or the collection system downstream of the process equipment or vessel being purged.

(5) If ventilation is to be maintained with emission control, the VOC concentration shall be recorded once an hour.

(6) Degassing must be performed every 24 hours unless there is no standing liquid in the tank or the VOC TVP of the remaining liquid in the tank is less than 0.15 psia.

C. The tank shall not be opened except as necessary to set up for degassing and cleaning, or ventilated without control, until either all standing liquid has been removed from the tank or the liquid in the tank has a VOC TVP less than 0.02 psia. These criteria may be demonstrated in any one of the following ways.

(1) Low VOC TVP liquid that is soluble with the liquid previously stored may be added to the tank to lower the VOC TVP of the liquid mixture remaining in the tank to less than 0.02 psia. This liquid shall be added during tank degassing if practicable. The estimated volume of liquid remaining in the drained tank and the volume and type of liquid added shall be recorded. The liquid VOC TVP may be estimated based on this information and engineering calculations.

(2) If water is added or sprayed into the tank to remove standing VOC, one of the following must be demonstrated:

(a) Take a representative sample of the liquid remaining in the tank and verify no visible sheen using the static sheen test from 40 CFR Part 435 Subpart A Appendix 1.

(b) Take a representative sample of the liquid remaining in the tank and verify hexane soluble VOC concentration is less than 1000 ppmw using EPA method 1664 (may also use 8260B or 5030 with 8015 from SW-846).

(c) Stop ventilation and close the tank for at least 24 hours. When the tank manway is opened after this period, verify VOC concentration is less than 1000 ppmv through the procedure in MSS SC No. 52.

(3) No standing liquid verified through visual inspection.

The permit holder shall maintain records to document the method used to release the tank.

D. Tanks shall be refilled as rapidly as practicable until the roof is off its legs unless the vapor space is routed to control during refilling except as required by SC No. 69.

E. The occurrence of each roof landing and the associated emissions shall be recorded and the rolling 12-month tank roof landing emissions shall be updated on a monthly basis. These records shall include at least the following information:

(1) the identification of the tank and emission point number, and any control devices or recovery systems used to reduce emissions;

(2) the reason for the tank roof landing;

(3) for the purpose of estimating emissions, the date and time of each of the following events:

(a) the roof was initially landed,

(b) all liquid was pumped from the tank to the extent practical,

(c) start and completion of controlled degassing, and total volumetric flow,

(d) all standing liquid was removed from the tank or any transfers of low VOC TVP liquid to or from the tank including volumes and vapor pressures to reduce tank liquid VOC TVP to <0.02 psi,

(e) if there is liquid in the tank, VOC TVP of liquid, start and completion of uncontrolled degassing, and total volumetric flow,

(f) refilling commenced, liquid filling the tank, and the volume necessary to float the roof; and

(g) tank roof off supporting legs, floating on liquid;

(4) the estimated quantity of each air contaminant, or mixture of air contaminants, emitted between events (c) and (g) with the data and methods used to determine it. The emissions associated with roof landing activities shall be calculated using the methods described in Section 7.1.3.2 of AP-42 “Compilation of Air Pollution Emission Factors, Chapter 7 - Storage of Organic Liquids” dated November 2006 and the permit application.

55. Fixed-roof storage tanks shall not be ventilated without control, until either all standing liquid has been removed from the tank or the liquid in the tank has a VOC TVP less than 0.02 psia. This shall be verified and documented through one of the criteria identified in MSS SC No. 52.C. Storage tanks manways may be opened without emission controls when there is standing liquid with a VOC TVP greater than 0.02 psia as necessary to set up for degassing and cleaning. One manway may be opened to provide access to the tank when necessary to allow access to remove or de-volatilize the remaining liquid. The emission control system shall meet the requirements of SC Nos. 54.B.(1) through 54.B.(5) and records maintained per SC No. 54.E.(3)c through 54.E.(3)e, and 54.E.(4). Low vapor pressure liquid may be added to and removed from the tank as necessary to lower the vapor pressure of the liquid mixture remaining in the tank to less than 0.02 psia.

56. The following requirements apply to vacuum and air mover truck operations at this site:

A. Vacuum pumps and blowers shall not be operated on trucks containing or vacuuming liquids with VOC TVP greater than 0.50 psi at 95F unless the vacuum/blower exhaust is routed to a control device or a controlled recovery system.

B. Equip fill line intake with a “duckbill” or equivalent attachment if the hose end cannot be submerged in the liquid being collected.

C. A daily record containing the information identified below is required for each vacuum truck in operation at the site each day.

(1) Prior to initial use, identify any liquid in the truck. Record the liquid level and document that the VOC TVP is less than 0.50 psi if the vacuum exhaust is not routed to a control device or a controlled recovery system. After each liquid transfer, identify the liquid transferred and document that the VOC TVP is less than 0.50 psi if the vacuum exhaust is not routed to a control device or a controlled recovery system.

(2) For each liquid transfer made with the vacuum operating, record the duration of any periods when air may have been entrained with the liquid transfer. The reason for operating in this manner and whether a "duckbill" or equivalent was used shall be recorded. Short, incidental periods, such as those necessary to walk from the truck to the fill line intake, do not need to be documented.

(3) If the vacuum truck exhaust is controlled with a control device other than an engine or oxidizer, VOC exhaust concentration upon commencing each transfer, at the end of each transfer, and as required by SC No. 61, measured using an instrument meeting the requirements of MSS SC No. 52.

(4) The volume in the vacuum truck at the end of the day, or the volume unloaded, as applicable.

D. The permit holder shall determine the vacuum truck emissions each month using the daily vacuum truck records and the calculation methods utilized in the permit application. If records of the volume of liquid transferred for each pick-up are not maintained, the emissions shall be determined using the physical properties of the liquid vacuumed with the greatest potential emissions. Rolling 12 month vacuum truck emissions shall also be determined on a monthly basis.

E. If the VOC TVP of all the liquids vacuumed into the truck is less than 0.10 psi, this shall be recorded when the truck is unloaded or leaves the plant site and the emissions may be estimated as the maximum potential to emit for a truck in that service as documented in the permit application. The recordkeeping requirements in SC Nos. 56.A through 56.D do not apply.

57. The following requirements apply to frac, or temporary, tanks and vessels used in support of MSS activities.

A. Except for labels, logos, etc. not to exceed 15 percent of the tank/vessel total surface area, the exterior surfaces of these tanks/vessels that are exposed to the sun shall be white or aluminum. This requirement does not apply to tanks/vessels that only vent to atmosphere when being filled. This requirement also does not apply to frac tanks which are heated for the purpose of mixing liquids with VOC TVP less than 0.10 psi at 95°F. **(03/16)**

B. These tanks/vessels must be covered and equipped with fill pipes that discharge within 6 inches of the tank/vessel bottom.

C. These requirements do not apply to vessels storing less than 25 barrels of liquid that are closed such that the vessel does not vent to atmosphere.

D. The permit holder shall maintain an emissions record which includes calculated emissions of VOC from all frac tanks during the previous calendar month and the past consecutive 12 month period. The record shall include tank identification number, dates put into and removed from service, control method used, tank capacity and volume of liquid stored in gallons, name of the material stored, VOC molecular weight, and VOC TVP at the estimated monthly average material temperature in psia. Filling emissions for tanks shall be calculated using the TCEQ publication titled "Technical Guidance Package for Chemical Sources - Loading Operations" and standing emissions determined using: the TCEQ publication titled "Technical Guidance Package for Chemical Sources Storage Tanks."

E. If the tank/vessel is used to store liquid with VOC TVP less than 0.10 psi at 95F, records may be limited to the days the tank is in service and the liquid stored. Emissions may be estimated based upon the potential to emit as identified in the permit application.

58. The term “true vapor pressure (TVP)” is used in lieu of the term “partial pressure” in this permit.

59. The MSS activities represented in the permit application may be authorized under permit by rule only if the procedures, emission controls, monitoring, and recordkeeping are the same as those required by this permit.

60. All permanent facilities must comply with all operating requirements, limits, and representations in the permits identified in Attachment 1 during planned startup and shutdown unless alternate requirements and limits are identified in this permit. Alternate requirements for emissions from routine emission points are identified below:

A. Heaters, boilers, and furnaces are exempt from NO_x and CO operating requirements identified in other special conditions this permit during planned startup and shutdown if the following criteria are satisfied. This exemption does not include NO_x 365-day rolling average limits. **(08/16)**

(1) The routine maximum allowable emission caps are not exceeded.

(2) Except as noted in SC 60 A(4) below the startup period does not exceed 8 hours in duration and the firing rate does not exceed 75 percent of the design firing rate. The time it takes to complete the shutdown does not exceed 4 hours.

(3) Control devices are started and operating properly when venting a waste gas stream.

(4) Startup times exceeding 8 hours for specific facilities are allowed as identified below: **(date)**

Heater, Boiler, or Furnace FIN	EPN	Maximum Hours Allowed for Startup [1]
12-H01A and 12-H01B	115A and 115B	48
13-H-01A, 13-H-01B, and 13-H-01C	118	28
31-H-01	117	12
38-H-01, 38-H-02,38-H-03	162	45
47-H-03 and 47-H-04	150	10
48-H-01	151	12
49-H-01, 49-H-02, 49-H-03, 49-H-04	152	16
52-H-01	195	24

1. The number of hours applies to each heater, boiler, furnace and not for the EPN.

B. The limits identified below apply to the operations of the specified facilities during startup and shutdown. All other routine operating limitations apply during planned startup and shutdown.

(1) The HOC startup period shall not exceed 50 hours and the hourly average CO concentration during this period shall not exceed 1200 ppmvd corrected to zero percent O_2. All HOC emissions during startup are in the MSS emission caps.

(2) The sulfur recovery requirements and SRU tail gas incinerator sulfur dioxide concentration limits in SC Nos. 22 and 41 do not apply during SRU startup. Operation in the hot standby mode shall be minimized. The SRU tailgas incinerator shall be operated in accordance with SC No. 24 during this period. A SRU incinerator shall not operate in this mode for more than 72 hours in any rolling 12 month period.

(3) Paragraph (2) of this condition does not apply when SRU vent gasses from a TGI are routed through the HOC caustic scrubber prior to being discharged to the atmosphere. This paragraph applies instead. The HOC caustic scrubber shall be monitored with a SO_2 CEMS.

C. A record shall be maintained indicating that the start and end times for each of the activities identified above occur and documentation that the requirements for each have been satisfied.

61. Control devices required by this permit for emissions from planned MSS activities are limited to those types identified in this condition. Control devices shall be operated with no visible emissions except periods not to exceed a total of five minutes during any two consecutive hours. Each device used must meet all the requirements identified for that type of control device.

Controlled recovery systems identified in this permit shall be directed to an operating refinery process or to a collection system that is vented through a control device meeting the requirements of this permit condition.

A. Carbon Adsorption System (CAS).

(1) The CAS shall consist of 2 carbon canisters in series with adequate carbon supply for the emission control operation.

(2) The CAS shall be sampled downstream on the first can and the concentration recorded at least once every hour of CAS run time to determine breakthrough of the VOC. The sampling frequency may be extended using either of the following methods:

(a) The CAS systems equipped with an upstream liquid scrubber may be sampled once every 12 hours of CAS run time to determine breakthrough.

(b) Sampling frequency may be extended to up to 30 percent of the minimum potential saturation time for a new can of carbon. The permit holder shall maintain records including the calculations performed to determine the minimum saturation time.

(c) The carbon sampling frequency may be extended to longer periods based on previous experience with carbon control of a MSS waste gas stream. The past experience must be with the same VOC, type of facility, and MSS activity. The basis for the sampling frequency shall be recorded. If breakthrough is monitored on the initial sample of the upstream can when the polishing can is put in place, a permit deviation shall be recorded.

(3) The method of VOC sampling and analysis shall be by detector meeting the requirements of SC No. 52.

(4) Breakthrough is defined as the highest measured VOC or benzene concentration at or exceeding 100 ppmv or 5 ppmv, respectively, above background. When the condition of breakthrough of VOC from the initial saturation canister occurs, the waste gas flow shall be switched to the second canister and a fresh canister shall be placed as the new final polishing canister within twenty-four hours. In lieu of replacing canisters, the flow of waste gas may be discontinued until the canisters are switched. Sufficient new activated carbon canisters shall be available to replace spent carbon canisters such that replacements can be done in the above specified time frame.

(5) Records of CAS monitoring shall include the following:

(a) Sample time and date.

(b) Monitoring results (ppmv).

(c) Canister replacement log.

(6) Single canister systems are allowed if the time the carbon canister is in service is limited to no more than 30 percent of the minimum potential saturation time. The permit holder shall maintain records for these systems, including the calculations performed to determine the saturation time. The time limit on carbon canister service shall be recorded and the expiration date attached to the carbon can.

(7) Liquid scrubbers may be used upstream of carbon canisters to enhance VOC capture provided such systems are closed systems and the spent absorbing solution is discharged into a closed container, vessel, or system.

B. Thermal Oxidizer and Vapor Combustion Units (VCUs) **(date)**

(1) The thermal oxidizer or VCU six minute average firebox exit temperature shall be maintained at not less than 1400°F and waste gas flows shall be limited to assure at least a 0.5 second residence time in the fire box while waste gas is being fed into the oxidizer.

(2) The thermal oxidizer or VCU exhaust temperature shall be continuously monitored and recorded when waste gas is directed to the oxidizer or VCU. The temperature measurements shall be made at intervals of six minutes or less and recorded at that frequency. Temperature measurements recorded in continuous strip charts may be used to meet the requirements of this section.

The temperature measurement device shall be installed, calibrated, and maintained according to accepted practice and the manufacturer's specifications. The device shall have an accuracy of the greater of ±0.75 percent of the temperature being measured expressed in degrees Celsius or ±2.5ºC.

(3) As an alternative to 61.B.(1) of this condition, the thermal oxidizer or VCU may be tested to confirm a minimum 99 wt percent destruction efficiency. The results of the test will be used to determine the minimum operating temperature and residence time. Stack Test must have been performed within the last 12 months. Stack VOC concentrations and flow rates shall be measured in accordance with applicable United States Environmental Protection Agency (EPA) Reference Methods. A copy of the test report shall be maintained with the thermal oxidizer or VCU and a summary of the testing results shall be included with the emission calculations.

(4) As an alternative to 61.B.(1)-(2) of this condition, the thermal oxidizer or VCU may be equipped with continuous VOC monitors (inlet and outlet). The VOC monitors shall be calibrated and maintained according to SC No. 52, except 52.C. In order to demonstrate compliance with this requirement, inlet VOC and outlet VOC concentrations and flows shall be measured at least every 15 minutes and this information used to determine inlet and outlet VOC mass rates on an hourly basis to confirm a minimum of 99 percent destruction efficiency or an exhaust concentration not greater than 20 ppmv.

C. Internal Combustion Engine.

(1) The internal combustion engine shall have a VOC destruction efficiency of at least 99 percent.

(2) The engine must have been stack tested with butane to confirm the required destruction efficiency within the past 12 months. VOC shall be measured in accordance with the applicable United States EPA Reference Method during the stack test and the exhaust flow rate may be determined from measured fuel flow rate and measured oxygen concentration. A copy of the stack test report shall be maintained with the engine. There shall also be documentation of acceptable VOC emissions following each occurrence of engine maintenance which may reasonably be expected to increase emissions including oxygen sensor replacement and catalyst cleaning or replacement. Stain tube indicators specifically designed to measure VOC concentration shall be acceptable for this documentation, provided a hot air probe or equivalent device is used to prevent error due to high stack temperature, and three sets of concentration measurements are made and averaged. Portable VOC analyzers meeting the requirements of SC No. 52 are also acceptable for this documentation.

(3) The engine shall be operated with an oxygen sensor-based air-to-fuel ratio (AFR) controller. Documentation for each AFR controller that the, manufacturer's, or supplier's recommended maintenance has been performed, including replacement of the oxygen sensor as necessary for oxygen sensor-based controllers shall be maintained with the engine. The oxygen sensor shall be replaced at least quarterly in the absence of a specific written recommendation.

D. The plant flare system

(1) The heating value and velocity requirements in 40 CFR 60.18 shall be satisfied during operations authorized by this permit.

(2) The flare shall be operated with a flame present at all times and/or have a constant pilot flame. The pilot flame shall be continuously monitored by a thermal couple or an infrared monitor. The time, date, and duration of any loss of pilot flame shall be recorded. Each monitoring device shall be accurate to, and shall be calibrated at a frequency in accordance with, the manufacturer's specifications.

(3) Each flare shall be equipped with one of the following:

(a) Operation and maintenance of a flare gas recovery system.

(b) A continuous flow monitor and composition analyzer that provides a record of the flare gas flow and composition of either the total VOC or heating value of the flare gas.

The flow monitor and analyzer sample point shall be installed as near as possible to the flare inlet such that the total vent stream to the flare is measured and analyzed. Readings shall be taken at least once every 15 minutes and the average hourly values of the flow and composition shall be recorded each hour. The flow monitors shall be calibrated on an annual basis to meet the following accuracy specifications: the flow monitor must be calibrated to manufacturer's specifications; the temperature monitor must be calibrated to within ± 2.0 percent at absolute temperature; the pressure monitor must be calibrated to within ± 5.0 mmHg.

i. If VOC monitoring is chosen: Calibration of the analyzer shall follow the procedures and requirements of Section 10.0 of 40 CFR Part 60, Appendix B, Performance Specification 9, as amended through October 17, 2000, (65 FR 61744), except that the multi-point calibration procedure in Section 10.1 of Performance Specification 9 shall be performed at least once every calendar quarter instead of once every month, and the mid-level calibration check procedure in Section 10.2 of Performance Specification 9 shall be performed at least once every calendar week instead of once every 24 hours. The on-line analyzer system must be capable of measuring constituents sufficient to determine the net heating value of the gas combusted in the flare to within 5.0%, or be calibrated with certified standards of the top two constituents affecting net heating value, whichever is more stringent and the ranges of calibration standards may be based on the typical concentrations observed rather than the full potential range of concentrations. The calibration gases used for calibration procedures shall be in accordance with Section 7.1 of Performance Specification 9. Net heating value of the gas combusted in the flare shall be calculated according to the equation given in 40 CFR § 60.18(f)(3) as amended through October 17, 2000, (65 FR 61744).

ii. If heating value is chosen: The calorimeter shall be calibrated, installed, operated, and maintained, in accordance with manufacturer recommendations, to continuously measure and record the net heating value of the gas sent to the flare, in British thermal units/standard cubic foot of the gas.

E. Single Carbon Adsorption or Scrubber System

A single liquid scrubbing or single carbon canister adsorption system may be used as a sole control device if the requirements below are satisfied.

(1) The exhaust to atmosphere shall be continuously monitored with a CEM. The VOC concentration shall be recorded at least once every 15 minutes when waste gas is directed to the CAS or scrubber.

(2) The method of VOC sampling and analysis shall be by detector meeting the requirements of SC No. 52 except 52.C.

(3) An alarm shall be installed such that an operator is alerted when outlet VOC concentration exceeds 100 ppmv above background. The MSS activity shall be stopped as soon as possible when the VOC concentration exceeds 100 ppmv above background for more than one minute. The date and time of all alarms and the actions taken shall be recorded.

F. A closed loop refrigerated vapor recovery system

(1) The vapor recovery system shall be installed on the facility to be degassed using good engineering practice to ensure air contaminants are flushed from the facility through the refrigerated vapor condensers and back to the facility being degassed. The vapor recovery system and facility being degassed shall be enclosed except as necessary to insure structural integrity (such as roof vents on a floating roof tank).

(2) VOC concentration in vapor being circulated by the system shall be sampled and recorded at least once every 4 hours at the inlet of the condenser unit with an instrument meeting the requirements of SC No. 52.

(3) The quantity of liquid recovered from the tank vapors and the tank pressure shall be monitored and recorded each hour. The liquid recovered must increase with each reading and the tank pressure shall not exceed one inch water pressure while the system is operating.

G. Other control devices approved by the TCEQ through a permit amendment application or a pollution control permit application.

62. The following requirements apply to capture systems for the plant flare system.

A. Each capture system for the plant flare system shall comply with one of the following:

(1) Conduct a once a month visual, audible, and/or olfactory inspection of the capture system to verify there are no leaking components in the capture system; or

(2) verify the capture system is leak-free by inspecting in accordance with 40 CFR Part 60, Appendix A, Test Method 21 once a year. Leaks shall be indicated by an instrument reading greater than or equal to 500 ppmv above background.

B. The control device shall not have a bypass.

C. If any of the inspections under A of this condition is not satisfactory, the permit holder shall promptly take necessary corrective action. Records shall be maintained documenting the performance and results of the inspections required in this condition.

63. If spray guns are used to apply paint, they shall be airless, high volume low pressure (HVLP), or have the same or higher transfer efficiency as airless or HVLP spray guns.

64. Emissions from all painting activities, except for minor painting identified in Attachment 2 to this permit, at this site must satisfy the criteria below. New compounds may also be added through the use of the procedure below.

A. Short-term (pounds per hour [lb/hr]) and annual (TPY) emissions shall be determined for each chemical in the paint as documented in the permit application. The calculated emission rate shall not exceed the maximum allowable emissions rate at any emission point.

B. The Effect Screening Level (ESL) for the material shall be obtained from the current TCEQ ESL list or by written request to the TCEQ Toxicology Division.

C. The total painting emissions of any compound must satisfy one of the following conditions:

(1) The total emission rate is less than 0.1 lb/hr and the ESL greater than or equal to 2 μg/m^3; or

(2) The emission rate of the compound in pounds per hour is less than the ESL for the compound divided by 171.5 (ER<ESL/171.5).

D. The permit holder shall maintain records of the information below and the demonstrations in steps A though C above. The following documentation is required for each compound:

(1) Chemical name(s), composition, and chemical abstract registry number if available.

(2) Material Safety Data Sheet.

(3) Maximum concentration of the chemical in weight percent

(4) Paint usage and the associated emissions shall be recorded each month and the rolling 12 month total emissions updated.

65. No visible emissions shall leave the property due to painting or abrasive blasting.

66. Black Beauty and Garnet Sand may be used for abrasive blasting. The permit holder may also use blast media that meet the criteria below:

    A. The media shall not contain asbestos or greater than 1.0 weight percent crystalline silica.

    B. The weight fraction of any metal in the blast media with a short term ESL less than 50 micrograms per cubic meter as identified in the most recently published TCEQ ESL list shall not exceed the ESLmetal/1000.

    C. The MSDS for each media used shall be maintained on site.

    D. Blasting media usage and the associated emissions shall be recorded each month and the rolling 12 month total emissions updated.

67. Planned maintenance activities must be conducted in a manner consistent with good practice for minimizing emissions, including the use of air pollution control equipment, practices and processes. All reasonable and practical efforts to comply with SC Nos. 49 through 66, 68, and 69 must be used when conducting the planned maintenance activity, until the commission determines that the efforts are unreasonable or impractical, or that the activity is an unplanned maintenance activity.

68. Slab cleaning activities are limited to water washing small pieces of process equipment, empty vacuum trucks, and empty portable frac containers. Records shall be maintained of the number of items cleaned each day and the emissions determined each month based on the number of items cleaned as estimated in the permit amendment application, PI-1 dated December 21, 2006. The permit holder may assume that all vacuum trucks and frac tanks used on the site as recorded in SC Nos. 56 and 57 are cleaned in lieu of maintaining cleaning records for those items.

69. The following requirements ensure satisfactory impacts off-site during MSS.

    A. A maximum of 3 frac or temporary storage tanks or vessels may be filled with naphtha during any one hour period.

    B. Emissions from refilling tanks with a landed roofs with a liquid with a vapor pressure greater than 0.50 psia shall be routed to a control device meeting the requirements of SC No. 61 unless the tank has been cleaned and degassed.

    C. While filling a tank with a landed roof with a liquid with vapor pressure greater than 0.50 psia without emission control, no other tanks with landed roofs may be degassed or filled with that type of liquid.

    D. If a cleaned and degassed tank with a landed roof has been refilled with a liquid with vapor pressure greater than 0.50 psia without emission control in the past 12 months, emissions from refilling the tank with a landed roof shall be routed to a control device meeting the requirements of SC No. 61 if the liquid has a vapor pressure greater than 0.50 psia.

70. Records shall be maintained in accordance with SC No. 50 for planned MSS on the Air Liquide Large Industries SMR (Permit 34245, RN103120929). Total waste gas directed to the Valero flares during these operations shall not exceed the total identified in the permit amendment application, PI-1 dated September 23, 2014. **(03/16)**

71. The following steps shall take place before the catalyst is removed from the HDS unit for transfer to the catalyst pad. The reactor shall be cooled prior to opening and the catalyst shall be flushed with

gas oil followed by hydrogen recycle gas circulation. The catalyst shall then be neutralized with a demineralized water and soda ash solution.

72. Each of the following EPNs may not exceed the hours of MSS operation per calendar year shown in the table. **(03/16)**

Emission Point Number	Hours of MSS operation per calendar year
30-B-04MSS	36
16-P-11	52
16-P-12	52
16-P-13	52
16-P-14	52

Permit References

73. The permit holder shall maintain a copy of the effective permit at the site together with complete copies of all confidential documents that are referenced in the above permit conditions as attachments. The permit and attachments shall be made available to TCEQ personnel at the site upon request.

Emission Cap Compliance Recordkeeping

74. Recordkeeping programs for those facilities authorized by the permit shall be established and maintained such that the ability to demonstrate compliance with all authorized emission caps and individual emission rate limits (short-term and annual) is ensured. Records of all compliance testing, CEMS/PEMS results, and process parameters necessary to demonstrate compliance with the emission rate caps shall be maintained on-site for a period of five years.

Emissions calculations for verifying compliance with the emission caps shall be performed at least once every quarter to demonstrate compliance with the annual rolling average requirement. The holder of this permit shall maintain all records necessary to demonstrate compliance with the short-term (lb/hr) and annual TPY emissions cap and provide such demonstration of compliance to the TCEQ Corpus Christi Regional Office upon request.

The emissions shall be determined using the following techniques: **(02/18)**

Fugitive	Component counts using the emission factors and method specified in the permit application.
Cooling Towers	Measured strippable VOC concentration as specified in SC No. 30 and the cooling tower circulation rate.
Tanks	As specified in SC No. 28.
Heaters/Boilers	If a CEMS is installed, as specified in SC No. 40. If stack tested per SC No. 39, using the most recent stack test result and recorded firing rate for the period. If

no sampling is required, using the emission factor in the permit application and the recorded firing rate for the period.

Loading	Fugitive emissions from loading operations shall be calculated using: (a) AP 42 loading equation listed in Chapter 5.2 and (b) the TCEQ publication titled "Technical Guidance for Chemical Sources Loading Operations." Emissions from control devices shall be determined using the emission factor (in mg/l) determined through testing and the volume loaded. The manufacturer's guaranteed emission factor may be used if the most recent stack testing has verified that factor.
SRU/HOC	If a CEMS is installed, as specified in SC No. 40.
Scrubber	If stack tested per SC No. 38, using the most recent stack test result and recorded operating rate for the period. If no sampling is required, using the emission factor in the flexible permit application and the average value of the appropriate operating parameter for the period.
Diesel Engines	Emissions calculated based on hours of operation and emission factors listed on Table D-1 in the confidential section of the permit amendment application dated November 16, 2004.

These and all other records required by any previous condition of this permit shall be made available to the TCEQ Executive Director or his representative upon request.

Federal Applicability

75. These facilities shall comply with all applicable requirements of the U.S. Environmental Protection Agency (EPA) regulations on Standards of Performance for New Stationary Sources promulgated for the following:

A. Petroleum Refineries in 40 CFR Part 60, Subparts A , J, and Ja as follows: **(04/16)**

1) All heaters and boilers – Subpart J, except as noted below;

2) Desalter Heater (EPN 114), Heater 31-H-01 (EPN: 117), and Boiler 30-B-04 (EPN: 30-B-04) – Subpart Ja **(02/18)**

3) HOC – Subpart J

4) SRU's – Subpart J

5) BUP Flare, Main Flare, and Ground Flare – Subpart Ja

B. Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and Prior to May 19, 1978, in 40 CFR Part 60, Subparts A and K.

C. Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984, in 40 CFR Part 60, Subparts A and Ka.

D. Volatile Organic Liquid Storage Vessels (including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced after July 23, 1984, in 40 CFR Part 60, Subparts A and Kb.

E. Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry (SOCMI) for which Construction, Reconstruction, or Modification Commenced After January 5, 1981, and on or Before November 7, 2006, in 40 CFR Part 60, Subparts A and VV.

F. Bulk Gasoline Terminals in 40 CFR Part 60, Subparts A and XX.

G. Petroleum Refineries for which Construction, Reconstruction, or Modification Commenced after January 4, 1983, and on or Before November 7, 2006, in 40 CFR Part 60, Subparts A and GGG.

H. The VOC Emissions from SOCMI Distillation Operations in 40 CFR Part 60, Subparts A and NNN.

I. The VOC Emissions from Petroleum Refinery Wastewater Systems in 40 CFR Part 60, Subparts A and QQQ.

J. The VOC Emissions from SOCMI Reactor Processes in 40 CFR Part 60, Subparts A and RRR.

76. These facilities shall comply with all applicable requirements of EPA regulations on National Emission Standards for Hazardous Air Pollutants (NESHAPS) promulgated for the following:

A. Asbestos in 40 CFR Part 63, Subparts A and M.

B. Benzene Waste Operations in 40 CFR Part 63, Subparts A and FF.

77. These facilities shall comply with all applicable requirements of EPA regulations on National Emission Standards for Hazardous Air Pollutants (NESHAPS) for Source Categories promulgated for the following:

A. Marine Tank Vessel Loading Operations in 40 CFR Part 63, Subparts A and Y.

B. Hazardous Air Pollutants from Petroleum Refineries in 40 CFR Part 63, Subparts A and CC.

C. Hazardous Air Pollutants for Petroleum Refineries: Catalytic Cracking Units, Catalytic Reforming Units, and Sulfur Recovery Units in 40 CFR Part 63, Subparts A and UUU.

D. Industrial, Commercial, and Institutional Boilers and Process Heaters in 40 CFR Part 63, Subparts A and DDDDD. **(02/18)**

E. Hazardous Air Pollutants: Site Remediation in 40 CFR Part 63, Subparts A and GGGGG.

Referenced Permit by Rule Authorizations

78. The following sources and/or activities are authorized under a Permit by Rule (PBR) by Title 30 Texas Administrative Code Chapter 106 (30 TAC Chapter 106). These lists are not intended to be all inclusive and can be altered without modifications to this permit. **(date)**

Authorization	Source or Activity
PBR No. 155846	Control of liquid petroleum gas (LPG) unloading with a portable vapor combustion unit.

Date: _______________

Attachment 1

Permit Numbers 38754 and PSDTX324M14

Permit Emission Points By Type

Category	EPN	Description
Fired Units	1	Crude Heater
	16-P-04	Diesel Pump
	16-P-07	Diesel Pump
	16-P-11	Diesel Pump
	16-P-12	Diesel Pump
	16-P-13	Diesel Pump
	16-P-14	Diesel Pump
	49-H-90	C7 Splitter Reboiler
	74	Vacuum Unit Heater
	83-P-136A	Diesel Pump
	83-P-136B	Diesel Pump
	114	Desalter Heater
	115	HDS Charge Heaters
	116	HDS Heavy Oil Preheater
	117	Alky Fract Reboiler
	118	Hydrogen Reformer Heater
	119	Sulften Heater
	120	Butamer Heater
	121	HOC (incinerator and scrubber stack)
	121a	SRU Bypass Stack
	124	API Separator Combustor
	131	Crude Preflash Heater
	132	Crude Stabilizer Heater
	150	HCU Heater
	151	NHT Heater
	152	CRU Heaters
	153	Boiler 30-B-02
	162	Oleflex Heaters

Category	EPN	Description
	172	RSU Heater
	30-B-04	Boiler 30-B-04
	30-B-04MSS	Boiler 30-B-04MSS
	195	GD Charge Heater
	900	Crude Charge Heater (Permit No. 106965)
	TRUCKCOMB	Truck Loading Combustor
Flares	126	Main Flare
	127	MTBE Flare
	135	Acid Gas Flare (Pilots Only)
	158	Ground Flare
Tanks	69	Tank No. 9
	83-TK-26	Tank No. 26
	83-TK-155	Tank No. 155
	83-TK-159	Tank No. 159
	83-TK-160	Tank No. 160
	83-TK-162	Tank No. 162
	187	Tank No. 25
	902	Tank No. 165 (Permit No. 106965)
Fugitive	1F	Crude Unit
	2F	Vacuum Unit
	4F	LEU
	07F	BUP Flare
	08F	08 FLR/Day Tanks
	11F	Desalter Unit
	12F	HDS Unit
	13F	SMR
	18F	HRLEU Unit
	20F	LRU
	21/22F	HOC Unit
	30F	Boilerhouse

Category	EPN	Description
	31F	HF Alkylation Unit
	36F	Butamer Unit
	37F	MTBE
	38F	Oleflex
	41F	SRU Unit
	42F	SWS
	46-24F	SULF/SEU
	47F	HCU
	47PSAF	PSA
	48F	NHT
	49F	CRU
	52F	Gasoline Desulfurization
	54F	SHU
	83F	WWT
	175	49-RSU/XFU
	201	Railcar Unloading
	DOCKS	Docks
	LPGSTGF	LPG Storage
	MVRUF	MVRU
	TERM-F	Terminals
	TRKRACKFUG	Truck Rack
	903	Crude Unit Fugitives (Permit No. 106965)
	904	Crude Unit BWS Fugitives (Permit No. 106965)
	908	Crude Storage Fugitives (Permit No. 109543)
Loading	31	Barge Loading (Heavy Oil)
	SHIP FUG	Ship Dock Fugitives
	TRUCKFUG	Truck Loading
	VRU	Marine loading VRU
	907	Crude Loading Fugitives (Permit No. 109543)

Category	EPN	Description
	909	Crude Loading Vapor Combustor (Permit No. 109543)
Other	1CT	CU/VRU Cooling Tower
	01-01	Crude/Vac Pump Alley
	01-02	North of Vac Unit
	01-03	North of Vac Unit
	50-01	East of Tank 62
	52-01	NW of GDU MCC
	70-01	East of Tank 55
	70-02	NW of Tank 106
	70-03	West of Tank 94
	72-01	East of Tank 111
	73-01	North of Tank 152
	73-01	Between TK 8 & TK 164
	83-01	WWT-Hydroblast Pad
	01-04	NW of Vac Unit
	03-01	North of tanks 156/161
	11-01	Desalter Pump Alley
	21BH	Magnacat Unit
	41-01	North of 43-TK-08
	41-02	West of 41-V-05
	49-01	NW of XFU
	49-02	North of NHT
	49-03	NHT Pump Alley
	83-02	WWT-Desalter Lift
	83-03	WWT-East of KOH Trtr
	83-04	WWT- NE of Tank 159
	83-05	WWT-North Lift
	83-06	WWT-North of V-68
	83-07	WWT-South of V-55

Category	EPN	Description
	83-09	WWT-BSRP
	83-10	WWT-83-V-99
	83-12	WWT-83-V-28
	83-TK-23	Equalization Tank
	83-TK-27	Bio Oxidation Tank
	83-V-58	Tank No. 58
	83-V-59	Tank No. 59
	83-V-97	Tank No. 97
	98-02	WP MSAT Rail Rack
	122	HOC Cooling Tower
	123	ALKY Cooling Tower
	124a	API Sep Back Up
	155	CCU CCR
	901	Crude Unit Cooling Tower (Permit No. 106965)
	168	Oleflex CCR
	AE-49601A/B	Analyzer Vent AE-49601A/B
	167-CT	BUP Cooling Tower
	AE-49900A/B	Analyzer Vent AE-49900A/B
	AE-49901A/B	Analyzer Vent AE-49901A/B
	V-201	WP MSAT Rail Rack
	WWTP-AERB	Aeration Basin
	WWTP-CLRF	Clarifier
	WWTP-OWS	WW Collection System
	WWTP-SLB	Salin Basin

Dated: March 14, 2016

Attachment 2

Permit Numbers 38754 and PSDTX324M14

Inherently Low Emitting Activities

	Emissions				
Activity	**VOC**	**NO_x**	**CO**	**PM**	**H_2S/SO_2**
Catalyst activation/deactivation	x				
Management of sludge from pits, ponds, sumps, and water conveyances	x				
Aerosol Cans	x				
Calibration of analytical equipment and process instrumentation	x	x	x		x
Carbon canister replacement	x				
Catalyst charging/handling				x	
Instrumentation/analyzer maintenance	x				
Meter proving	x				
Replacement of analyzer filters and screens	x				
Maintenance on water treatment systems (cooling, boiler, potable)	x				
Soap and other aqueous based cleaners	x				
Cleaning sight glasses	x				
Aerosol and miscellaneous chemical usage	x				

Date: January 22, 2016

Attachment 3

Permit Numbers 38754 and PSDTX324M14

Routine Maintenance Activities

Pump repair/replacement

Fugitive component (valve, pipe, flange) repair/replacement

Compressor repair/replacement

Heat exchanger repair/replacement

Vessel repair/replacement

Date: January 22, 2014

Attachment 4

Permit Numbers 38754 and PSDTX324M14

MSS Activity Summary

Facilities	Description	Emissions Activity	EPN
all process units and tanks	shutdown/depressurize/drain/startup (includes SRU shutdowns, FCCU startups and Air Liquide MSS activities)	Vent to control	MSS Turnaround (MSS-TA) Routine MSS (MSS-MA)
all process units and tanks	process unit purgegas/drain/startup (except FCCU and SRU)	Vent to atmosphere	MSS-TA Uncontrolled MSS-MA Uncontrolled
Vacuum Trucks	removal and transfer of process and/or waste liquids	Vent to atmosphere	MSS-TA Uncontrolled MSS-MA Uncontrolled
Process units and tanks	Painting	Vent to atmosphere	MSS-TA Uncontrolled MSS-MA Uncontrolled
Process units and tanks	Miscellaneous chemical usage	Vent to atmosphere	MSS-TA Uncontrolled MSS-MA Uncontrolled
FRAC tanks	Temporary storage of process liquids and/or waste liquids	Vent to atmosphere	MSS-TA Uncontrolled MSS-MA Uncontrolled
Cleaning Slab	Washing of portable or mobile MSS or process equipment	vent to atmosphere	MSS-TA Uncontrolled MSS-MA Uncontrolled
Process units and tanks	Abrasive blasting	Vent to atmosphere	MSS-TA Uncontrolled
HDS	Remove spent catalyst, store on pad prior to transfer	Vent to atmosphere	MSS-TA Uncontrolled
Boiler 30-B-04	Startup and shutdown	Vent to atmosphere	30-B-04 MSS
Firewater Pump Engines	Test runs	Vent to atmosphere	16-P-11, 16-P-12, 16-P-13, and 16-P-14

Date: ____________

Emission Sources - Maximum Allowable Emission Rates

Permit Numbers 38754 and PSDTX324M15

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)
MSS Caps	MSS Caps	CO	2,085.19	128.91
		H_2S	10.59	0.22
		NH_3	4.41	0.17
		NO_x	356.84	27.19
		PM	79.52	3.76
		PM_{10}	79.52	2.92
		$PM_{2.5}$	79.52	2.92
		SO_2	996.29	338.89
		VOC	578.44	70.04
		Exempt Solvents	1.76	0.60
1	Heater - Crude Heater (01-H-01)	CO	8.10	20.13
		NH_3	0.05	0.17
		NO_x	9.72	19.24
		PM	1.21	4.00
		PM_{10}	1.21	4.00
		$PM_{2.5}$	1.21	4.00
		SO_2	2.50	5.71
		VOC	0.87	2.90
131	Heater - Crude Preflash (01-H-02)	CO	0.62	2.71
		NH_3	<0.01	0.02
		NO_x	1.77	6.29
		PM	0.13	0.49
		PM_{10}	0.13	0.49
		$PM_{2.5}$	0.13	0.49
		SO_2	0.27	0.64

Emission Sources - Maximum Allowable Emission Rates

		VOC	0.10	0.35
132	Heater - Crude Stabilizer (01-H-03)	CO	0.17	0.72
		NH_3	<0.01	<0.01
		NO_x	0.48	2.06
		PM	0.04	0.15
		PM_{10}	0.04	0.15
		$PM_{2.5}$	0.04	0.15
		SO_2	0.07	0.22
		VOC	0.03	0.11
74	Vacuum Heater	CO	4.99	16.77
		NH_3	0.03	0.14
		NO_x	5.98	26.21
		PM	0.74	3.26
		PM_{10}	0.74	3.26
		$PM_{2.5}$	0.74	3.26
		SO_2	1.37	4.13
		VOC	0.54	2.36
114	Heater - Desalter Heater (11-H-01)	CO	3.54	15.52
		CO	3.54	15.52
		NH_3	0.03	0.14
		NO_x	3.96	17.34
		PM	0.74	3.23
		PM_{10}	0.74	3.23
		$PM_{2.5}$	0.74	3.23
		SO_2	1.52	4.60
		VOC	0.53	2.34
		H_2S	0.02	0.05
115	HDS Heaters	CO	8.08	32.91
		NH_3	0.05	0.22

Emission Sources - Maximum Allowable Emission Rates

		NO_x	9.70	42.07
		PM	1.20	5.22
		PM_{10}	1.20	5.22
		$PM_{2.5}$	1.20	5.22
		SO_2	2.49	7.45
		VOC	0.87	3.78
115	HDS Heaters	CO	8.08	32.91
		NH_3	0.05	0.22
		NO_x	9.70	42.07
		PM	1.20	5.22
		PM_{10}	1.20	5.22
		$PM_{2.5}$	1.20	5.22
		SO_2	2.49	7.45
		VOC	0.87	3.78
116	Heater - HDS Pre-Heater (12-H-02)	CO	0.31	1.10
		NH_3	<0.01	0.02
		NO_x	2.36	8.28
		PM	0.15	0.51
		PM_{10}	0.15	0.51
		$PM_{2.5}$	0.15	0.51
		SO_2	0.30	0.73
		VOC	0.11	0.37
118	Hydrogen Reformer Heater	CO	58.51	220.73
		NH_3	0.37	1.52
		NO_x	70.21	284.40
		PM	8.72	35.80
		PM_{10}	8.72	35.80
		$PM_{2.5}$	8.72	35.80
		SO_2	44.53	122.64

Emission Sources - Maximum Allowable Emission Rates

		VOC	9.95	25.91
153	Heater - HR Boiler (30-B-02)	CO	8.46	28.94
		NH_3	0.09	0.33
		NO_x	22.56	82.34
		PM	2.10	5.51
		PM_{10}	2.10	5.51
		$PM_{2.5}$	2.10	5.51
		SO_2	4.34	10.66
		VOC	1.52	3.99
30-B-04	Boiler 30-B-04	CO	19.84	48.14
		NH_3	2.41	5.86
		NO_x	8.25	20.02
		PM	4.10	9.95
		PM_{10}	4.10	9.95
		$PM_{2.5}$	4.10	9.95
		SO_2	8.65	14.47
		VOC	2.97	7.20
30-B-04MSS	Boiler 30-B-04	CO	198.55	3.57
		NO_x	55.00	0.99
117	Heater - Alky Frac. Reb. (31-H-01)	CO	2.51	8.83
		NH_3	0.05	0.17
		NO_x	5.64	19.86
		PM	1.17	4.11
		PM_{10}	1.17	4.11
		$PM_{2.5}$	1.17	4.11
		SO_2	2.41	5.86
		VOC	0.85	2.97
120	Heater - Butamer Heater (36-H-01)	CO	0.27	0.98
		NH_3	<0.01	0.02

Emission Sources - Maximum Allowable Emission Rates

		NO_x	2.00	4.30
		PM	0.12	0.26
		PM_{10}	0.12	0.26
		$PM_{2.5}$	0.12	0.26
		SO_2	0.26	0.41
		VOC	0.09	0.19
162	Oleflex Heater	CO	19.45	69.49
		NH_3	0.12	0.49
		NO_x	23.34	65.75
		PM	2.90	11.62
		PM_{10}	2.90	11.62
		$PM_{2.5}$	2.90	11.62
		SO_2	5.99	16.57
		VOC	2.10	8.41
119	Heater - Sulften Heater (46-H-01)	CO	0.35	1.49
		NH_3	0.01	0.03
		NO_x	2.62	5.21
		PM	0.16	0.32
		PM_{10}	0.16	0.32
		$PM_{2.5}$	0.16	0.32
		SO_2	0.34	0.63
		VOC	0.12	0.24
150	HCU Heater	CO	6.10	24.38
		NH_3	0.06	0.26
		NO_x	12.19	48.76
		PM	1.51	6.06
		PM_{10}	1.51	6.06
		$PM_{2.5}$	1.51	6.06
		SO_2	3.13	8.63

Emission Sources - Maximum Allowable Emission Rates

		VOC	1.10	4.38
151	Heater - NHU Heater (48-H-01)	CO	3.05	6.68
		NH_3	0.01	0.05
		NO_x	3.90	17.08
		PM	0.29	1.27
		PM_{10}	0.29	1.27
		$PM_{2.5}$	0.29	1.27
		SO_2	0.60	1.81
		VOC	0.21	0.92
152	CRU Heater	CO	16.85	57.02
		NH_3	0.18	0.60
		NO_x	39.31	133.06
		PM	4.18	14.16
		PM_{10}	4.18	14.16
		$PM_{2.5}$	4.18	14.16
		SO_2	9.80	22.69
		VOC	3.03	10.25
172	Heater - RSU Heater (49-H-71)	CO	3.30	12.72
		NH_3	0.02	0.08
		NO_x	3.96	15.26
		PM	0.49	1.90
		PM_{10}	0.49	1.90
		$PM_{2.5}$	0.49	1.90
		SO_2	1.02	2.70
		VOC	0.36	1.37
49-H-90	Heater - C7 Splitter Reb. (49-H-90)	CO	5.32	16.82
		NH_3	0.03	0.13
		NO_x	4.25	15.46
		PM	0.79	3.01

Emission Sources - Maximum Allowable Emission Rates

		PM_{10}	0.79	3.01
		$PM_{2.5}$	0.79	3.01
		SO_2	1.64	4.29
		VOC	0.57	2.18
195	Heater - GDU Charge Heater (52-H-01)	CO	13.65	34.29
		NH_3	0.05	0.20
		NO_x	5.80	14.69
		PM	1.23	4.61
		PM_{10}	1.23	4.61
		$PM_{2.5}$	1.23	4.61
		SO_2	2.55	6.57
		VOC	0.89	3.34
1F	Crude Unit	VOC	See Subcap	See Subcap
2F	Vacuum Unit	H_2S	See Subcap	See Subcap
		VOC	See Subcap	See Subcap
4F	LEU Unit	VOC	See Subcap	See Subcap
11F	Desalter Unit	VOC	See Subcap	See Subcap
12F	HDS Unit	H_2S	See Subcap	See Subcap
		VOC	See Subcap	See Subcap
13F	H_2 Reformer	VOC	See Subcap	See Subcap
18F	LEU -2	VOC	See Subcap	See Subcap
20F	LRU	VOC	See Subcap	See Subcap
21/22F	HOC	H_2S	See Subcap	See Subcap
		VOC	See Subcap	See Subcap
30F	Boiler House	VOC	See Subcap	See Subcap
07F	#07 BUP Flare	VOC	See Subcap	See Subcap
31F	Alky Unit	H_2S	See Subcap	See Subcap
		HF	0.52	2.30
		VOC	See Subcap	See Subcap

Emission Sources - Maximum Allowable Emission Rates

36F	Butamer Unit	VOC	See Subcap	See Subcap
37F	Iso-Octene	VOC	See Subcap	See Subcap
38F	Oleflex Unit	VOC	See Subcap	See Subcap
46-24F	SULF-10 Fugitives (5)	H_2S	See Subcap	See Subcap
		VOC	See Subcap	See Subcap
41F	SRU Unit Fugitives (5)	H_2S	See Subcap	See Subcap
		VOC	See Subcap	See Subcap
47F	HCU Unit	H_2S	See Subcap	See Subcap
		VOC	See Subcap	See Subcap
47PSA	PSA Unit	VOC	See Subcap	See Subcap
48F	NHT Unit	H_2S	See Subcap	See Subcap
		VOC	See Subcap	See Subcap
49F	CRU Unit	VOC	See Subcap	See Subcap
175	XFU/RFU/C7Split Unit	VOC	See Subcap	See Subcap
52F	GDU Unit	VOC	See Subcap	See Subcap
DOCKS	DK-Docks	VOC	See Subcap	See Subcap
08F	#08FLR/Day Tanks	VOC	See Subcap	See Subcap
LPG STGF	LPG STORAGE	VOC	See Subcap	See Subcap
MVRUF	MVRU	VOC	See Subcap	See Subcap
TERM-F	#TM-Terminal	VOC	See Subcap	See Subcap
TRKRACKFUG	TRUCK RACK (5)	VOC	See Subcap	See Subcap
83F	Wastewater Treatment Plant	VOC	See Subcap	See Subcap
54F	Selective Hydrogenation Unit	VOC	See Subcap	See Subcap
42F	Sour Water Stripper	H_2S	See Subcap	See Subcap
		VOC	See Subcap	See Subcap
##F	Selective Hydrogenation Unit	VOC	See Subcap	See Subcap
##F	LPG Gas Plant	VOC	See Subcap	See Subcap
##F	Boiler 30-B-05	VOC	See Subcap	See Subcap
168	Oleflex CCR	Cl_2	<0.01	0.04

Emission Sources - Maximum Allowable Emission Rates

		H_2SO_4	<0.01	0.01
		HCl	0.06	0.28
		SO_2	0.04	0.19
69	Tank - 9	VOC	3.10	0.49
122	Cooling Tower - HOC	PM	3.54	13.17
		PM_{10}	3.36	12.52
		$PM_{2.5}$	0.53	1.96
		VOC	5.67	21.09
123	Cooling Tower - Alky	PM	0.71	2.00
		PM_{10}	0.70	1.98
		$PM_{2.5}$	0.19	0.55
		VOC	1.26	3.55
167-CT	Cooling Tower - BUP	PM	4.52	19.26
		PM_{10}	4.30	18.33
		$PM_{2.5}$	0.67	2.88
		VOC	1.47	6.27
1CT	Cooling Tower - Crude	PM	0.34	1.13
		PM_{10}	0.34	1.11
		$PM_{2.5}$	0.06	0.21
		VOC	0.17	0.55
16-P-04	Engine - 16-P-04	CO	2.20	0.06
		NO_x	8.00	0.21
		PM	0.73	0.02
		PM_{10}	0.73	0.02
		$PM_{2.5}$	0.73	0.02
		SO_2	0.68	0.02
		VOC	0.83	0.02
16-P-07	Engine - 16-P-07	CO	2.67	0.04
		NO_x	9.69	0.15

Emission Sources - Maximum Allowable Emission Rates

		PM	0.88	0.01
		PM_{10}	0.88	0.01
		$PM_{2.5}$	0.88	0.01
		SO_2	0.82	0.01
		VOC	1.01	0.02
16-P-11	Engine - 16-P-11	CO	0.80	0.02
		NO_x	3.32	0.09
		PM	0.11	<0.01
		PM_{10}	0.11	<0.01
		$PM_{2.5}$	0.11	<0.01
		SO_2	0.10	<0.01
		VOC	0.12	<0.01
16-P-12	Engine - 16-P-12	CO	0.80	0.02
		NO_x	3.32	0.09
		PM	0.11	<0.01
		PM_{10}	0.11	<0.01
		$PM_{2.5}$	0.11	<0.01
		SO_2	0.10	<0.01
		VOC	0.12	<0.01
16-P-13	Engine - 16-P-13	CO	0.80	0.02
		NO_x	3.32	0.09
		PM	0.11	<0.01
		PM_{10}	0.11	<0.01
		$PM_{2.5}$	0.11	<0.01
		SO_2	0.10	<0.01
		VOC	0.12	<0.01
16-P-14	Engine - 16-P-14	CO	0.80	0.02
		NO_x	3.32	0.09
		PM	0.11	<0.01

Emission Sources - Maximum Allowable Emission Rates

		PM_{10}	0.11	<0.01
		$PM_{2.5}$	0.11	<0.01
		SO_2	0.10	<0.01
		VOC	0.12	<0.01
126	Main Flare	CO	See Subcap	See Subcap
		H_2S	See Subcap	See Subcap
		NO_x	See Subcap	See Subcap
		SO_2	See Subcap	See Subcap
		VOC	See Subcap	See Subcap
158	Ground Flare	CO	See Subcap	See Subcap
		H_2S	See Subcap	See Subcap
		NO_x	See Subcap	See Subcap
		SO_2	See Subcap	See Subcap
		VOC	See Subcap	See Subcap
127	BUP Flare	CO	See Subcap	See Subcap
		H_2S	See Subcap	See Subcap
		NO_x	See Subcap	See Subcap
		SO_2	See Subcap	See Subcap
		VOC	See Subcap	See Subcap
135	Acid Gas Flare (pilot only)	CO	See Subcap	See Subcap
		H_2S	See Subcap	See Subcap
		NO_x	See Subcap	See Subcap
		SO_2	See Subcap	See Subcap
		VOC	See Subcap	See Subcap
Various	Flares Subcap	CO	113.27	121.03
		H_2S	0.04	0.11
		NO_x	23.04	20.77
		SO_2	3.55	10.43
		VOC	291.17	63.51

Emission Sources - Maximum Allowable Emission Rates

31	Loading - Heavy Oil	VOC	14.96	4.72
SHIP FUG	Loading - Ships Fugitives (5)	VOC	237.46	91.74
VRU	Loading - MVRU	VOC	61.33	23.13
TRUCKFUG	Loading - Truck Fugitives (5)	VOC	11.86	15.87
TRUCKCOMB	Loading - Truck Combustor	CO	15.28	22.76
		NO_x	7.64	11.38
		SO_2	0.02	0.03
		VOC	8.18	13.61
		PM	0.23	0.34
		PM_{10}	0.23	0.34
		$PM_{2.5}$	0.23	0.34
AE-49601A/B	AE-49601A/B Analyzer Vent	VOC	0.01	0.01
AE-49900A/B	AE-49900A/B Analyzer Vent	VOC	0.01	0.01
AE-49901A/B	AE-49901A/B Analyzer Vent	VOC	0.01	0.01
121 (6)	HOC Belco Scrubber	CO	958.40	1559.15
		HCN	80.47	320.40
		H_2SO_4	49.00	199.30
		NO_x	384.12	473.81
		PM	140.00	569.40
		PM_{10}	140.00	569.40
		$PM_{2.5}$	140.00	569.40
		SO_2	223.08	437.03
		VOC	30.42	123.79
		H_2S	<0.01	<0.01
		NH_3	4.84	17.88
121 (6)	SRU Incinerators Cap	CO	220.75	678.85
		H_2S	5.82	18.73
		NO_x	54.64	239.31
		PM	24.72	98.38

Emission Sources - Maximum Allowable Emission Rates

		PM_{10}	24.72	98.38
		$PM_{2.5}$	24.72	98.38
		SO_2	191.32	837.99
		VOC	0.96	3.46
121 (6)	Temporary SRU Stack	CO	10.04	7.23
		H_2S	0.047	0.03
		NO_x	1.233	0.72
		PM	1.205	0.87
		PM_{10}	1.205	0.87
		$PM_{2.5}$	1.205	0.87
		SO_2	13.816	9.95
FUG-CAP	Fugitives Subcap (5)	VOC	112.45	492.32
		H_2S	0.59	2.58
		NH_3	0.01	0.06
155	CRU CCR	HCl	0.07	0.29
118	SMR Condenser Vent	VOC	3.64	15.94
21 BH	MAGNACAT Unit	PM	0.18	0.60
		PM_{10}	0.18	0.60
		$PM_{2.5}$	0.18	0.60
187	Tank 25	H_2S	0.02	0.04
		NH_3	<0.01	<0.01
		VOC	1.43	5.33
83-P-136A	Engine 83-P-136A-EN	CO	2.48	0.06
		NO_x	7.43	0.19
		PM	0.38	<0.01
		PM_{10}	0.38	<0.01
		$PM_{2.5}$	0.38	<0.01
		SO_2	0.88	0.02
		VOC	7.43	0.19

Emission Sources - Maximum Allowable Emission Rates

83-P-136B	Engine 83-P-136B-EN	CO	2.48	0.06
		NO_x	7.43	0.19
		PM	0.38	<0.01
		PM_{10}	0.38	<0.01
		$PM_{2.5}$	0.38	<0.01
		SO_2	0.88	0.02
		VOC	7.43	0.19
WWTP-OWS	WW collection system	VOC	8.62	37.77
83-TK-26	Tank 26	VOC	0.12	0.45
83-TK-159	Tank 159	VOC	0.15	0.39
83-TK-160	Tank 160	VOC	0.15	0.39
83-V-97	Tank 97	VOC	0.18	0.40
83-V-58	Tank 58	VOC	0.11	0.44
83-V-59	Tank 59	VOC	0.11	0.44
83-TK-162	Tank 162	VOC	0.39	1.77
83-TK-155	Tank 155	VOC	0.39	1.77
124	API/DGF Combustor	CO	1.65	7.22
		NO_x	0.45	1.76
		SO_2	0.03	0.13
		VOC	2.94	12.88
83-TK-23	Equalization Tank	VOC	0.81	3.51
83-TK27	Bio Oxidation Reactor Tank	VOC	0.51	2.22
WWTP-AERB	Aeration Basin	VOC	0.25	1.09
WWTP-CLRF	Clarifier	VOC	<0.01	0.04
WWTP-SLB	Saline Basin	VOC	<0.01	<0.01
01-01	Crude/Vacuum Unit Pump Alley	VOC	<0.01	0.02
01-02	North Side of Vacuum Unit	VOC	<0.01	0.02
01-03	North Side of Vacuum Unit	VOC	<0.01	0.02
01-04	Northwest Side of Vacuum Unit - Main Sump	VOC	<0.01	0.03

Emission Sources - Maximum Allowable Emission Rates

03-01	N of Tanks 156/161	VOC	0.02	0.08
98-02	WP MSAT Rail Rack	VOC	0.02	0.08
11-01	Desalter Pump Alley	VOC	<0.01	0.02
41-01	North of 43-TK-08 (Amine Tank)	VOC	<0.01	0.02
41-02	W of 41-V-05 (Acid Gas K.O. Drum)	VOC	<0.01	0.02
49-01	Northwest of XFU	VOC	<0.01	0.02
49-02	North Side of NHT (Unit 48)	VOC	<0.01	0.02
49-03	NHT (Unit 48) Pump Alley	VOC	<0.01	0.02
50-01	East of Tank 62	VOC	<0.01	0.02
52-01	NW of GDU MCC Room	VOC	<0.01	0.02
70-01	East of Tank 55	VOC	<0.01	0.02
70-02	Northwest of Tank 106	VOC	<0.01	0.02
70-03	West of Tank 94 (S&D Main Sump)	VOC	<0.01	0.03
72-01	East of Tank 111	VOC	<0.01	0.02
73-01	North of Tank 152 (Terminal 2A)	VOC	<0.01	0.02
73-02	Between TK 8 & TK 164 (Terminal 2)	VOC	<0.01	0.02
83-01	WWT (Hydroblast Pad)	VOC	0.02	0.07
83-02	WWT (Desalter Lift Station)	VOC	0.01	0.05
83-03	WWT (East of KOH Treater)	VOC	0.02	0.07
83-04	WWT (Northeast of Tank 159)	VOC	<0.01	0.02
83-05	WWT (North Lift Station)	VOC	<0.01	0.03
83-06	WWT (North of V-68)	VOC	<0.01	0.02
83-07	WWT (South of V-55)	VOC	<0.01	0.02
83-09	WWT (BSRP)	VOC	<0.01	0.02
83-10	WWT 83-V-99 (Diversion Box)	VOC	0.02	0.07
83-12	WWT 83-V-28 (SE of Catalyst Pad)	VOC	0.02	0.07
V-201	WP MSAT Rail Rack	VOC	0.51	2.23

Emission Sources - Maximum Allowable Emission Rates

124a	WP WWT API Combustor Backup	VOC	0.02	0.08
16-V-11	FWP 16-P-11 Diesel Tank	VOC	0.03	<0.01
16-V-12	FWP 16-P-12 Diesel Tank	VOC	0.03	<0.01
16-V-13	FWP 16-P-13 Diesel Tank	VOC	0.03	<0.01
16-V-14	FWP 16-P-14 Diesel Tank	VOC	0.03	<0.01
FWP-FUG	Firewater Pump Engine Fugitives	VOC	0.06	0.26
30-B-05	Boiler 30-B-05	CO	33.48	70.84
		NH_3	2.18	8.68
		NO_x	7.16	30.14
		PM	3.56	14.16
		PM_{10}	3.56	14.16
		$PM_{2.5}$	3.56	14.16
		SO_2	11.56	38.06
		H_2S	<0.01	<0.01
		VOC	2.81	11.30
30-B-05	Boiler 30-B-05 (MSS)	NO_x	71.61	--
HOC-PP-CT	Cooling Tower-Propylene Project	PM	0.78	3.42
		PM_{10}	0.18	0.81
		$PM_{2.5}$	<0.01	0.01
		VOC	1.09	4.78
XX-01	HOC PP Gas Plant CAS	VOC	<0.01	0.02

Emission Sources - Maximum Allowable Emission Rates

(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) Cl_2 - chlorine
CO - carbon monoxide
HCN - hydrogen cyanide
HF - hydrogen fluoride
H_2S - hydrogen sulfide
H_2SO_4 - sulfuric acid
MSS - Maintenance, Startup and Shutdown
NH_3 - ammonia
NO_x - total oxides of nitrogen
PM - total particulate matter, suspended in the atmosphere, including PM_{10} and $PM_{2.5}$, as represented
PM_{10} - total particulate matter equal to or less than 10 microns in diameter, including $PM_{2.5}$, as represented
$PM_{2.5}$ - particulate matter equal to or less than 2.5 microns in diameter
SO_2 - sulfur dioxide
VOC - volatile organic compounds as defined in Title 30 Texas Administrative Code § 101.1
(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.

Date: TBD

Emission Sources - Maximum Allowable Emission Rates

Permit Number GHGPSDTX211

This table lists the maximum allowable emission rates of greenhouse gas (GHG) emissions, as defined in Title 30 Texas Administrative Code § 101.1, for all sources of GHG air contaminants on the applicant's property that are authorized 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 authorized by this permit.

Air Contaminants Data

Emission Point No. (1)	**Source Name (2)**	**Air Contaminant Name (3)**	**Emission Rates**
			TPY (4)
121	HOC Belco Scrubber	CO_2 (5)	2,451,673.00
		CH_4 (5)	72.08
		N_2O (5)	14.42
		CO_2e	2,457,772.00
Various (FUG-CAP)	Fugitives Subcap	CH_4 (5)	3.59
		CO_2e	90.00
30-B-05	Boiler 30-B-05	CO_2 (5)	222,364.00
		CH_4 (5)	4.19
		N_2O (5)	0.42
		CO_2e	22,594.00

(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) CO_2 - carbon dioxide
N_2O - nitrous oxide
CH_4 - methane
CO_2e - carbon dioxide equivalents based on the following Global Warming Potentials (1/2015):
CO_2 (1), N_2O (298), CH_4(25)
(4) Compliance with annual emission limits (tons per year) is based on a 12-month rolling period. These rates include emissions from maintenance, startup, and shutdown.
(5) Emission rate is given for informational purposes only and does not constitute enforceable limit.

Date: TBD

From:	Marquard, Meagan
To:	Cara Hill
Cc:	Arnosky, David; Almaraz, Aimee; Joe Kupper
Subject:	RE: Permit 38754 Valero HOC Project Draft Permit - Valero Response
Date:	Thursday, April 21, 2022 8:56:51 AM
Attachments:	CND - 38754 Valero (Amendment, 333877)v1-VALERO COMMENTS.docx

Good Morning Cara –

Attached, please find the revised and corrected marked up conditions. Please ignore the previously sent version from 4/20/22. Thank you!

Meagan Marquard
Superintendent Environmental
Valero - Bill Greehey Refineries
Office: (361) 299-8913
Mobile: (520) 249-5349

From: Marquard, Meagan <>
Sent: Wednesday, April 20, 2022 5:33 PM
To: 'Cara Hill' <Cara.Hill@Tceq.Texas.Gov>
Cc: Arnosky, David <David.Arnosky@valero.com>; Almaraz, Aimee <Aimee.Almaraz@valero.com>; Joe Kupper <Joe.Kupper@trinityconsultants.com>
Subject: RE: Permit 38754 Valero HOC Project Draft Permit - Valero Response

Good Afternoon Cara,

In our last set of comments, we missed two references to the new Propylene cooling tower in SC 30. "HOC" should be changed to "Propylene" as shown in the attached markup of the conditions. A marked up MAERT is attached, with a revision to the EPN for the new HOC Gas Plant CAS. A revised PI-1 Workbook is attached with the FIN/EPNs for the new process fugitive areas included. Please note that the emissions for these new FINs are included the fugitive cap, EPN:FUG-CAP.

Please let me know if you have any questions or concerns. Thank you

Meagan Marquard
Superintendent Environmental
Valero - Bill Greehey Refineries
Office: (361) 299-8913
Mobile: (520) 249-5349

From: Cara Hill <Cara.Hill@Tceq.Texas.Gov>

Sent: Monday, April 18, 2022 10:02 AM
To: Marquard, Meagan <Meagan.Marquard@valero.com>
Cc: Arnosky, David <David.Arnosky@valero.com>; Almaraz, Aimee <Aimee.Almaraz@valero.com>; Joe Kupper <Joe.Kupper@trinityconsultants.com>
Subject: RE: Permit 38754 Valero HOC Project Draft Permit - Valero Response

Hi Megan,

I've attached the updated draft permit. I agreed with the proposed changes, except where I added a comment on the "##F" EPNs. I couldn't find these in the workbook and needed clarification as to what they are.

Thanks,
Cara

How is our customer service? www.tceq.texas.gov/customersurvey

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From: Marquard, Meagan <Meagan.Marquard@valero.com>
Sent: Thursday, April 7, 2022 2:57 PM
To: Cara Hill <Cara.Hill@Tceq.Texas.Gov>
Cc: R6AirPermitsTX@epa.gov; Kelly Ruble <kelly.ruble@tceq.texas.gov>; Arnosky, David <David.Arnosky@valero.com>; Almaraz, Aimee <Aimee.Almaraz@valero.com>; Joe Kupper <Joe.Kupper@trinityconsultants.com>
Subject: Permit 38754 Valero HOC Project Draft Permit - Valero Response

Cara,

Valero is submitting comments on the draft special conditions and MAERT. Attached for your convenience are marked up conditions and MAERT. The proposed changes are summarized as follows:

1. The introductory paragraph for SC 30 was revised to clarify that the excepted cooling tower subject to paragraph E is the new cooling tower associated with the HOC Reconfiguration project.

2. For SC 36.C.1. Valero does not believe the requirement to perform sampling at maximum flow rate is appropriate. The TCEQ boilerplate conditions for carbon adsorption systems (CAS) contains the following text: "*The CAS shall be sampled every (frequency see note 1) to determine breakthrough of volatile organic compounds (VOC). The sampling point shall be at the outlet of the initial canister but before the inlet to the second or final polishing canister. Sampling shall be done during (identify operating conditions reflecting maximum emission venting to the CAS such as during loading, tank filling, process venting).*" .

   Based on the examples given in the boilerplate, it appears that the intent was to cover periods when discrete events occur such that the flow rate to the CAS is higher than normal. Since the wastewater from the new processing units routed to the new lift station are expected to a generally constant flow rate, revised language is proposed to specify sampling must at performed during wastewater generation and routine operations.

3. The increased MSS emissions represented on Table A-8 of the application is for additional hours of MSS related to the HOC. Therefore, the number of hours in SC 60. B. (1) should be increased the additional 36 hours, such that the existing 50 hours is now 86 hours.
4. As discussed in Section 8.2.2, the project will cause the HOC to become an "affected unit" and subject to NSPS Ja. Therefore, a new item has been added to SC 75 to specify that the HOC is subject NSPS Ja upon startup of the reconfigured HOC. The existing reference to NSPS J is still appropriate for the permit for operation prior to the modification. Reference to the new boiler has also been added to SC 75(A)(2) for NSPS Ja applicability.

5. Language has been added to SC 82 to clarify when GHG calculations begin and to what sources are subject to the requirement.

6. A new SC 84 is proposed in order to codify the thermal efficiency represented for the new boiler and address monitoring requirements to ensure compliance.

7. Clarifying descriptions and new project units have been added to the table in Attachment 1. Please note that the new sour water stripper is associated the existing sour water stripper; therefore, is included with EPN 42F.

8. Changes to the MAERT
    a. The pending amendment to Permit 38754 (Project 326326) has completed second public notice and issuance is expected during April. The attached PI-1 Workbook has been revised to reflect the emission limits for the MAERT that will be issued for Project 326326. Revised Tables A-4 (Fugitive Speciation) and A-10 (MSS Caps) are attached and include the revised existing MAERT limits that match the pending permit. As a result of these changes updated Tables 1-1 and 7-1 are also attached. The new limits have been shown in the marked up MAERT.

    b. Added line items for three EPNS for new units being constructed for the project.

    c. Revised VOC, SO2, and H2S emission rates for EPNs 121 and 30-B-05 to include emissions from the proposed MEROX vent.

    d. Add "-Propylene Project" to the description to EPN HOC-PP-CT. In addition, the new cooling tower name has been added to the revised PI-1.

In addition, Valero would like to make the following changes to the permit application:

1. Valero would like to clarify that the new boiler (EPN 30-B-05) will be capable of firing natural gas. No updates to the emission calculations since firing natural gas results in equal or lower emission rates than firing refinery fuel gas.

2. In the initial project planning cat naphtha was proposed to be routed directly from the

existing HOC to the new secondary reactor-riser; however, the project now calls for the cat naphtha to be routed to an intermediate storage tank. The tank will be an existing tank, Tank 70TK51 (EPN TK-51). Tank 70TK51 is authorized by Permit 135590 and Valero will authorize the change of service to cat naphtha as required in a separate permitting or PBR action. However the increased VOC emissions are being accounted for in updated PSD emission tables and health effect modeling will be provided in a separate submittal. The attached Tables A-12 and A-13 contain emission calculations for Tank 70TK51 storing cat naphtha. Revised PSD tables for VOC are also attached. Please note that the HOC PP Gas Plant CAS, inadvertently left off the Table 2F, has been added.

Meagan Marquard
Superintendent Environmental
Valero - Bill Greehey Refineries
Office: (361) 299-8913
Mobile: (520) 249-5349

Special Conditions

Permit Numbers 38754, PSDTX324M15, and GHGPSDTX211

1. This permit authorizes emissions only from those points listed in the attached table entitled "Emission Sources - Maximum Allowable Emission Rates" (MAERT), and the facilities covered by this permit are authorized to emit subject to the emission rate limits on that table and other operating requirements specified in the special conditions. **(TBD)**.

Throughput Limitations

2. Tank truck loading operations are limited to the following liquids and maximum loading rates: **(12/19)**

Chemical	Hourly Rate (gal/hr)
Kerosene	30,000
Diesel	60,000
Gasoline	98,000
Residual Oils	31,920

3. Marine loading shall comply with the following:

   A. Marine loading with emissions that are controlled with the marine vapor recovery unit (VRU) shall be limited to a maximum of 35,000 bbl/hr. The liquids that are loaded at this rate and controlled with the VRU at this facility are limited to gasoline, natural gasoline, naphtha, cat gasoline, alkylate, and reformate.

   The BT concentrate, mixed xylenes, heartcut, and toluene concentrate may also be loaded into marine vessels with emissions controlled by the VRU, at a rate not to exceed 5,000 bbl/hr. Only one of these products may be loaded at a time.

   B. Marine loading with uncontrolled vapor emissions shall be limited to the following services at the indicated rates:

Liquid	Barge bbl/hr	Ship bbl/hr
Diesel*	8,500	12,500
Kerosene*	5,000	12,500
Gas Oil	6,000	20,000
ATB	6,000	20,000
VTB	6,000	20,000
Slurry	6,000	0
Bunker	6,000	20,000

*Diesel and kerosene shall not be loaded onto ships and barges concurrently.

Loading Controls

4. Operation without visible liquid leaks or spills shall be maintained at all loading or unloading facilities regardless of vapor pressure. This does not apply to momentary dripping associated with the initial connection or disconnection of fittings. Sustained dripping from fittings during loading or unloading operations is not permitted. Any liquid spill that occurs during loading or unloading activities shall be cleaned up immediately to minimize air emissions.

5. Emissions resulting from the tank truck loading of gasoline shall be routed to the Vapor Combustor (Emission Point No. [EPN] TRUCKCOMB) for final abatement. The volatile organic compounds (VOC) emissions from EPN TRUCKCOMB shall not exceed 10 milligrams per liter of gasoline loaded. The vapor combustor combustion temperature shall be maintained at or above 1400˚F (based on a five-minute averaging period) when loading vapors are routed to it. This temperature shall be recorded during loading operations and the records maintained on-site. The vapor combustor operating temperature may be lowered if it has been tested at the lower temperature in accordance with Special Condition (SC) No. 39 to demonstrate compliance with this emission limit. Records associated with this permit condition shall be kept for at least five years. The Vapor Combustion Unit (EPN TRUCKCOMB) shall comply with the following. **(12/19)**

    A. The vapor combustor shall be operated with no visible emissions and have a constant pilot flame during all times waste gas could be directed to it. The temperature of the combustion chamber shall be continuously monitored when loading vapors are routed to it. The time, date, and duration of any drop of temperature below 1400°F shall be recorded. Each monitoring device shall be accurate to, and shall be calibrated or have a calibration check performed at a frequency in accordance with, the manufacturer's specifications.

    B. Pilot and make-up fuel for the vapor combustor shall be pipeline-quality, sweet natural gas containing no more than 5 grains of total sulfur per 100 dry standard cubic feet.

    C. The control device shall not have a bypass. If there is a bypass for the control device, comply with either of the following requirements:

        (1) Install a flow indicator that records and verifies zero flow at least once every fifteen minutes immediately downstream of each valve that if opened would allow a vent stream to bypass the control device and be emitted, either directly or indirectly, to the atmosphere; or

        (2) Once a month, inspect the valves, verifying that the position of the valves and the condition of the car seals prevent flow out the bypass.

        A bypass does not include authorized analyzer vents, highpoint bleeder vents, low point drains, or rupture discs upstream of pressure relief valves if the pressure between the disc and relief valve is monitored and recorded at least weekly. A deviation shall be reported if the monitoring or inspections indicate bypass of the control device when it is required to be in service.

6. All tank trucks loading gasoline at this facility shall be leak-tight tested a minimum of once a year using the method described in the U.S. Environmental Protection Agency (EPA) regulations in Title 40 Code of Federal Regulations Part 63 (40 CFR Part 63), Subparts A and R, National Emission Standards for Gasoline Distribution Facilities (Bulk Gasoline Terminals and Pipeline Breakout Stations). **(12/19)**

7. All tank truck loading of residual oils, kerosene and diesel shall be conducted using a submerged fill pipe or using a discharge point no higher than 6 in. above the bottom of the cargo tank. **(12/19)**

8. The marine VRU shall limit VOC emissions from EPN VRU to 5 mg/l of liquid loaded.

9. All marine loading emissions of liquids with vapor pressures greater than 0.5 pound per square inch, absolute (psia) must be vented to the VRU.

10. A vacuum of at least one-inch water column shall be established downstream of the dock pressure control valve prior to commencing marine loading. A vacuum shall also be established on the barge or ship being loaded if possible. The vacuum shall be maintained during loading and monitored continually or an alarm activated if the vacuum is not maintained.

11. The VRU VOC concentration as measured by the continuous emission monitor specified in SC No. 40 shall not exceed 7,621 parts per million (ppm) over any one-hour period while the marine loading emissions are being vented. If the reading exceeds this limit, marine loading shall be secured, the Texas Commission on Environmental Quality (TCEQ) Corpus Christi Regional Office notified, and the cause determined and corrected before loading resumes.

Combustion Controls

12. Flares shall be designed and operated in accordance with the following requirements: **(01/21)**

    A. The flare system(s) shall be designed such that the combined vent gas, assist air, and/or total steam to each flare meets the 40 CFR § 63.670 specifications for minimum combustion zone net heating value and maximum tip velocity at all times that emissions may be directed to the flare for more than 15 minutes. Flared gas actual exit velocity, vent gas net heating value, and flared gas combustion zone net heating value shall be determined in accordance with 40 CFR §63.670(k), §63.670(l), and §63.670(m) on a 15-minute block average and recorded at least once every 15 minutes.

       If the flare actively receives perimeter assist air, it shall be operated to meet the 40 CFR §63.670 specifications for minimum net heating value dilution parameters.

    B. The flare(s) shall be operated with pilot flame(s) present at all times vent gas may be directed to the flare(s). The pilot flame(s) shall be continuously monitored by a thermocouple, infrared monitor, or ultraviolet monitor. The time, date, and duration of any loss of pilot flame shall be recorded. Each monitoring device shall be accurate to, and shall be calibrated at a frequency in accordance with, the manufacturer's specifications.

    C. Flares shall be operated with no visible emissions except periods not to exceed a total of five minutes during any two consecutive hours, demonstrated and recorded per the requirements of §63.670(h).

    D. The permit holder shall install flow monitors that continuously measure, calculate and record the total volumetric vent stream flow rate (including waste gas, purge gas, supplemental gas, and sweep gas), and shall install a monitoring system capable of determining the concentration of individual components in the flare vent gas or the net heating value of the flare vent gas. The flow monitor sensor and analyzer sample points shall be installed in the vent stream such that the total vent stream to the flare is measured and analyzed.

If one or more gas streams that combine to comprise the total flare vent gas flow are monitored separately for net heating value and flow, the 15-minute block average net heating value shall be determined separately for each measurement location and a flow-weighted average of the gas stream net heating values shall be used to determine the 15-minute block average net heating value of the cumulative flare vent gas.

If assist air or assist steam is used, the owner or operator shall install, operate, calibrate, and maintain a monitoring system capable of continuously measuring, calculating, and recording the total volumetric flow rate of assist air and/or assist steam used with the flare.

If pre-mix assist air and/or perimeter assist are used, the owner or operator shall install, operate, calibrate, and maintain a monitoring system capable of separately measuring, calculating, and recording the volumetric flow rate of premix assist air and/or perimeter assist air used with the flare. Continuously monitoring fan speed or power and using fan curves is an acceptable method for continuously monitoring assist air flow rates.

Perimeter assist air includes all air assist except premix assist air. Premix assist air includes any air intentionally entrained in center steam.

Assist air includes premix assist air and perimeter assist air, but does not include the surrounding ambient air.

The monitors shall be calibrated or have a calibration check performed as specified in Table 13 of the appendix to 40 CFR 63, Part CC to meet the following accuracy specifications: the vent flow monitor shall be ±20 percent of flow rate at velocities ranging from 0.03 to 0.3 meters per second (0.1 to 1 feet per second) ±5 percent of flow rate at velocities greater than 0.3 meters per second (1 feet per second), all other gas flow monitors shall be ±5 percent over the normal range of flow measured or 280 liters per minute (10 cubic feet per minute) whichever is greater, temperature monitor shall be ±1 percent over the normal range of temperature measured, expressed in degrees Celsius (C), or 2.8 degrees C, whichever is greater, and pressure monitor shall be ±5 percent over the normal operating range or 0.12 kilopascals (0.5 inches of water column), whichever is greater. For purposes of this permit, a calibration check means, at a minimum, using a second device or method to verify that the monitor is accurate as specified in the permit.

Calorimeters shall have an accuracy of at least ±2% of span and be calibrated, installed, operated, and maintained in accordance with manufacturer recommendations and as specified in Table 13 of the appendix to 40 CFR 63, Part CC, to continuously measure and record the net heating value of the vent gas sent to the flare, in British thermal units/standard cubic foot of the gas.

For determination of net heating value by gas chromatograph, the minimum accuracy shall be as specified in Performance Specification 9 of Part 60, appendix B. Composition monitoring instruments shall be calibrated, installed, operated, and maintained in accordance with manufacturer recommendations and as specified in 40 CFR §63.671(e) and Table 13 of 40 CFR Pt. 63, Subpart CC. Individual component properties specified in Table 12 of Subpart CC shall apply to net heating value calculations.

E. Quality assured (or valid) data must be generated during periods that flare is operating. Loss of valid data due to periods of monitor break down, out-of-control operation (producing inaccurate data), repair, maintenance, or calibration may be exempted provided it does not exceed 5 percent of the time (in minutes) that the flare operated over the previous rolling 12-month period. The measurements missed shall be estimated using engineering judgment and the methods used recorded.

F. Hourly mass emission rates shall be determined and recorded using the monitoring data collected pursuant to paragraph D of this Special Condition and the emission factors specified in the permit application PI-1 dated March 31, 2011.

G. The Acid Gas Flare (EPN 135) is not authorized for routine emissions or for planned maintenance, startup, and shutdown (MSS) emissions.

13. The American Petroleum Institute (API) Separator Combustor shall achieve at least 98 percent destruction efficiency. The vapor combustor combustion temperature shall be maintained at or above 1600˚F (based on a five-minute averaging period) when the separator is in service. This temperature shall be recorded and the records maintained on-site. The vapor combustor operating temperature may be lowered if it has been tested at the lower temperature in accordance with SC No. 38 to demonstrate compliance with this emission limit. Records associated with this permit condition shall be kept for five years.

A back-up carbon adsorption system (CAS) is a means of control equivalent to the API Separator Combustor for compliance with the preceding paragraph of this special condition. When used as back-up control, the CAS shall meet the following requirements:

A. The CAS shall consist of 2 carbon canisters in series with adequate carbon supply for the emission control operation.

B. The CAS shall be sampled downstream on the first can and the concentration recorded at least once every hour of CAS run time to determine breakthrough of the VOC. The sampling frequency may be extended using either of the following methods:

(1) The CAS systems equipped with an upstream liquid scrubber may be sampled once every 12 hours of CAS run time to determine breakthrough.

(2) Sampling frequency may be extended to up to 30 percent of the minimum potential saturation time for a new can of carbon. The permit holder shall maintain records including the calculations performed to determine the minimum saturation time.

(3) The carbon sampling frequency may be extended to longer periods based on previous experience with carbon control of a MSS waste gas stream. The past experience must be with the same VOC, type of facility, and MSS activity. The basis for the sampling frequency shall be recorded. If breakthrough is monitored on the initial sample of the upstream can when the polishing can is put in place, a permit deviation shall be recorded.

C. The method of VOC sampling and analysis shall be by detector meeting the requirements of SC No. 52. **(02/18)**

D. Breakthrough is defined as the highest measured VOC or benzene concentration at or exceeding 100 ppmv or 5 ppmv, respectively, above background. When the condition of breakthrough of VOC from the initial saturation canister occurs, the waste gas flow shall be switched to the second canister and a fresh canister shall be placed as the new final polishing canister within twenty-four hours. In lieu of replacing canisters, the flow of waste gas may be discontinued until the canisters are switched. Sufficient new activated carbon canisters shall be available to replace spent carbon canisters such that replacements can be done in the above specified time frame.

E. Records of CAS monitoring shall include the following:

(1) Sample time and date.

(2) Monitoring results (ppmv).

(3) Canister replacement log.

F. Single canister systems are allowed if the time the carbon canister is in service is limited to no more than 30 percent of the minimum potential saturation time. The permit holder shall maintain records for these systems, including the calculations performed to determine the saturation time. The time limit on carbon canister service shall be recorded and the expiration date attached to the carbon can.

G. Liquid scrubbers may be used upstream of carbon canisters to enhance VOC capture provided such systems are closed systems and the spent absorbing solution is discharged into a closed container, vessel, or system.

14. No visible emissions are allowed from the heaters.

15. The permittee shall operate a continuous hydrogen sulfide (H_2S) monitoring instrument in the fuel feed line header for all fired units with a firing rate greater than 40 MMBtu/hr to continuously monitor a representative sample of fuel gas for H_2S content. The instrument shall be installed and operated according to the specifications set out in 40 CFR § 60.105. These gases shall have a maximum H_2S concentration of 0.054 grain per dry standard cubic foot (dscf) on an hourly average. The Vacuum Unit Heater (EPN 74) may also be fired with vacuum off-gas having a maximum H_2S concentration of 0.10 grain/dscf on an hourly average.

16. Heater, boiler, and reboiler emissions of ammonia (NH_3), carbon monoxide (CO), hydrogen sulfide (H_2S), nitrogen oxide (NO_x), Particulate matter (PM), PM ≤ 10 microns diameter (PM_{10}), PM ≤ 2.5 microns diameter ($PM_{2.5}$), and volatile organic compounds (VOC) shall meet the following specifications: **(TBD)**

EPN	Facility	NO_x 1-hr block average (lb/MMBtu)	NO_x 3-hr block average (lb/MMBtu)	NO_x daily 365 rolling average (lb/MMBtu)	NO_x Compliance Method
162	38-H-01/02/03	0.06	--	0.060	CEMS
1	Crude Heater	0.06	--	0.060	CEMS
74	Vacuum Unit Heater	0.06	0.060	--	stack test
150	47-H-01/02/03/04	0.06	0.060	--	stack test
152	49-H-01/02/03/04	0.07	--	0.070	CEMS
153	Boiler 30-B-02	--	--	0.080	CEMS
172	RSU Heater	0.06	0.060	--	stack test
49H90	C7 Splitter Reboiler	0.04	--	0.040	CEMS
114	Desalter Heater	0.040	0.040	--	stack test
115	12-H-01A/B	0.06	0.060	--	stack test
116	HDS Heavy Oil Preheater	0.12	--	--	
117	Alky Fract Reboiler	0.036	--	0.036	CEMS
118	13-H-01A/B/C	0.06	--	0.060	CEMS

EPN	Facility	NO_x 1-hr block average (lb/MMBtu)	NO_x 3-hr block average (lb/MMBtu)	NO_x daily 365 rolling average (lb/MMBtu)	NO_x Compliance Method
119	Sulften Heater	0.12	--	--	
120	Butamer Heater	0.12	--	--	
195	GD Charge Heater	0.035	--	0.035	CEMS
30-B-04	Boiler 30-B-04	0.015	--	0.015	CEMS
30-B-05	Boiler 30-B-05	0.015	--	0.015	CEMS

EPN	Facility	CO 1-hr block average
162	38-H-01/02/03	0.05 lb/MMBtu
1	Crude Heater	0.05 lb/MMBtu
74	Vacuum Unit Heater	0.05 lb/MMBtu
150	47-H-01/02/03/04	0.03 lb/MMBtu
152	49-H-01/02/03/04	0.03 lb/MMBtu
153	Boiler 30-B-02	--
172	RSU Heater	0.05 lb/MMBtu
49H90	C7 Splitter Reboiler	0.05 lb/MMBtu
114	Desalter Heater	0.037 lb/MMBtu
115	12-H-01A/B	0.05 lb/MMBtu
116	HDS Heavy Oil Preheater	0.016 lb/MMBtu
117	Alky Fract Reboiler	0.016 lb/MMBtu
118	13-H-01A/B/C	0.05 lb/MMBtu
119	Sulften Heater	0.016 lb/MMBtu
120	Butamer Heater	0.016 lb/MMBtu
195	GD Charge Heater	100 ppmv (3% O_2)
30-B-04	Boiler 30-B-04	50 ppmv (3% O_2)
30-B-05	Boiler 30-B-05	50 ppmv (3% O_2)

EPN	Facility	VOC lb/MMBtu	PM/PM_{10} $/PM_{2.5}$ lb/MMBtu
30-B-04	Boiler 30-B-04	0.0053	0.0075
119	Sulften Heater	0.0053	0.0075
30-B-05	Boiler 30-B-05	0.0053	0.0075

EPN	Facility	H_2S in fuel gas lb/MMBtu	NH_3 lb/MMBtu
30-B-04	Boiler 30-B-04	87 ppmv	10 ppmv
119	Sulften Heater	87 ppmv	10 ppmv
30-B-05	Boiler 30-B-05	87 ppmv	10 ppmv

During reduced-load operations for heaters or boilers equipped with CO CEMS, the emission limitations in the above table for CO shall not apply. Reduced-load operation means the operation of a heater or boiler at a firing rate of no greater than 50% of the maximum rated heat duty of the heater or boiler and not during planned MSS. The time and duration of each of each heater or boiler non-routine operation shall be recorded. Additionally, during each non-routine operation the rates of CO shall be calculated from a boiler or heater's CEMS data to demonstrate that MAERT emission limits are not exceeded. Records shall be maintained at the plant site for a period of five years. **(date – Project No. 326326)**

17. Heaters and boilers are prohibited from burning or combusting fuel oil. For purposes of this paragraph, fuel oil is predominately in the liquid phase at the point of combustion with a sulfur content of greater than 0.05% by weight. **(08/16)**

18. Upon request by the Executive Director of the TCEQ, the EPA, or any local air pollution control program having jurisdiction, the holder of this permit shall provide a sample and/or an analysis of the fuel(s) utilized in these facilities or shall allow air pollution control agency representatives to obtain a sample for analysis.

19. The Desalter Heater (EPN 114) shall comply with the following: **(date – Project No. 326326)**

    A. The desalter heater shall only be fired with natural gas and fuel gas and the firing rate shall not exceed 99 MMBtu/hr on an annual basis (12-month rolling period) and short-term basis.

    B. The natural gas and fuel gas shall be sampled every 6 months to determine the net heating value. Test results from the fuel supplier may be used to satisfy this requirement.

    C. The permit holder shall install and operate a fuel flow meter to measure the gas fuel usage for the desalter heater. The monitored data shall be reduced to an hourly average flow rate at least once every day, using a minimum of four equally-spaced data points from each one-hour period. The monitoring device shall be calibrated at a frequency in accordance with the manufacturer's specifications or at least annually, whichever is more frequent, and shall be accurate to within 5 percent.

    D. Quality assured (or valid) data must be generated when the desalter heater is operating. Loss of valid data due to periods of monitor break down, out-of-control operation (producing inaccurate data), repair, maintenance, or calibration may be exempted provided it does not exceed 5 percent of the time (in minutes) that the desalter heater operated over the previous rolling 12 month period. The measurements missed shall be estimated using engineering judgment and the methods used recorded.

Sulfur Recovery Units (SRUs) and HOC Scrubber

20. The coke burn-off non-sulfate particulate matter (PM) emissions may not exceed 0.57 pound per 1,000 pounds of coke burn-off. The HOC scrubber sulfuric acid mist (a subset of total PM) emissions shall not exceed 0.35 pound per 1,000 pounds of coke burn-off.

    Particulate emissions from the HOC shall not exceed one (1) pound per 1,000 pounds of coke burned (front half only according to Method 5B or 5F, as appropriate), measured as a one-hour average over three performance test runs. **(08/16)**

21. The pH of the HOC scrubber circulating caustic solution shall be continually monitored and be maintained at a level between 6.0 and 9.0 by the addition of fresh caustic solution as required. The pH shall be recorded at least hourly, and the records maintained at the plant site for a period of five years. These records shall be made available for inspection by the Executive Director of the TCEQ or his designated representative.

22. The minimum sulfur recovery efficiency for the SRU/Sulften and SRU/Scot shall be 99.8 percent. The sulfur recovery efficiency shall be determined by calculation as follows: **(01/21)**

    Efficiency = (S recovered)*(100) / (S acid gas)

    Where:

Efficiency	=	sulfur recovery efficiency, percent
S recovered	=	(S acid gas - S stack), pounds per hour (lb/hr)
S acid gas	=	sulfur in acid gas stream, lb/hr
S stack	=	sulfur in incinerator stack, lb/hr

    The sulfur recovery efficiency shall be demonstrated for each calendar day (24-hour period) by a mass balance calculation using data obtained from the incinerator stack sulfur dioxide monitor and sulfur production records. Records and copies of the compliance calculations shall be maintained.

23. Acid gas must be routed to a properly operating SRU train. All SRU trains shall normally be operated when acid gas is being produced to maintain the maximum redundant sulfur capacity. The TCEQ Regional Office shall be notified within 72 hours if any SRU train is not fully operational. The notification shall include a description of the problem, the estimated loss of capacity, actions required to correct the problem, and when the line is expected to be fully operational.

    In the event that the Sulften/Scot unit is not operating properly, immediate steps shall be taken to correct the improper operation and shift the acid gas feeds to another fully operational SRU.

24. The Scot tail gas incinerator shall be operated with no less than 3.0 percent oxygen (O_2) in the incinerator stack and at no less than 1500˚F incinerator firebox exit temperature. The incinerator shall achieve a minimum H_2S destruction efficiency of 99.9 percent or 5 parts per million by volume (ppmv) (corrected to 3 percent excess O_2) reduced sulfur compound exit concentration. If stack testing indicates that a higher temperature or O_2 concentration is necessary to obtain a minimum H_2S destruction efficiency of 99.9 percent or 5 ppmv (corrected to 3 percent excess O_2) reduced sulfur compound exit concentration, then the temperature and O_2 maintained during the stack test will become the new minimum operating limits. The O_2 and temperature requirements do not apply

when performing a stack test on the incinerator in accordance with SC No. 39. The permit holder may request that the operating limits be relaxed with a permit alteration request should stack testing indicate the required emissions control is obtained at the proposed limits.

25. In order to control opacity from the stack of EPN 121, the permittee shall maintain the liquid to the filtering modules at a pressure greater than 45 pounds per square inch (psi) and the flue gas pressure drop across the filtering modules and the cyclolabs at no less than 5 inches of water. Liquid pressure and pressure drop shall be continuously recorded and maintained at the plant site for a period of five years. These records shall be made available for inspection by the Executive Director of the TCEQ or his designated representative.

    The opacity of emissions from the Caustic Scrubber Stack (EPN 121) shall not exceed 20 percent averaged over a six-minute period as determined by a trained observer.

Control Requirements

26. The Oleflex and Naphtha Continuous Catalyst Regenerator (CCR) scrubber liquids shall be sampled at least twice daily (once per shift) for caustic inventory. The pH of the scrubbing liquids in the Oleflex CCR caustic scrubber shall be maintained at 8 pH units or greater. The caustic concentration of the Naphtha Reformer CCR shall be maintained greater than 0.41 weight percent sodium hydroxide (measured as total alkalinity). **(11/20)**

27. The caustic absorber circulation rate for the Naphtha CCR shall be a minimum of 368 gpm. The circulation rate shall be recorded at least hourly, and the records maintained at the plant site for a period of five years. These records shall be made available for inspection by the Executive Director of the TCEQ or his designated representative.

28. Storage tanks are subject to the following requirements. The control requirements specified in paragraphs A through D of this condition shall not apply (1) where the VOC has an aggregate partial pressure of less than 0.50 psia at the maximum feed temperature or 95˚F, whichever is greater, or (2) to storage tanks smaller than 25,000 gallons.

    A. An internal floating deck or roof or equivalent control shall be installed in all tanks. The floating roof shall be equipped with one of the following closure devices between the wall of the storage vessel and the edge of the internal floating roof: (1) a liquid-mounted seal, (2) two continuous seals mounted one above the other, or (3) a mechanical shoe seal.

    B. An open-top tank containing a floating roof (external floating roof tank) which uses double seal or secondary seal technology shall be an approved control alternative to an internal floating roof tank provided the primary seal consists of either a mechanical shoe seal or a liquid-mounted seal and the secondary seal is rim-mounted. A weathershield is not approvable as a secondary seal unless specifically reviewed and determined to be vapor-tight.

    C. For any tank equipped with a floating roof, the permit holder shall perform the visual inspections and seal gap measurements as specified in 40 CFR § 60.113b, Testing and Procedures (as amended at 54 FR 32973, Aug. 11, 1989), to verify fitting and seal integrity. Records shall be maintained of the dates seals were inspected and seal gap measurements made, results of inspections and measurements made (including raw data), and actions taken to correct any deficiencies noted.

D. The floating roof design shall incorporate sufficient flotation to conform to the requirements of API Code 650 dated November 1, 1998, except that an internal floating cover need not be designed to meet rainfall support requirements and the materials of construction may be steel or other materials.

E. Uninsulated tank exterior surfaces exposed to the sun shall be white or aluminum. Storage tanks must be equipped with permanent submerged fill pipes.

F. The permit holder shall maintain an emissions record which includes calculated emissions of VOC from all storage tanks during the previous calendar month and the past consecutive 12-month period. The record shall include tank identification number, control method used, tank capacity in barrels, name of the material stored, VOC molecular weight, VOC monthly average temperature in degrees Fahrenheit, VOC vapor pressure at the monthly average material temperature in psia, VOC throughput for the previous month and year-to-date. Records of VOC monthly average temperature are not required to be kept for unheated tanks which receive liquids that are at or below ambient temperatures.

Emissions for tanks shall be calculated using the TCEQ publication titled "Technical Guidance Package for Chemical Sources - Storage Tanks."

G. Floating roof tanks 23, 26, and 164 shall be equipped with a Pole Sleeve System or equivalent as required by the Storage Tank Emission Reduction Partnership Program (STERPP) Agreement with U.S. EPA, dated May 23, 2001, as listed in Appendix I and Annex A of that agreement. Storage Tank 164 was owned by the Valero Bill Greehey Refinery – West Plant at the time of STERPP Agreement execution and is currently owned by NuStar Energy LP (a non-affiliated company).

29. Non-fugitive emissions from relief valves, safety valves, or rupture discs of gases containing VOC at a concentration of greater than 1 percent are not authorized by this permit unless authorized on the maximum allowable rates table. Any releases directly to atmosphere from relief valves, safety valves, or rupture discs of gases containing VOC at a concentration greater than 1 weight percent are not consistent with good practice for minimizing emissions.

30. All cooling towers except for the Propylene cooling tower (EPN HOC-PP-CT) shall comply with the requirements of paragraphs A-D, and the Propylene cooling tower (EPN HOC-PP-CT) shall comply with the requirements of paragraph E: **(TBD)**

A. The cooling tower water shall be monitored monthly for VOC leakage from heat exchangers in accordance with the requirements of the TCEQ Sampling Procedures Manual, Appendix P (dated January 2003 or a later edition) or another air stripping method approved by the TCEQ Executive Director.

B. Cooling water VOC concentrations above 0.08 ppmw indicate faulty equipment. Equipment shall be maintained so as to minimize VOC emissions into the cooling water. Faulty equipment shall be repaired at the earliest opportunity but no later than the next scheduled shutdown of the process unit in which the leak occurs.

C. Emissions from the cooling tower are not authorized if the VOC concentration of the water returning to the cooling tower exceeds 0.80 ppmw. The VOC concentrations above 0.80 ppmw are not subject to extensions for delay of repair under this permit condition. The results of the monitoring and maintenance efforts shall be recorded.

D. Cooling water shall be sampled once a week for total dissolved solids (TDS) and once a day for conductivity. Dissolved solids in the cooling water drift are considered to be emitted as total particulate matter (PM) / PM equal to or less than 10 microns in diameter (PM_{10}) / PM equal to or less than 2.5 microns in diameter ($PM_{2.5}$). The data shall result from collection of water samples from the cooling tower feed water and represent the water being cooled in the tower. Water samples should be capped upon collection, and transferred to a laboratory area for analysis. The analysis method for TDS shall be EPA Method 160.1, ASTM D5907, and SM 2540 C [SM - 19th edition of Standard Methods for Examination of Water]. The analysis method for Conductivity shall be ASTM D1125-95A and SM2510 B. Use of an alternative method shall be approved by the TCEQ Regional Director prior to its implementation.

E. The Propylene cooling tower (EPN HOC-PP-CT) shall be operated and monitored in accordance with the following:

(1) The VOC associated with the Propylene cooling tower (EPN HOC-PP-CT) water shall be monitored monthly with an air stripping system meeting the requirements of the TCEQ Sampling Procedures Manual, Appendix P (dated January 2003 or a later edition) or an approved equivalent sampling method. The results of the monitoring, cooling water flow rate and maintenance activities on the cooling water system shall be recorded. The monitoring results and cooling water hourly mass flow rate shall be used to determine cooling tower hourly VOC emissions. The rolling 12 month cooling water emission rate shall be recorded on a monthly basis and be determined by summing the VOC emissions between VOC monitoring periods over the rolling 12 month period. The emissions between VOC monitoring periods shall be obtained by multiplying the total cooling water mass flow between cooling water monitoring periods by the higher of the two VOC monitored results.

(2) Each cooling tower shall be equipped with drift eliminators having manufacturer's design assurance of 0.001% drift or less. Drifts eliminators shall be maintained and inspected at least annually. The permit holder shall maintain records of all inspections and repairs.

(3) Total dissolved solids (TDS) shall not exceed 6,000 parts per million by weight (ppmw). Dissolved solids in the cooling water drift are considered to be emitted as PM, PM_{10}, and $PM_{2.5}$ as represented in the permit application calculations.

(4) Cooling water shall be sampled at least once per week for TDS.

(5) Cooling water sampling shall be representative of the cooling tower feed water and shall be conducted using approved methods.

(a) The analysis method for TDS shall be EPA Method 160.1, ASTM D5907, and SM 2540 C [SM - 19th edition of Standard Methods for Examination of Water]. Water samples should be capped upon collection, and transferred to a laboratory area for analysis.

(b) Alternate sampling and analysis methods may be used to comply with (5)(a) with written approval from the TCEQ Regional Director. If approved by the TCEQ Regional Director, the permit holder shall submit a permit application to incorporate the alternative sampling and analysis method into the permit within 2 months of the date of written approval.

(c) Records of all instrument calibrations and test results and process measurements used for the emission calculations shall be retained.

(6) Emission rates of PM, PM_{10} and $PM_{2.5}$ shall be calculated using the measured TDS, the design drift rate and the daily maximum and average actual cooling water circulation rate for the short term and annual average rates. Alternately, the design

maximum circulation rate may be used for all calculations. Emission records shall be updated monthly.

Fugitive Emissions Control

31. Piping, Valves, Flanges, Pumps, and Compressors in VOC Service - Intensive Directed Maintenance - 28 VHP

Except as may be provided for in the special conditions of this permit, the following requirements apply to the above-referenced equipment.

A. These conditions shall not apply (1) where the VOC has an aggregate partial pressure or vapor pressure of less than 0.044 psia at 68˚F or (2) the operating pressure is at least 5 kilopascals (0.725 psi) below ambient pressure. Equipment excluded from this condition shall be identified in a list or by one of the methods described below to be made readily available upon request.

The exempted components may be identified by one or more of the following methods:

(1) piping and instrumentation diagram (PID);
(2) a written or electronic database or electronic file;
(3) color coding;
(4) a form of weatherproof identification; or
(5) designation of exempted process unit boundaries.

B. Construction of new and reworked piping, valves, pump systems, and compressor systems shall conform to applicable American National Standards Institute (ANSI), API, American Society of Mechanical Engineers (ASME), or equivalent codes.

C. New and reworked underground process pipelines shall contain no buried valves such that fugitive emission monitoring is rendered impractical. New and reworked buried connectors shall be welded.

D. To the extent that good engineering practice will permit, new and reworked valves and piping connections shall be so located to be reasonably accessible for leak-checking during plant operation. Difficult-to-monitor and unsafe-to-monitor valves, as defined by Title 30 Texas Administrative Code Chapter 115 (30 TAC Chapter 115), shall be identified in a list to be made readily available upon request. The difficult-to-monitor and unsafe-to-monitor valves may be identified by one or more of the methods described in subparagraph A above. If an unsafe-to-monitor component is not considered safe to monitor within a calendar year, then it shall be monitored as soon as possible during safe-to-monitor times. A difficult-to-monitor component for which quarterly monitoring is specified may instead be monitored annually.

E. New and reworked piping connections shall be welded or flanged. Screwed connections are permissible only on piping smaller than two-inch diameter. Gas or hydraulic testing of the new and reworked piping connections at no less than operating pressure shall be performed prior to returning the components to service or they shall be monitored for leaks using an approved gas analyzer within 15 days of the components being returned to service. Adjustments shall be made as necessary to obtain leak-free performance. Connectors shall be inspected by visual, audible, and/or olfactory means at least weekly by operating personnel walk-through.

Each open-ended valve or line shall be equipped with an appropriately sized cap, blind flange, plug, or a second valve to seal the line. Except during sampling, both valves shall be closed. If the removal of a component for repair or replacement results in an open ended line or valve, it is exempt from the requirement to install a cap, blind flange, plug, or second valve for 72 hours. If the repair or replacement is not completed within 72 hours, the permit holder must complete either of the following actions within that time period: the line or valve must have a cap, blind flange, plug, or second valve installed; or the permit holder shall verify that there is no leakage from the open-ended line or valve. The open-ended line or valve shall be monitored on a weekly basis in accordance with the applicable permit condition for fugitive emission monitoring, except that a leak is defined as any VOC reading greater than background. Leaks must be repaired within 24 hours or a cap, blind flange, plug, or second valve must be installed on the line or valve. The results of this weekly check and any corrective actions taken shall be recorded.

F. Accessible valves shall be monitored by leak-checking for fugitive emissions at least quarterly using an approved gas analyzer. Sealless/leakless valves (including, but not limited to, welded bonnet bellows and diaphragm valves) and relief valves equipped with a rupture disc upstream or venting to a control device are not required to be monitored. For valves equipped with rupture discs, a pressure-sensing device shall be installed between the relief valve and rupture disc to monitor disc integrity. All leaking discs shall be replaced at the earliest opportunity but no later than the next process shutdown.

A check of the reading of the pressure-sensing device to verify disc integrity shall be performed weekly and recorded in the unit log or equivalent. Pressure-sensing devices that are continuously monitored with alarms are exempt from recordkeeping requirements specified in this paragraph.

The gas analyzer shall conform to requirements listed in Method 21 of 40 CFR part 60, appendix A. The gas analyzer shall be calibrated with methane. In addition, the response factor of the instrument for a specific VOC of interest shall be determined and meet the requirements of Section 8 of Method 21. If a mixture of VOCs are being monitored, the response factor shall be calculated for the average composition of the process fluid. A calculated average is not required when all of the compounds in the mixture have a response factor less than 10 using methane. If a response factor less than 10 cannot be achieved using methane, then the instrument may be calibrated with one of the VOC to be measured or any other VOC so long as the instrument has a response factor of less than 10 for each of the VOC to be measured.

Replaced components shall be re-monitored within 15 days of being placed back into VOC service.

G. Except as may be provided for in the special conditions of this permit, all pump and compressor seals shall be monitored with an approved gas analyzer at least quarterly or be equipped with a shaft sealing system that prevents or detects emissions of VOC from the seal. Seal systems designed and operated to prevent emissions or seals equipped with an automatic seal failure detection and alarm system need not be monitored. These seal systems may include (but are not limited to) dual pump seals with barrier fluid at higher pressure than process pressure, seals degassing to vent control systems kept in good working order, or seals equipped with an automatic seal failure detection and alarm system. Submerged pumps or sealless pumps (including, but not limited to, diaphragm, canned, or magnetic-driven pumps) may be used to satisfy the requirements of this condition and need not be monitored.

H. Damaged or leaking valves or connectors found to be emitting VOC in excess of 500 ppmv or found by visual inspection to be leaking (e.g., dripping process fluids) shall be tagged and replaced or repaired. Damaged or leaking pump and compressor seals found to be emitting VOC in excess of 2,000 ppmv or found by visual inspection to be leaking (e.g., dripping process fluids) shall be tagged and replaced or repaired. A first attempt to repair the leak must be made within 5 days. Records of the first attempt to repair shall be maintained.

I. Every reasonable effort shall be made to repair a leaking component, as specified in this paragraph, within 15 days after the leak is found. If the repair of a component would require a unit shutdown that would create more emissions than the repair would eliminate, the repair may be delayed until the next scheduled shutdown. All leaking components which cannot be repaired until a scheduled shutdown shall be identified for such repair by tagging within 15 days of the detection of the leak. A listing of all components that qualify for delay of repair shall be maintained on a delay of repair list. The cumulative daily emissions from all components on the delay of repair list shall be estimated by multiplying by 24 the mass emission rate for each component calculated in accordance with the instructions in 30 TAC 115.782 (c)(1)(B)(i)(II). The calculations of the cumulative daily emissions from all components on the delay of repair list shall be updated within ten days of when the latest leaking component is added to the delay of repair list. When the cumulative daily emission rate of all components on the delay of repair list times the number of days until the next scheduled unit shutdown is equal to or exceeds the total emissions from a unit shutdown as calculated in accordance with 30 TAC 115.782 (c)(1)(B)(i)(I), the TCEQ Regional Manager and any local programs shall be notified and may require early unit shutdown or other appropriate action based on the number and severity of tagged leaks awaiting shutdown. This notification shall be made within 15 days of making this determination.

J. Records of repairs shall include date of repairs, repair results, justification for delay of repairs, and corrective actions taken for all components. Records of instrument monitoring shall indicate dates and times, test methods, and instrument readings. The instrument monitoring record shall include the time that monitoring took place for no less than 95% of the instrument readings recorded. Records of physical inspections shall be noted in the operator's log or equivalent.

K. Alternative monitoring frequency schedules of 30 TAC §§ 115.352 through 115.359 or National Emission Standards for Organic Hazardous Air Pollutants, 40 CFR Part 63, Subpart H, may be used in lieu of Items F through G of this condition.

Compliance with the requirements of this condition does not assure compliance with requirements of 30 TAC Chapter 115, an applicable New Source Performance Standards (NSPS), or an applicable National Emission Standard for Hazardous Air Pollutants (NESHAPS) and does not constitute approval of alternative standards for these regulations.

32. Pump and compressor seals shall be monitored for fugitive leakage monthly rather than quarterly as specified by SC No. 31. The leak definitions, recordkeeping, and corrective actions of those conditions still apply to these components.

33. In addition to the weekly physical inspection required by Item E of SC No. 31, all accessible valve connectors in gas or vapor and light liquid service shall be monitored quarterly with an approved gas analyzer in accordance with Items F through J of SC No. 31.

In lieu of the monitoring frequency specified in the above paragraph, connectors may be monitored on a semiannual basis if the percent of connectors leaking for two consecutive quarterly monitoring periods is less than 0.5 percent.

Connectors may be monitored on an annual basis if the percent of connectors leaking for two consecutive semiannual monitoring periods is less than 0.5 percent.

If the percent of connectors leaking for any semiannual or annual monitoring period is 0.5 percent or greater, the facility shall revert to quarterly monitoring until the facility again qualifies for the alternative monitoring schedules previously outlined in the paragraph.

The percent of connectors leaking used in paragraph B shall be determined using the following formula:

(Cl + Cs) x 100/Ct = Cp

Where:

Cl = the number of connectors found leaking by the end of the monitoring period, either by Method 21 or sight, sound, and smell.

Cs = the number of connectors for which repair has been delayed and are listed on the facility shutdown log.

Ct = the total number of connectors in the facility subject to the monitoring requirements, as of the last day of the monitoring period, not including nonaccessible and unsafe-to-monitor connectors.

Cp = the percentage of leaking connectors for the monitoring period.

Process Piping, Valves, Pumps, and Compressors in H_2S and Hydrogen Fluoride (HF) Service.

34. This condition shall apply to all process streams with greater than 2 weight percent H_2S and all process streams with greater than 0.5 weight percent HF.

    A. Audio, olfactory, and visual checks for H_2S and HF leaks within the operating area shall be made once a shift. **(date – Project No. 326326)**

    B. Immediately, but no later than one hour upon detection of a leak, plant personnel shall take the following actions:

        (1) Isolate the leak.

        (2) Commence repair or replacement of the leaking component.

        (3) If immediate repair is not possible, a leak collection or containment system will be used to prevent or minimize the leak or the facility shall be shutdown in an orderly manner until repair or replacement can be made. Containment can include adjustment of bolts, fittings, packing glands, and pump or compressor seals to contain the leak.

        Records shall be maintained of all inspections, leaks noted, repairs, and replacements made. These records shall be maintained at the plant site for a period of five years and shall be made immediately available at the request of TCEQ personnel.

Wastewater Collection and Treatment

35. The wastewater collection and treatment system shall comply with the requirements of this permit and with the requirements for wastewater systems in 40 CFR Part 60, Subparts A and QQQ,

except as described in the following sentence. Components for which construction, modification, or reconstruction has not commenced after May 4, 1987, in the process units that follow, shall comply with the requirements of this permit and with the requirements of applicable State regulations, but are exempt from 40 CFR Part 60, Subparts A and QQQ.

Process Unit	
Heavy Oil Cracker	Vacuum Unit
HDS Unit	HF Alky Unit
SMR Unit	Boilerhouse
Crude Unit	SWS/Amine
SRU/Sulften	Tank Farm

36. The wastewater collection systems which are routed to a control device shall comply with the following requirements: **(TBD)**

A. Process wastewater drains shall be equipped with water seals or equivalent. Lift stations (with the exception of the HOC Gas Plant lift station), manholes, junction boxes, any other wastewater collection system components, conveyance, storage, and treatment system to the biological treatment unit shall be equipped with a closed vent system that routes all organic vapors to an API Separator Combustor or a back-up CAS. The HOC Gas Plant lift station shall be routed to the CAS (EPN CAS-HOCPP).

B. Water seals shall be checked by visual or physical inspection quarterly for indications of low water levels or other conditions that would reduce the effectiveness of water seal controls. Water seals shall be restored as necessary within 24 hours. Records shall be maintained of these inspections and of corrective actions taken.

C. The HOC Gas Plant lift station shall vent through a CAS (EPN CAS-HOCPP) consisting of at least two activated carbon canisters that are connected in series.

(1) The CAS shall be sampled every two weeks or at 30 percent of the minimum potential saturation time, whichever is soonest, to determine breakthrough of volatile organic compounds (VOC). The sampling point shall be at the outlet of the initial canister but before the inlet to the second or final polishing canister. Sampling shall be done during routine operation of the lift station when wastewater is being generated by process units.

(2) The VOC sampling and analysis shall be performed using an instrument with a flame ionization detector (FID), or a TCEQ-approved alternative detector. The instrument/FID must meet all requirements specified in Section 8.1 of EPA Method 21 (40 CFR 60, Appendix A). Sampling and analysis for VOC breakthrough shall be performed as follows:

(a) Immediately prior to performing sampling, the instrument/FID shall be calibrated with zero and span calibration gas mixtures. Zero gas shall be certified to contain less than 0.1 ppmv total hydrocarbons. Span calibration gas shall be methane at a concentration within ± 10 percent of 5 ppmv, and certified by the manufacturer to be ± 2 percent accurate. Calibration error for the zero and span calibration gas checks must be less than ± 5 percent of the span calibration gas value before sampling may be conducted.

(b) The sampling point shall be at the outlet of the initial canister but before the inlet to the second or final polishing canister. Sample ports or connections must be designed such that air leakage into the sample port does not occur during sampling.

(c) During sampling, data recording shall not begin until after two times the instrument response time. The VOC concentration shall be monitored for at least 5 minutes, recording 1-minute averages, during the maximum flow rate from the lift station.

(3) Breakthrough shall be defined as the highest 1 minute average measured VOC concentration at or exceeding 100 ppmv or benzene concentration at or exceeding 5 ppmv. When the condition of breakthrough of VOC from the initial saturation canister occurs, the waste gas flow shall be switched to the second canister and a fresh canister shall be placed as the new final polishing canister within 24 hours. Sufficient new activated carbon canisters shall be maintained at the site to replace spent carbon canisters such that replacements can be done in the above specified time frame.

(4) Records of the CAS monitoring maintained at the plant site, shall include (but are not limited to) the following:

(a) Sample time and date.

(b) Monitoring results (ppmv).

(c) Corrective action taken including the time and date of that action.

(d) Process operations occurring at the time of sampling.

(5) Alternate monitoring or sampling requirements that are equivalent or better may be approved by the TCEQ Regional Manager. Alternate requirements must be approved in writing before they can be used for compliance purposes.

37. The daily wastewater flow into the wastewater treatment plant shall be monitored and recorded. The rolling 12-month wastewater flow shall be totaled on a monthly basis.

38. The minimum mixed liquor total suspended solids (MLSS) concentration in the aeration basins on a daily average basis shall not be less than 2000 mg/L. The MLSS concentration is the arithmetic average of all samples collected during the 24-hour period. The MLSS concentrations shall be monitored and recorded daily using Method 160.2 (Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020 or Method 2540D (Standard Methods of the Examination of Water and Wastewater, 18th Edition, American Public Health Association).

Compliance Testing

39. The permit holder shall perform stack sampling and other testing as required to establish the actual pattern and quantities of air contaminants being emitted into the atmosphere from all heaters and boilers with firing rates greater than 40 MMBtu/hr, Scot Tail Gas Incinerator (EPN 121 or 121a), Sulften Tail Gas Incinerator (EPN 121 or 121a), Caustic Scrubber (EPN 121), Marine Loading VRU (EPN VRU), and Vapor Combustors (EPNs TRUCKCOMB and 124), to demonstrate compliance with the maximum allowable emissions rate table (MAERT). Sampling shall be performed

upstream and downstream of the SMR condensate stripper vent condenser to demonstrate compliance with SC No. 46. The permit holder is responsible for providing sampling and testing facilities and conducting the sampling and testing operations at his expense. Sampling shall be conducted in accordance with the appropriate procedures of the TCEQ Sampling Procedures Manual and the U.S. Environmental Protection Agency (EPA) Reference Methods. **(02/18)**

Requests to waive testing for any pollutant specified in this condition shall be submitted to the TCEQ Office of Air, Air Permits Division. Test waivers and alternate/equivalent procedure proposals for40 CFR Part 60 testing which must have EPA approval shall be submitted to the TCEQ Regional Director.

A. The appropriate TCEQ Regional Office shall be notified not less than 30 days prior to sampling.

The notice shall include:

(1) Proposed date for pretest meeting.

(2) Date sampling will occur.

(3) Name of firm conducting sampling.

(4) Type of sampling equipment to be used.

(5) Method or procedure to be used in sampling.

(6) Description of any proposed deviation from the sampling procedures specified in this permit or TCEQ/EPA sampling procedures.

(7) Procedure/parameters to be used to determine worst case emissions, such as production rate, to set operating parameters and limits to be monitored during the sampling period.

The purpose of the pretest meeting is to review the necessary sampling and testing procedures, to provide the proper data forms for recording pertinent data, and to review the format procedures for the test reports.

B. Air contaminants to be tested from sources:

(1) Air contaminants emitted from the heaters and boilers to be tested for include (but are not limited to) NO_x and CO.

(2) Air contaminants emitted from the caustic scrubber to be tested for include (but are not limited to) sulfur dioxide (SO_2), NO_x, PM (both front and back-half of the sampling train), sulfuric acid, and CO. Stack testing of the Belco Scrubber (EPN 121) shall be accomplished by temporarily routing the Sulften and Scot Tail gas to EPN 121a. The sulfuric acid mist stack sample shall be performed using both TCEQ Method 24 and EPA Method 8. The lower of the two sampling results may be used to demonstrate compliance.

(3) Air contaminants emitted from the Sulften and Scot tail gas incinerators to be tested for include (but are not limited to) SO_2, NO_x, CO, PM (both front and back half of the sampling train), and total reduced sulfur.

(4) Air contaminants emitted from the vapor combustors to be tested for include (but are not limited to) VOC, NO_x, and CO.

(5) Air contaminants to be tested for the SMR condensate stripper vent condenser include methanol.

C. Requests for additional time to perform sampling shall be submitted to the TCEQ Corpus Christi Regional Office. Additional time to comply with the applicable requirements of 40 CFR Part 60 and 40 CFR Part 61 requires the EPA approval. Sampling of air contaminants shall occur as follows:

(1) Air contaminants monitored with a CEMS as specified under SC No. 40 shall be sampled to support CEMS operation as required by that condition.

(2) Sampling of air contaminants not monitored by CEMS under SC No. 40 shall occur as follows:

(a) Within 180 days of the issuance of this permit unless the emission point had been sampled within the last 5 years.

(b) Each emission point shall be sampled within 60 days of achieving maximum operation, not to exceed 180 days after initial operation, if new burners have been installed or if an operational change has been made allowing emissions to increase more than 10 percent greater than determined by the last stack sample.

(c) Each emission point shall be sampled as may be required by the Executive Director of the TCEQ.

D. The facility shall operate at maximum production rates during stack emission testing. Primary operating parameters that enable determination of production rates shall be monitored and recorded during the stack test. Any additional parameters shall be determined at the pretest meeting and shall be stated in the sampling report. Permit conditions and parameter limits may be waived during stack testing performed under this condition if the proposed condition/parameter range is identified in the test notice specified in paragraph A and accepted by the TCEQ Regional Office. Permit allowable emissions and emission control requirements are not waived and still apply during stack testing periods.

During subsequent operations, if an operating parameter as determined in the previous paragraph is greater than that recorded during the test period, stack sampling shall be performed at the new operating conditions within 120 days. This sampling may be waived by the TCEQ Air Section Manager for the Region.

E. One copy of the final sampling report shall be forwarded to the TCEQ within 60 days after sampling is completed. Sampling reports shall comply with the attached conditions of Chapter 14 of the TCEQ Sampling Procedures Manual. The reports shall be distributed as follows:

One copy to the TCEQ Corpus Christi Regional Office.

Continuous Determination of Compliance

40. The holder of this permit shall install, calibrate, and maintain a CEMS to measure and record the in-stack concentration of VOC from the marine VRU; CO, NO_x, and O_2 from the heaters and boilers with firing rates greater than 100 MMBtu/hr; SO_2 and O_2 from the SRU/Sulften Tail Gas Incinerator (exhausts to EPN 121 or 121a); SO_2 and O_2 from the SRU/Scot Tail Gas Incinerator (exhausts to EPN 121 or 121a), and NO_x, CO, O_2, and SO_2 from the Caustic Scrubber (exhausts to EPN 121). The monitoring system shall meet the following section of Requirements for CEMS. **(02/18)**

Requirements for CEMS

A. The CEMS shall meet the design and performance specifications, pass the field tests, and meet the installation requirements and the data analysis and reporting requirements specified in the applicable Performance Specification Nos. 1 through 7, 40 CFR Part 60, Appendix B. If there are no applicable performance specifications in 40 CFR Part 60, Appendix B, contact the TCEQ Office of Air, Air Permits Division for requirements to be met.

B. Section 1 below applies to sources subject to the quality-assurance requirements of 40 CFR Part 60, Appendix F; section 2 applies to all other sources:

(1) The permit holder shall assure that the CEMS meets the applicable quality-assurance requirements specified in 40 CFR Part 60, Appendix F, Procedure 1. Relative accuracy exceedances, as specified in 40 CFR Part 60, Appendix F, § 5.2.3 and any CEMS downtime shall be reported to the appropriate TCEQ Regional Manager, and necessary corrective action shall be taken. Supplemental stack concentration measurements may be required at the discretion of the appropriate TCEQ Regional Manager.

(2) The system shall be zeroed and spanned daily, and corrective action taken when the 24-hour span drift exceeds two times the amounts specified in the applicable Performance Specification Nos. 1 through 9, 40 CFR Part 60, Appendix B, or as specified by the TCEQ if not specified in Appendix B. Zero and span is not required on weekends and plant holidays if instrument technicians are not normally scheduled on those days, unless the monitor is required by a subpart of NSPS or NESHAPS, in which case zero and span shall be done daily without exception.

Each monitor shall be quality-assured at least quarterly using Cylinder Gas Audits (CGA) in accordance with 40 CFR Part 60, Appendix F, Procedure 1, Section 5.1.2, with the following exception: a relative accuracy test audit (RATA) is not required once every four quarters (i.e., four successive quarterly CGA may be conducted). An equivalent quality-assurance method approved by the TCEQ may also be used. Successive quarterly audits shall occur no closer than two months.

All CGA exceedances of +15 percent accuracy indicate that the CEMS is out of control.

C. The monitoring data shall be reduced to hourly average concentrations at least once weekly, using a minimum of four equally-spaced data points from each one-hour period. The individual average concentrations shall be reduced to units of the permit allowable emission rate in pounds/hr at least once every week and cumulative tons per year (TPY) on a 12-month rolling average at least once every month.

D. All monitoring data and quality-assurance data shall be maintained by the source for a period of five years and shall be made available to the TCEQ Executive Director or his designated representative upon request. The data from the CEMS may, at the discretion of the TCEQ, be used to determine compliance with the conditions of this permit.

E. All cylinder gas audit exceedances of ±15 percent accuracy and any CEMS downtime associated with emissions from EPNs 121 and 121a shall be reported to the appropriate TCEQ Regional Director within three days of any downtime, and necessary corrective action shall be taken. If the CEMS downtime for a specific emission point occurs when emissions are not being routed to that stack, that time period shall not be considered reportable CEMS downtime for the purposes of this special condition. Exceedances at other emission points shall be reported in Semiannual Excess Emission Reports. Supplemental stack concentration measurements may be required at the discretion of the appropriate TCEQ Regional Director.

F. The appropriate TCEQ Regional Office shall be notified at least 30 days prior to any required RATA in order to provide them the opportunity to observe the testing.

G. Quality-assured (or valid) data must be generated when each emitting facility is operating, except during the performance of a daily zero and span check. Loss of valid data due to periods of monitor break down, out-of-control operation (producing inaccurate data), repair, maintenance, or calibration may be exempted, provided that it does not exceed 5 percent of the time (in minutes) that the facility operated over the previous rolling 12-month period. The measurements missed shall be estimated using engineering judgment and the methods used recorded. Options to increase system reliability to an acceptable value, including a redundant CEMS, may be required by the TCEQ Regional Manager.

H. This paragraph applies to the NO_x, SO_2, and O_2 CEMS on the Caustic Scrubber (exhausts to EPN 121) and to the heaters and boilers in listed in SC No. 16 with NO_x CEMS. In addition to the requirements of SC No. 40.A-G., the CEMS shall be installed, certified, calibrated, maintained and operated in accordance with the provisions of 40 CFR §60.13 which are applicable only to CEMs (excluding those provisions applicable only to continuous opacity monitoring systems) and Part 60, Appendices A and F, and the applicable performance specification test of 40 CFR Part 60, Appendix B. With respect to 40 CFR Part 60 Appendix F, in lieu of the requirements of 40 CFR Part 60, Appendix F §§5.1.1, 5.1.3 and 5.1.4, the source must conduct either a RAA or a RATA on each CEMS at least once every three (3) years. The source must also conduct CGA each calendar quarter during which a RAA or a RATA is not performed. **(02/18)**

41. Pollutant concentrations at the outlet from the Caustic Scrubber (exhausts to EPN 121) shall not exceed the following values at dry conditions, zero percent O_2:

Pollutant	**Maximum Allowable**	**Averaging Period**
SO_2	50 ppm	1.0 hour
SO_2	50 ppm	7-day rolling average **(04/16)**
SO_2	25 ppm	365-day rolling average **(04/16)**
CO	500 ppm	1.0 hour
NO_x	150 ppm	1.0 hour

Pollutant concentrations at the outlet from the SCOT Stack (EPN 121a) shall not exceed the following values at dry conditions, zero percent O_2:

Pollutant	**Maximum Allowable**	**Averaging Period**
SO_2	250 ppm	1.0 hour
CO	332 ppm	1.0 hour
NO_x	50 ppm	1.0 hour

42. The continuous monitoring data will be used to determine violations of the limitations in this permit. For purposes of enforcement, the following averaging periods shall be utilized unless otherwise specified in this permit with respect to a specific emission point and pollutant:

Pollutant	Averaging Period
SO_2	1.0 hour
CO	1.0 hour
H_2S	1.0 hour
Opacity	6.0 minutes
NO_x	1.0 hour

HF Control Measures

43. The HF detection paint shall be used on all potential fugitive sources and possible leak sites. Locations with HF detection paint shall be inspected every shift during the audio, visual, and olfactory checks required by SC No. 34. If leaks are detected, corrective action shall be taken immediately as described in SC No. 34. If there is a problem with HF sensitive paint availability, the holder of this permit shall notify the TCEQ Corpus Christi Regional Office and request additional time for painting or request alternate leak detection methods pending availability of the HF sensitive paint.

44. In the event of an HF release which may have the potential for off-site impacts, the holder of this permit shall implement the procedures outlined in the emergency response plans.

45. There shall be no overhead work in the HF process unit where equipment is being lifted over unprotected vessels or lines without first completing a safe work checklist in accordance with Occupational Safety and Health Administration Process Safety Management rules. The safe work checklist shall be used to ensure that every effort is made to minimize the potential for an accident that would result in loss of integrity of HF-containing equipment.

    The holder of this permit is required to notify the TCEQ Corpus Christi Regional Office no less than eight hours prior to conducting work over unprotected vessels or lines containing more than 5 percent by weight HF.

Miscellaneous

46. The SMR stripper vent condenser shall collect 98 percent of the methanol in the stripper vent on an hourly averaging period. The stripper exhaust gas temperature shall be maintained below that maintained during the most recent stack sample following the initial stack test.

    The condenser exhaust gas temperature shall be continuously monitored and recorded when the stripper is operating. The temperature measurement device shall reduce the temperature readings to an averaging period of six minutes or less and record it at that frequency. The temperature measurement device shall be installed, calibrated, and maintained according to accepted practice and the manufacturer's specifications. The device shall have an accuracy of the greater of ±0.75 percent of the temperature being measured expressed in degrees Celsius or ±2.5˚C.

47. Flares: BUP Flare, Main Flare and Ground Flare shall be operated in accordance with the New Source Performance Standards for Petroleum Refineries, 40 CFR Part 60 Subpart Ja. **(04/16)**

48. After December 31, 2008 the maximum allowable emission limit of NO_x from the West Plant Heavy Oil Cracker (HOC) (EPN 121) shall not exceed 37 ppmv (dry, zero percent O_2 basis) on a 365-day rolling average and shall not exceed 74 ppmv (dry, zero percent O_2 basis) on a 7-day rolling average. **(04/16)**

Maintenance, Startup, and Shutdown

49. Planned startup and shutdown emissions due to the activities identified in SC No. 50 are authorized from facilities and emission points identified in Attachment 1, Boiler 30-B-03 (EPN: 163) in Permit 20740, the Xylene Splitter Reboiler Heater 49-H-91 (EPN: 49-H-91) in Permit 20992, emission points identified in SC No. 16 in Permit 106965, and emission points identified in SC No. 25 in Permit 109543, provided the facility and emissions are compliant with the routine emission caps and SC No. 60 of this permit. **(02/14)**

50. This permit authorizes the emissions for the planned MSS activities summarized in the MSS Activity Summary (Attachment 4) attached to this permit. This permit also authorizes emissions from the following temporary facilities used to support planned MSS activities at permanent site facilities: frac tanks, containers, vacuum trucks, facilities used for painting or abrasive blasting, portable control devices identified in SC No. 61, and controlled recovery systems. Emissions from temporary facilities are authorized provided the temporary facility (a) does not remain on the plant site for more than 12 consecutive months, (b) is used solely to support planned MSS activities at the permanent site facilities listed in Attachment 1, and (c) does not operate as a replacement for an existing authorized facility.

    Attachment 2 identifies the inherently low emitting MSS activities that may be performed at the refinery. Emissions from activities identified in Attachment 2 shall be considered to be equal to the potential to emit represented in the permit application. The estimated emissions from the activities listed in Attachment 2 must be revalidated annually. This revalidation shall consist of the estimated emissions for each type of activity and the basis for that emission estimate.

    Routine maintenance activities, as identified in Attachment 3 may be tracked through the work orders or equivalent. Emissions from activities identified in Attachment 3 shall be calculated using the number of work orders or equivalent that month and the emissions associated with that activity identified in the permit application.

    The performance of each planned MSS activity not identified in Attachments 2 or 3 and the emissions associated with it shall be recorded and include at least the following information: **(date – Project No. 326326)**

    A. the process unit at which emissions from the MSS activity occurred, including the emission point number and common name of the process unit;

    B. the type of planned MSS activity and the reason for the planned activity;

    C. the common name or the facility identification number, if applicable, of the facilities at which the MSS activity and emissions occurred;

    D. the date and time on which the MSS activity occurred;

E. the estimated quantity of each air contaminant, or mixture of air contaminants, emitted with the data and methods used to determine it. The emissions shall be estimated using the methods identified in the permit application, consistent with good engineering practice.

All MSS emissions shall be summed monthly and the rolling 12-month emissions shall be updated on a monthly basis. A sum of all hourly MSS emissions shall be kept during all times when MSS activities are occurring to demonstrate that the MAERT hourly MSS Cap is not exceeded.

51. Process units and facilities, with the exception of those identified in SC Nos. 54 (related to Floating Roof Tanks), 55 (related to Fixed Roof Tanks), 57 (related to frac or temporary tanks), and activities listed in Attachment 2, shall operate in accordance with the following requirements during MSS.

A. The process equipment shall be depressurized to a control device or a controlled recovery system prior to venting to atmosphere, degassing, or draining liquid. Equipment that only contains material that is liquid with VOC true vapor pressure (TVP) less than 0.50 psi at the normal process temperature and 95°F may be opened to atmosphere and drained in accordance with paragraph C of this special condition without depressuring or degassing to a control device. The vapor pressure at 95°F may be used if the actual temperature of the liquid is verified to be less than 95°F and the temperature is recorded.

B. If mixed phase materials must be removed from process equipment, the cleared material shall be routed to a knockout drum or equivalent to allow for managed initial phase separation. If the VOC TVP is greater than 0.50 psi at either the normal process temperature or 95°F, any vents in the system must be routed to a control device or a controlled recovery system. The vapor pressure at 95°F may be used if the actual temperature of the liquid is verified to be less than 95°F and the temperature is recorded. Control must remain in place until degassing has been completed or the system is no longer vented to atmosphere.

C. All liquids from process equipment shall be removed to the maximum extent practical prior to opening equipment to commence degassing and/or maintenance. Liquids with a VOC partial pressure greater than or equal to 0.044 psia at 68°F shall be drained into a closed vessel or to a controlled oily water system, unless prevented by the physical configuration of the equipment. If it is necessary to drain liquid into an open pan or sump, the liquid shall be covered or transferred to a covered vessel within one hour of being drained. After draining is complete, empty open pans may remain in use for housekeeping reasons to collect incidental drips.

D. If the VOC TVP is greater than 0.50 psi at the normal process temperature or 95°F, facilities shall be degassed using good engineering practice to ensure air contaminants are removed from the system through the control device or controlled recovery system to the extent allowed by process equipment or storage vessel design. The vapor pressure at 95°F may be used if the actual temperature of the liquid is verified to be less than 95°F and the temperature is recorded.

The following requirements do not apply to fugitive components, pumps, compressors.

(1) For MSS activities identified in Attachment 3, the following option may be used in lieu of (2) below. The facilities being prepared for maintenance shall not be vented directly to atmosphere, except as necessary to verify an acceptable VOC concentration and establish isolation of the work area, until the VOC concentration has been verified to be less than 10 percent of the lower explosive limit (LEL) per the site safety procedures.

(2) The locations and/or identifiers where the purge gas or steam enters the process equipment or storage vessel and the exit points for the exhaust gases shall be recorded (PFD's, P&ID's, or Turnaround and Inspection [T&I] plans may be used to demonstrate compliance with the requirement). Documented refinery procedures used to deinventory equipment to a control device for safety purposes (i.e., hot work or vessel entry procedures) that achieve at least the same level of purging may be used in lieu of the above. If the process equipment is purged with a gas, purge gas must have passed through the control device or controlled recovery system for a sufficient period of time in accordance with the applicable site operating procedures before the vent stream may be sampled to verify acceptable VOC concentration prior to uncontrolled venting. The VOC sampling and analysis shall be performed using an instrument meeting the requirements of SC No. 52. The sampling point shall be upstream of the inlet to the control device or controlled recovery system. The sample ports and the collection system must be designed and operated such that there is no air leakage into the sample probe or the collection system downstream of the process equipment or vessel being purged. The facilities shall be degassed to a control device or controlled recovery system until the VOC concentration is less than or equal to 10,000 ppmv or 10 percent of the LEL.

(3) Alternatively, the process equipment may filled with a liquid with a VOC vapor pressure less than 0.147 psi while venting to control. If it can be verified that the liquid filled the entire process equipment or vessel, no sampling is necessary. If not, the VOC concentration shall be verified to be less than 10,000 ppmv or 10 percent of the LEL using an instrument meeting the requirements of SC No. 52 while purging to control immediately after draining the liquid from the system. The locations and/or identifiers where the liquid enters the process equipment or storage vessel and the exit points for the exhaust gases shall be recorded (PFDs, P&IDs, or T&I plans may be used to demonstrate compliance with the requirement).

E. Equipment containing materials with VOC TVP greater than 0.50 psi may be vented directly to atmosphere if all the following criteria are met:

(1) It is not technically practicable to depressurize or degas, as applicable, into the process.

(2) There is not an available connection to a plant control system (flare).

(3) There is no more than 50 lb of air contaminants to be vented to atmosphere during each shutdown or startup of a piece of equipment, as applicable.

All instances of venting directly to atmosphere per SC No. 51.D must be documented when occurring as part of any MSS activity. The emissions associated with venting without control must be included in the work order, shift logs, or equivalent for those planned MSS activities identified in Attachment 3. **(02/18)**

52. Air contaminant concentration shall be measured using an instrument/detector meeting one set of requirements specified below.

A. The VOC concentration shall be measured using an instrument meeting all the requirements specified in EPA Method 21 (40 CFR Part 60, Appendix A) with the following exceptions:

(1) The instrument shall be calibrated within 24 hours of use with a calibration gas. The calibration gas used and its concentration, and the vapor to be sampled and its approximate response factor (RF), shall be recorded. If the RF of the VOC (or mixture

of VOCs) to be monitored is greater than 2.0, the VOC concentration shall be determined as follows:

VOC Concentration = Concentration as read from the instrument*RF

(2) Sampling shall be performed as directed by this permit in lieu of section 8.3 of Method 21. During sampling, data recording shall not begin until after two times the instrument response time. The date and time shall be recorded, and VOC concentration shall be monitored for at least 5 minutes and the greatest VOC concentration recorded. This VOC concentration shall not exceed the specified VOC concentration limit prior to uncontrolled venting.

(3) If a TVA-1000 series FID analyzer calibrated with methane is used to determine the VOC concentration, a measured concentration of 34,000 ppmv may be considered equivalent to 10,000 ppmv as VOC.

B. Colorimetric gas detector tubes may be used to determine air contaminant concentrations if they are used in accordance with the following requirements.

(1) The air contaminant concentration measured is less than 80 percent of the range of the tube. If the maximum range of the tube is greater than the release concentration defined in (3), the concentration measured is at least 20 percent of the maximum range of the tube.

(2) The tube is used in accordance with the manufacturer's guidelines.

(3) At least 2 samples taken at least 5 minutes apart must satisfy the following prior to uncontrolled venting:

measured contaminant concentration (ppmv) < release concentration.

Where the release concentration is:

10,000*mole fraction of the total air contaminants present that can be detected by the tube.

The mole fraction may be estimated based on process knowledge. The release concentration and basis for its determination shall be recorded.

Records shall be maintained of the tube type, range, measured concentrations, and time the samples were taken.

C. Lower explosive limit measured with a lower explosive limit detector.

(1) The detector shall be calibrated monthly with a certified pentane gas standard at 25 percent of the lower explosive limit (LEL) for pentane. Records of the calibration date/time and calibration result (pass/fail) shall be maintained.

(2) A daily functionality test shall be performed on each detector using the same certified gas standard used for calibration. The LEL monitor shall read no lower than 90 percent of the calibration gas certified value. Records, including the date/time and test results, shall be maintained.

(3) A certified methane gas standard equivalent to 25 percent of the LEL for pentane may be used for calibration and functionality tests provided that the LEL response is within 95 percent of that for pentane.

D. For measuring benzene breakthrough on Carbon Adsorption Systems in SC No. 61.A.(4), a portable gas chromatograph using a flame ionization detector or photo ionization detector may be used. Alternatively a photo-ionization detector equipped with a benzene separation tube consistent with manufacturer requirements may be used. The monitor shall have the sensitivity and specificity to quantify low level benzene concentrations. The monitor device shall be calibrated within 24 hours of use with a certified calibration gas containing ~5 ppm benzene. Records of the calibration date/time and calibration result shall be maintained.

53. If the removal of a component for repair or replacement results in an open ended line or valve, the open ended line is exempt from any New Source Review (NSR) permit condition requirement to install a cap, blind flange, plug, or second valve for 72 hours. If the repair or replacement is not completed within 72 hours, the permit holder must complete either of the following actions within that time period;

    A. a cap, blind flange, plug, or second valve must be installed on the line or valve, or demonstrate that the line, valve, component, etc, has been double blocked from the process; or

    B. the permit holder shall verify that there is no leakage from the open-ended line or valve. The open-ended line or valve shall be monitored on a weekly basis in accordance with the applicable NSR permit condition for fugitive emission monitoring except that a leak is defined as any VOC reading greater than background. Leaks must be repaired within 24 hours or a cap, blind flange, plug, or second valve must be installed on the line or valve. The results of this weekly check and any corrective actions taken shall be recorded.

54. This permit authorizes emissions from the storage tanks identified in Attachment 1 during planned floating roof landings. Tank floating roofs may only be landed for changes of tank service or tank inspection/maintenance as identified in the permit application, except when the VOC vapors below the floating roof are routed to a control device or a controlled recovery system while the roof is landed. Tank change of service includes landings to accommodate seasonal RVP spec changes and landings to correct off-spec material that cannot be blended into finished product tanks. Tank roof landings include all operations when the tank floating roof is on its supporting legs. These emissions are subject to the maximum allowable emission rates indicated on the MAERT. The following requirements apply to tank roof landings.

    A. The tank liquid level shall be continuously lowered after the tank floating roof initially lands on its supporting legs until the tank has been drained to the maximum extent practicable without entering the tank. Liquid level may be maintained steady for a period of up to two hours if necessary to allow for valve lineups and pump changes necessary to drain the tank. This requirement does not apply where the vapor under a floating roof is routed to control during this process.

    B. If the VOC TVP of the liquid previously stored in the tank is greater than 0.50 psi at 95°F tank refilling or degassing of the vapor space under the landed floating roof must begin within 24 hours after the tank has been drained. Floating roof tanks with liquid capacities less than 100,000 gallons may be degassed without control if the VOC TVP of the standing liquid in the tank has been reduced to less than 0.02 psia prior to ventilating the tank. Controlled degassing of the vapor space under landed roofs shall be completed as follows:

        (1) Any gas or vapor removed from the vapor space under the floating roof must be routed to a control device or a controlled recovery system and controlled degassing must be maintained until the VOC concentration is less than 10,000 ppmv or 10 percent of the LEL. The locations and identifiers of vents other than permanent roof fittings and seals, control device or controlled recovery system, and controlled exhaust stream

shall be recorded. There shall be no other gas/vapor flow out of the vapor space under the floating roof when degassing to the control device or controlled recovery system.

(2) The vapor space under the floating roof shall be vented using good engineering practice to ensure air contaminants are flushed out of the tank through the control device or controlled recovery system to the extent allowed by the storage tank design.

(3) A volume equivalent to twice the volume of the vapor space under the floating roof must have passed through the control device or into a controlled recovery system, before the vent stream may be sampled to verify acceptable VOC concentration. The volume measurement shall not include any make-up air introduced into the control device or recovery system. The VOC sampling and analysis shall be performed as specified in SC No. 52.

(4) The sampling point shall be upstream of the inlet to the control device or controlled recovery system. The sample ports and the collection system must be designed and operated such that there is no air leakage into the sample probe or the collection system downstream of the process equipment or vessel being purged.

(5) If ventilation is to be maintained with emission control, the VOC concentration shall be recorded once an hour.

(6) Degassing must be performed every 24 hours unless there is no standing liquid in the tank or the VOC TVP of the remaining liquid in the tank is less than 0.15 psia.

C. The tank shall not be opened except as necessary to set up for degassing and cleaning, or ventilated without control, until either all standing liquid has been removed from the tank or the liquid in the tank has a VOC TVP less than 0.02 psia. These criteria may be demonstrated in any one of the following ways.

(1) Low VOC TVP liquid that is soluble with the liquid previously stored may be added to the tank to lower the VOC TVP of the liquid mixture remaining in the tank to less than 0.02 psia. This liquid shall be added during tank degassing if practicable. The estimated volume of liquid remaining in the drained tank and the volume and type of liquid added shall be recorded. The liquid VOC TVP may be estimated based on this information and engineering calculations.

(2) If water is added or sprayed into the tank to remove standing VOC, one of the following must be demonstrated:

(a) Take a representative sample of the liquid remaining in the tank and verify no visible sheen using the static sheen test from 40 CFR Part 435 Subpart A Appendix 1.

(b) Take a representative sample of the liquid remaining in the tank and verify hexane soluble VOC concentration is less than 1000 ppmw using EPA method 1664 (may also use 8260B or 5030 with 8015 from SW-846).

(c) Stop ventilation and close the tank for at least 24 hours. When the tank manway is opened after this period, verify VOC concentration is less than 1000 ppmv through the procedure in MSS SC No. 52.

(3) No standing liquid verified through visual inspection.

The permit holder shall maintain records to document the method used to release the tank.

D. Tanks shall be refilled as rapidly as practicable until the roof is off its legs unless the vapor space is routed to control during refilling except as required by SC No. 69.

E. The occurrence of each roof landing and the associated emissions shall be recorded and the rolling 12-month tank roof landing emissions shall be updated on a monthly basis. These records shall include at least the following information:

(1) the identification of the tank and emission point number, and any control devices or recovery systems used to reduce emissions;

(2) the reason for the tank roof landing;

(3) for the purpose of estimating emissions, the date and time of each of the following events:

(a) the roof was initially landed,

(b) all liquid was pumped from the tank to the extent practical,

(c) start and completion of controlled degassing, and total volumetric flow,

(d) all standing liquid was removed from the tank or any transfers of low VOC TVP liquid to or from the tank including volumes and vapor pressures to reduce tank liquid VOC TVP to <0.02 psi,

(e) if there is liquid in the tank, VOC TVP of liquid, start and completion of uncontrolled degassing, and total volumetric flow,

(f) refilling commenced, liquid filling the tank, and the volume necessary to float the roof; and

(g) tank roof off supporting legs, floating on liquid;

(4) the estimated quantity of each air contaminant, or mixture of air contaminants, emitted between events (c) and (g) with the data and methods used to determine it. The emissions associated with roof landing activities shall be calculated using the methods described in Section 7.1.3.2 of AP-42 “Compilation of Air Pollution Emission Factors, Chapter 7 - Storage of Organic Liquids” dated November 2006 and the permit application.

55. Fixed-roof storage tanks shall not be ventilated without control, until either all standing liquid has been removed from the tank or the liquid in the tank has a VOC TVP less than 0.02 psia. This shall be verified and documented through one of the criteria identified in MSS SC No. 52.C. Storage tanks manways may be opened without emission controls when there is standing liquid with a VOC TVP greater than 0.02 psia as necessary to set up for degassing and cleaning. One manway may be opened to provide access to the tank when necessary to allow access to remove or de-volatilize the remaining liquid. The emission control system shall meet the requirements of SC Nos. 54.B.(1) through 54.B.(5) and records maintained per SC No. 54.E.(3)c through 54.E.(3)e, and 54.E.(4). Low vapor pressure liquid may be added to and removed from the tank as necessary to lower the vapor pressure of the liquid mixture remaining in the tank to less than 0.02 psia.

56. The following requirements apply to vacuum and air mover truck operations at this site:

A. Vacuum pumps and blowers shall not be operated on trucks containing or vacuuming liquids with VOC TVP greater than 0.50 psi at 95F unless the vacuum/blower exhaust is routed to a control device or a controlled recovery system.

B. Equip fill line intake with a “duckbill” or equivalent attachment if the hose end cannot be submerged in the liquid being collected.

C. A daily record containing the information identified below is required for each vacuum truck in operation at the site each day.

(1) Prior to initial use, identify any liquid in the truck. Record the liquid level and document that the VOC TVP is less than 0.50 psi if the vacuum exhaust is not routed to a control device or a controlled recovery system. After each liquid transfer, identify the liquid transferred and document that the VOC TVP is less than 0.50 psi if the vacuum exhaust is not routed to a control device or a controlled recovery system.

(2) For each liquid transfer made with the vacuum operating, record the duration of any periods when air may have been entrained with the liquid transfer. The reason for operating in this manner and whether a “duckbill” or equivalent was used shall be recorded. Short, incidental periods, such as those necessary to walk from the truck to the fill line intake, do not need to be documented.

(3) If the vacuum truck exhaust is controlled with a control device other than an engine or oxidizer, VOC exhaust concentration upon commencing each transfer, at the end of each transfer, and as required by SC No. 61, measured using an instrument meeting the requirements of MSS SC No. 52.

(4) The volume in the vacuum truck at the end of the day, or the volume unloaded, as applicable.

D. The permit holder shall determine the vacuum truck emissions each month using the daily vacuum truck records and the calculation methods utilized in the permit application. If records of the volume of liquid transferred for each pick-up are not maintained, the emissions shall be determined using the physical properties of the liquid vacuumed with the greatest potential emissions. Rolling 12 month vacuum truck emissions shall also be determined on a monthly basis.

E. If the VOC TVP of all the liquids vacuumed into the truck is less than 0.10 psi, this shall be recorded when the truck is unloaded or leaves the plant site and the emissions may be estimated as the maximum potential to emit for a truck in that service as documented in the permit application. The recordkeeping requirements in SC Nos. 56.A through 56.D do not apply.

57. The following requirements apply to frac, or temporary, tanks and vessels used in support of MSS activities.

A. Except for labels, logos, etc. not to exceed 15 percent of the tank/vessel total surface area, the exterior surfaces of these tanks/vessels that are exposed to the sun shall be white or aluminum. This requirement does not apply to tanks/vessels that only vent to atmosphere when being filled. This requirement also does not apply to frac tanks which are heated for the purpose of mixing liquids with VOC TVP less than 0.10 psi at 95°F. **(03/16)**

B. These tanks/vessels must be covered and equipped with fill pipes that discharge within 6 inches of the tank/vessel bottom.

C. These requirements do not apply to vessels storing less than 25 barrels of liquid that are closed such that the vessel does not vent to atmosphere.

D. The permit holder shall maintain an emissions record which includes calculated emissions of VOC from all frac tanks during the previous calendar month and the past consecutive 12 month period. The record shall include tank identification number, dates put into and removed from service, control method used, tank capacity and volume of liquid stored in gallons, name of the material stored, VOC molecular weight, and VOC TVP at the estimated monthly average material temperature in psia. Filling emissions for tanks shall be calculated using the TCEQ publication titled "Technical Guidance Package for Chemical Sources - Loading Operations" and standing emissions determined using: the TCEQ publication titled "Technical Guidance Package for Chemical Sources Storage Tanks."

E. If the tank/vessel is used to store liquid with VOC TVP less than 0.10 psi at 95F, records may be limited to the days the tank is in service and the liquid stored. Emissions may be estimated based upon the potential to emit as identified in the permit application.

58. The term "true vapor pressure (TVP)" is used in lieu of the term "partial pressure" in this permit.

59. The MSS activities represented in the permit application may be authorized under permit by rule only if the procedures, emission controls, monitoring, and recordkeeping are the same as those required by this permit.

60. All permanent facilities must comply with all operating requirements, limits, and representations in the permits identified in Attachment 1 during planned startup and shutdown unless alternate requirements and limits are identified in this permit. Alternate requirements for emissions from routine emission points are identified below:

A. Heaters, boilers, and furnaces are exempt from NO_x and CO operating requirements identified in other special conditions this permit during planned startup and shutdown if the following criteria are satisfied. This exemption does not include NO_x 365-day rolling average limits. **(08/16)**

(1) The routine maximum allowable emission caps are not exceeded.

(2) Except as noted in SC 60 A(4) below the startup period does not exceed 8 hours in duration and the firing rate does not exceed 75 percent of the design firing rate. The time it takes to complete the shutdown does not exceed 4 hours.

(3) Control devices are started and operating properly when venting a waste gas stream.

(4) Startup times exceeding 8 hours for specific facilities are allowed as identified below: **(date – Project No. 326326)**

Heater, Boiler, or Furnace FIN	EPN	Maximum Hours Allowed for Startup of each FIN
12-H01A and 12-H01B	115A and 115B	48
13-H-01A, 13-H-01B, and 13-H-01C	118	28
31-H-01	117	12
38-H-01, 38-H-02,38-H-03	162	45
47-H-03 and 47-H-04	150	10
48-H-01	151	12
49-H-01, 49-H-02, 49-H-03, 49-H-04	152	16

Heater, Boiler, or Furnace FIN	EPN	Maximum Hours Allowed for Startup of each FIN
52-H-01	195	24

B. The limits identified below apply to the operations of the specified facilities during startup and shutdown. All other routine operating limitations apply during planned startup and shutdown.

(1) The HOC startup period shall not exceed 86 hours and the hourly average CO concentration during this period shall not exceed 1200 ppmvd corrected to zero percent O_2. All HOC emissions during startup are in the MSS emission caps.

(2) The sulfur recovery requirements and SRU tail gas incinerator sulfur dioxide concentration limits in SC Nos. 22 and 41 do not apply during SRU startup. Operation in the hot standby mode shall be minimized. The SRU tailgas incinerator shall be operated in accordance with SC No. 24 during this period. A SRU incinerator shall not operate in this mode for more than 72 hours in any rolling 12 month period.

(3) Paragraph (2) of this condition does not apply when SRU vent gasses from a TGI are routed through the HOC caustic scrubber prior to being discharged to the atmosphere. This paragraph applies instead. The HOC caustic scrubber shall be monitored with a SO_2 CEMS.

C. A record shall be maintained indicating that the start and end times for each of the activities identified above occur and documentation that the requirements for each have been satisfied.

61. Control devices required by this permit for emissions from planned MSS activities are limited to those types identified in this condition. Control devices shall be operated with no visible emissions except periods not to exceed a total of five minutes during any two consecutive hours. Each device used must meet all the requirements identified for that type of control device.

Controlled recovery systems identified in this permit shall be directed to an operating refinery process or to a collection system that is vented through a control device meeting the requirements of this permit condition.

A. Carbon Adsorption System (CAS).

(1) The CAS shall consist of 2 carbon canisters in series with adequate carbon supply for the emission control operation.

(2) The CAS shall be sampled downstream on the first can and the concentration recorded at least once every hour of CAS run time to determine breakthrough of the VOC. The sampling frequency may be extended using either of the following methods:

(a) The CAS systems equipped with an upstream liquid scrubber may be sampled once every 12 hours of CAS run time to determine breakthrough.

(b) Sampling frequency may be extended to up to 30 percent of the minimum potential saturation time for a new can of carbon. The permit holder shall maintain records including the calculations performed to determine the minimum saturation time.

(c) The carbon sampling frequency may be extended to longer periods based on previous experience with carbon control of a MSS waste gas stream. The past experience must be with the same VOC, type of facility, and MSS activity. The basis for the sampling frequency shall be recorded. If breakthrough is monitored on the initial sample of the upstream can when the polishing can is put in place, a permit deviation shall be recorded.

(3) The method of VOC sampling and analysis shall be by detector meeting the requirements of SC No. 52.

(4) Breakthrough is defined as the highest measured VOC or benzene concentration at or exceeding 100 ppmv or 5 ppmv, respectively, above background. When the condition of breakthrough of VOC from the initial saturation canister occurs, the waste gas flow shall be switched to the second canister and a fresh canister shall be placed as the new final polishing canister within twenty-four hours. In lieu of replacing canisters, the flow of waste gas may be discontinued until the canisters are switched. Sufficient new activated carbon canisters shall be available to replace spent carbon canisters such that replacements can be done in the above specified time frame.

(5) Records of CAS monitoring shall include the following:

(a) Sample time and date.

(b) Monitoring results (ppmv).

(c) Canister replacement log.

(6) Single canister systems are allowed if the time the carbon canister is in service is limited to no more than 30 percent of the minimum potential saturation time. The permit holder shall maintain records for these systems, including the calculations performed to determine the saturation time. The time limit on carbon canister service shall be recorded and the expiration date attached to the carbon can.

(7) Liquid scrubbers may be used upstream of carbon canisters to enhance VOC capture provided such systems are closed systems and the spent absorbing solution is discharged into a closed container, vessel, or system.

B. Thermal Oxidizer and Vapor Combustion Units (VCUs) **(date – Project No. 326326)**

(1) The thermal oxidizer or VCU six minute average firebox exit temperature shall be maintained at not less than 1400°F and waste gas flows shall be limited to assure at least a 0.5 second residence time in the fire box while waste gas is being fed into the oxidizer.

(2) The thermal oxidizer or VCU exhaust temperature shall be continuously monitored and recorded when waste gas is directed to the oxidizer or VCU. The temperature measurements shall be made at intervals of six minutes or less and recorded at that frequency. Temperature measurements recorded in continuous strip charts may be used to meet the requirements of this section.

The temperature measurement device shall be installed, calibrated, and maintained according to accepted practice and the manufacturer's specifications. The device shall have an accuracy of the greater of ±0.75 percent of the temperature being measured expressed in degrees Celsius or ±2.5ºC.

(3) As an alternative to 61.B.(1) of this condition, the thermal oxidizer or VCU may be tested to confirm a minimum 99 wt percent destruction efficiency. The results of the test will be used to determine the minimum operating temperature and residence time. Stack Test must have been performed within the last 12 months. Stack VOC concentrations and flow rates shall be measured in accordance with applicable United

States Environmental Protection Agency (EPA) Reference Methods. A copy of the test report shall be maintained with the thermal oxidizer or VCU and a summary of the testing results shall be included with the emission calculations.

(4) As an alternative to 61.B.(1)-(2) of this condition, the thermal oxidizer or VCU may be equipped with continuous VOC monitors (inlet and outlet). The VOC monitors shall be calibrated and maintained according to SC No. 52, except 52.C. In order to demonstrate compliance with this requirement, inlet VOC and outlet VOC concentrations and flows shall be measured at least every 15 minutes and this information used to determine inlet and outlet VOC mass rates on an hourly basis to confirm a minimum of 99 percent destruction efficiency or an exhaust concentration not greater than 20 ppmv.

C. Internal Combustion Engine.

(1) The internal combustion engine shall have a VOC destruction efficiency of at least 99 percent.

(2) The engine must have been stack tested with butane to confirm the required destruction efficiency within the past 12 months. VOC shall be measured in accordance with the applicable United States EPA Reference Method during the stack test and the exhaust flow rate may be determined from measured fuel flow rate and measured oxygen concentration. A copy of the stack test report shall be maintained with the engine. There shall also be documentation of acceptable VOC emissions following each occurrence of engine maintenance which may reasonably be expected to increase emissions including oxygen sensor replacement and catalyst cleaning or replacement. Stain tube indicators specifically designed to measure VOC concentration shall be acceptable for this documentation, provided a hot air probe or equivalent device is used to prevent error due to high stack temperature, and three sets of concentration measurements are made and averaged. Portable VOC analyzers meeting the requirements of SC No. 52 are also acceptable for this documentation.

(3) The engine shall be operated with an oxygen sensor-based air-to-fuel ratio (AFR) controller. Documentation for each AFR controller that the, manufacturer's, or supplier's recommended maintenance has been performed, including replacement of the oxygen sensor as necessary for oxygen sensor-based controllers shall be maintained with the engine. The oxygen sensor shall be replaced at least quarterly in the absence of a specific written recommendation.

D. The plant flare system

(1) The heating value and velocity requirements in 40 CFR 60.18 shall be satisfied during operations authorized by this permit.

(2) The flare shall be operated with a flame present at all times and/or have a constant pilot flame. The pilot flame shall be continuously monitored by a thermal couple or an infrared monitor. The time, date, and duration of any loss of pilot flame shall be recorded. Each monitoring device shall be accurate to, and shall be calibrated at a frequency in accordance with, the manufacturer's specifications.

(3) Each flare shall be equipped with one of the following:

(a) Operation and maintenance of a flare gas recovery system.

(b) A continuous flow monitor and composition analyzer that provides a record of the flare gas flow and composition of either the total VOC or heating value of the flare gas.

The flow monitor and analyzer sample point shall be installed as near as possible to the flare inlet such that the total vent stream to the flare is measured and analyzed. Readings shall be taken at least once every 15 minutes and the average hourly values of the flow and composition shall be recorded each hour. The flow monitors shall be calibrated on an annual basis to meet the following accuracy specifications: the flow monitor must be calibrated to manufacturer's specifications; the temperature monitor must be calibrated to within ± 2.0 percent at absolute temperature; the pressure monitor must be calibrated to within ± 5.0 mmHg.

i. If VOC monitoring is chosen: Calibration of the analyzer shall follow the procedures and requirements of Section 10.0 of 40 CFR Part 60, Appendix B, Performance Specification 9, as amended through October 17, 2000, (65 FR 61744), except that the multi-point calibration procedure in Section 10.1 of Performance Specification 9 shall be performed at least once every calendar quarter instead of once every month, and the mid-level calibration check procedure in Section 10.2 of Performance Specification 9 shall be performed at least once every calendar week instead of once every 24 hours. The on-line analyzer system must be capable of measuring constituents sufficient to determine the net heating value of the gas combusted in the flare to within 5.0%, or be calibrated with certified standards of the top two constituents affecting net heating value, whichever is more stringent and the ranges of calibration standards may be based on the typical concentrations observed rather than the full potential range of concentrations. The calibration gases used for calibration procedures shall be in accordance with Section 7.1 of Performance Specification 9. Net heating value of the gas combusted in the flare shall be calculated according to the equation given in 40 CFR § 60.18(f)(3) as amended through October 17, 2000, (65 FR 61744).

ii. If heating value is chosen: The calorimeter shall be calibrated, installed, operated, and maintained, in accordance with manufacturer recommendations, to continuously measure and record the net heating value of the gas sent to the flare, in British thermal units/standard cubic foot of the gas.

E. Single Carbon Adsorption or Scrubber System

A single liquid scrubbing or single carbon canister adsorption system may be used as a sole control device if the requirements below are satisfied.

(1) The exhaust to atmosphere shall be continuously monitored with a CEM. The VOC concentration shall be recorded at least once every 15 minutes when waste gas is directed to the CAS or scrubber.

(2) The method of VOC sampling and analysis shall be by detector meeting the requirements of SC No. 52 except 52.C.

(3) An alarm shall be installed such that an operator is alerted when outlet VOC concentration exceeds 100 ppmv above background. The MSS activity shall be stopped as soon as possible when the VOC concentration exceeds 100 ppmv above

background for more than one minute. The date and time of all alarms and the actions taken shall be recorded.

F. A closed loop refrigerated vapor recovery system

(1) The vapor recovery system shall be installed on the facility to be degassed using good engineering practice to ensure air contaminants are flushed from the facility through the refrigerated vapor condensers and back to the facility being degassed. The vapor recovery system and facility being degassed shall be enclosed except as necessary to insure structural integrity (such as roof vents on a floating roof tank).

(2) VOC concentration in vapor being circulated by the system shall be sampled and recorded at least once every 4 hours at the inlet of the condenser unit with an instrument meeting the requirements of SC No. 52.

(3) The quantity of liquid recovered from the tank vapors and the tank pressure shall be monitored and recorded each hour. The liquid recovered must increase with each reading and the tank pressure shall not exceed one inch water pressure while the system is operating.

G. Other control devices approved by the TCEQ through a permit amendment application or a pollution control permit application.

62. The following requirements apply to capture systems for the plant flare system.

A. Each capture system for the plant flare system shall comply with one of the following:

(1) Conduct a once a month visual, audible, and/or olfactory inspection of the capture system to verify there are no leaking components in the capture system; or

(2) verify the capture system is leak-free by inspecting in accordance with 40 CFR Part 60, Appendix A, Test Method 21 once a year. Leaks shall be indicated by an instrument reading greater than or equal to 500 ppmv above background.

B. The control device shall not have a bypass.

C. If any of the inspections under A of this condition is not satisfactory, the permit holder shall promptly take necessary corrective action. Records shall be maintained documenting the performance and results of the inspections required in this condition.

63. If spray guns are used to apply paint, they shall be airless, high volume low pressure (HVLP), or have the same or higher transfer efficiency as airless or HVLP spray guns.

64. Emissions from all painting activities, except for minor painting identified in Attachment 2 to this permit, at this site must satisfy the criteria below. New compounds may also be added through the use of the procedure below.

A. Short-term (pounds per hour [lb/hr]) and annual (TPY) emissions shall be determined for each chemical in the paint as documented in the permit application. The calculated emission rate shall not exceed the maximum allowable emissions rate at any emission point.

B. The Effect Screening Level (ESL) for the material shall be obtained from the current TCEQ ESL list or by written request to the TCEQ Toxicology Division.

C. The total painting emissions of any compound must satisfy one of the following conditions:

(1) The total emission rate is less than 0.1 lb/hr and the ESL greater than or equal to 2 $\mu g/m^3$; or

(2) The emission rate of the compound in pounds per hour is less than the ESL for the compound divided by 171.5 (ER<ESL/171.5).

D. The permit holder shall maintain records of the information below and the demonstrations in steps A though C above. The following documentation is required for each compound:

(1) Chemical name(s), composition, and chemical abstract registry number if available.

(2) Material Safety Data Sheet.

(3) Maximum concentration of the chemical in weight percent

(4) Paint usage and the associated emissions shall be recorded each month and the rolling 12 month total emissions updated.

65. No visible emissions shall leave the property due to painting or abrasive blasting.

66. Black Beauty and Garnet Sand may be used for abrasive blasting. The permit holder may also use blast media that meet the criteria below:

A. The media shall not contain asbestos or greater than 1.0 weight percent crystalline silica.

B. The weight fraction of any metal in the blast media with a short term ESL less than 50 micrograms per cubic meter as identified in the most recently published TCEQ ESL list shall not exceed the ESLmetal/1000.

C. The MSDS for each media used shall be maintained on site.

D. Blasting media usage and the associated emissions shall be recorded each month and the rolling 12 month total emissions updated.

67. Planned maintenance activities must be conducted in a manner consistent with good practice for minimizing emissions, including the use of air pollution control equipment, practices and processes. All reasonable and practical efforts to comply with SC Nos. 49 through 66, 68, and 69 must be used when conducting the planned maintenance activity, until the commission determines that the efforts are unreasonable or impractical, or that the activity is an unplanned maintenance activity.

68. Slab cleaning activities are limited to water washing small pieces of process equipment, empty vacuum trucks, and empty portable frac containers. Records shall be maintained of the number of items cleaned each day and the emissions determined each month based on the number of items cleaned as estimated in the permit amendment application, PI-1 dated December 21, 2006. The permit holder may assume that all vacuum trucks and frac tanks used on the site as recorded in SC Nos. 56 and 57 are cleaned in lieu of maintaining cleaning records for those items.

69. The following requirements ensure satisfactory impacts off-site during MSS.

A. A maximum of 3 frac or temporary storage tanks or vessels may be filled with naphtha during any one hour period.

B. Emissions from refilling tanks with a landed roofs with a liquid with a vapor pressure greater than 0.50 psia shall be routed to a control device meeting the requirements of SC No. 61 unless the tank has been cleaned and degassed.

C. While filling a tank with a landed roof with a liquid with vapor pressure greater than 0.50 psia without emission control, no other tanks with landed roofs may be degassed or filled with that type of liquid.

D. If a cleaned and degassed tank with a landed roof has been refilled with a liquid with vapor pressure greater than 0.50 psia without emission control in the past 12 months, emissions from refilling the tank with a landed roof shall be routed to a control device meeting the requirements of SC No. 61 if the liquid has a vapor pressure greater than 0.50 psia.

70. Records shall be maintained in accordance with SC No. 50 for planned MSS on the Air Liquide Large Industries SMR (Permit 34245, RN103120929). Total waste gas directed to the Valero flares during these operations shall not exceed the total identified in the permit amendment application, PI-1 dated September 23, 2014. **(03/16)**

71. The following steps shall take place before the catalyst is removed from the HDS unit for transfer to the catalyst pad. The reactor shall be cooled prior to opening and the catalyst shall be flushed with gas oil followed by hydrogen recycle gas circulation. The catalyst shall then be neutralized with a demineralized water and soda ash solution.

72. Each of the following EPNs may not exceed the hours of MSS operation per calendar year shown in the table. **(03/16)**

Emission Point Number	Hours of MSS operation per calendar year
30-B-04MSS	36
16-P-11	52
16-P-12	52
16-P-13	52
16-P-14	52

Permit References

73. The permit holder shall maintain a copy of the effective permit at the site together with complete copies of all confidential documents that are referenced in the above permit conditions as attachments. The permit and attachments shall be made available to TCEQ personnel at the site upon request.

Emission Cap Compliance Recordkeeping

74. Recordkeeping programs for those facilities authorized by the permit shall be established and maintained such that the ability to demonstrate compliance with all authorized emission caps and individual emission rate limits (short-term and annual) is ensured. Records of all compliance testing, CEMS/PEMS results, and process parameters necessary to demonstrate compliance with the emission rate caps shall be maintained on-site for a period of five years.

Emissions calculations for verifying compliance with the emission caps shall be performed at least once every quarter to demonstrate compliance with the annual rolling average requirement. The holder of this permit shall maintain all records necessary to demonstrate compliance with the short-term (lb/hr) and annual TPY emissions cap and provide such demonstration of compliance to the TCEQ Corpus Christi Regional Office upon request.

The emissions shall be determined using the following techniques: **(02/18)**

Fugitive	Component counts using the emission factors and method specified in the permit application.
Cooling Towers	Measured strippable VOC concentration as specified in SC No. 30 and the cooling tower circulation rate.
Tanks	As specified in SC No. 28.
Heaters/Boilers	If a CEMS is installed, as specified in SC No. 40. If stack tested per SC No. 39, using the most recent stack test result and recorded firing rate for the period. If no sampling is required, using the emission factor in the permit application and the recorded firing rate for the period.
Loading	Fugitive emissions from loading operations shall be calculated using: (a) AP 42 loading equation listed in Chapter 5.2 and (b) the TCEQ publication titled “Technical Guidance for Chemical Sources Loading Operations.” Emissions from control devices shall be determined using the emission factor (in mg/l) determined through testing and the volume loaded. The manufacturer's guaranteed emission factor may be used if the most recent stack testing has verified that factor.
SRU/HOC	If a CEMS is installed, as specified in SC No. 40.
Scrubber	If stack tested per SC No. 38, using the most recent stack test result and recorded operating rate for the period. If no sampling is required, using the emission factor in the flexible permit application and the average value of the appropriate operating parameter for the period.
Diesel Engines	Emissions calculated based on hours of operation and emission factors listed on Table D-1 in the confidential section of the permit amendment application dated November 16, 2004.

These and all other records required by any previous condition of this permit shall be made available to the TCEQ Executive Director or his representative upon request.

Federal Applicability

75. These facilities shall comply with all applicable requirements of the U.S. Environmental Protection Agency (EPA) regulations on Standards of Performance for New Stationary Sources promulgated for the following: **(TBD**)

    A. Petroleum Refineries in 40 CFR Part 60, Subparts A , J, and Ja as follows: **(04/16)**

        (1) All heaters and boilers – Subpart J, except as noted below;

(2) Desalter Heater (EPN 114), Heater 31-H-01 (EPN: 117), Boiler 30-B-04 (EPN: 30-04), and Boiler 30-B-05 (EPN 30-B-05) – Subpart Ja

(3) HOC – Subpart J

(4) HOC – Subpart Ja (upon startup of the HOC Reconfiguration Project (Project 333877)

(5) SRU's – Subpart J

(6) BUP Flare, Main Flare, and Ground Flare – Subpart Ja

B. Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and Prior to May 19, 1978, in 40 CFR Part 60, Subparts A and K.

C. Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984, in 40 CFR Part 60, Subparts A and Ka.

D. Volatile Organic Liquid Storage Vessels (including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced after July 23, 1984, in 40 CFR Part 60, Subparts A and Kb.

E. Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry (SOCMI) for which Construction, Reconstruction, or Modification Commenced After January 5, 1981, and on or Before November 7, 2006, in 40 CFR Part 60, Subparts A and VV.

F. Bulk Gasoline Terminals in 40 CFR Part 60, Subparts A and XX.

G. Petroleum Refineries for which Construction, Reconstruction, or Modification Commenced after January 4, 1983, and on or Before November 7, 2006, in 40 CFR Part 60, Subparts A and GGG.

H. The VOC Emissions from SOCMI Distillation Operations in 40 CFR Part 60, Subparts A and NNN.

I. The VOC Emissions from Petroleum Refinery Wastewater Systems in 40 CFR Part 60, Subparts A and QQQ.

J. The VOC Emissions from SOCMI Reactor Processes in 40 CFR Part 60, Subparts A and RRR.

76. These facilities shall comply with all applicable requirements of EPA regulations on National Emission Standards for Hazardous Air Pollutants (NESHAPS) promulgated for the following:

A. Asbestos in 40 CFR Part 63, Subparts A and M.

B. Benzene Waste Operations in 40 CFR Part 63, Subparts A and FF.

77. These facilities shall comply with all applicable requirements of EPA regulations on National Emission Standards for Hazardous Air Pollutants (NESHAPS) for Source Categories promulgated for the following:

A. Marine Tank Vessel Loading Operations in 40 CFR Part 63, Subparts A and Y.

B. Hazardous Air Pollutants from Petroleum Refineries in 40 CFR Part 63, Subparts A and CC.

C. Hazardous Air Pollutants for Petroleum Refineries: Catalytic Cracking Units, Catalytic Reforming Units, and Sulfur Recovery Units in 40 CFR Part 63, Subparts A and UUU.

D. Industrial, Commercial, and Institutional Boilers and Process Heaters in 40 CFR Part 63, Subparts A and DDDDD. **(02/18)**

E. Hazardous Air Pollutants: Site Remediation in 40 CFR Part 63, Subparts A and GGGGG.

Referenced Permit by Rule Authorizations

78. The following sources and/or activities are authorized under a Permit by Rule (PBR) by Title 30 Texas Administrative Code Chapter 106 (30 TAC Chapter 106). These lists are not intended to be all inclusive and can be altered without modifications to this permit. **(date – Project No. 326326)**

Authorization	Source or Activity
PBR No. 155846	Control of liquid petroleum gas (LPG) unloading with a portable vapor combustion unit.

Sour Water Storage Tanks

79. The sour water storage tanks shall be subject to the following conditions: **(TBD)**

A. The sour water storage tank system shall be maintained by either of the following methods:

(1) A minimum sour water retention time of 2.0 days in conjunction with a hydrocarbon detection and flow diversion system designed to prevent hydrocarbon carryover to the SRUs by routing sour waters with unacceptable levels of hydrocarbons to the tanks listed in A of this condition. Retention time shall be calculated and recorded daily using the daily average combined tank volume of all sour water tanks and the daily average combined feed rates to the sour water strippers.

(2) A minimum sour water retention time of 3.0 days

B. If acid gas flaring takes place that might be traced to hydrocarbon carryover from the sour water system, the operator shall engage a third-party consultant to complete a Root Cause Failure Analysis (RCFA) within 90 days after the acid gas flaring event in question. The Beaumont Regional Office shall be supplied with a copy of the RFCA within 10 days of it being completed. If the RCFA determines that the acid gas flaring event can be traced to sour water system hydrocarbon carryover that is partially or totally caused by inadequate retention or hold up times, the holder of this permit shall implement one of the following options within 60 days after completion of the RFCA:

(1) The holder of this permit shall submit design information and a proposed implementation schedule to the TCEQ Office of Permitting and Registration for three days of sour water retention and hold up time based on maximum expected feed rates to the sour water strippers, or

(2) Design information and implementation schedule of a proposed alternative other than increased sour water retention time.

C. For periods of planned maintenance activity for the sour water tank, the sour water stripper surge system shall have a reduced minimum on-line retention time of one and a half days based on the sour water flow rate into the tanks. Records of these periods and the corresponding maintenance activity must be maintained and made available upon request.

Greenhouse Gas Emissions

80. Permit holders must keep records sufficient to demonstrate compliance with 30 Texas Administrative Code § 116.164. If construction, a physical change or a change in method of operation results in Prevention of Significant Deterioration (PSD) review for criteria pollutants, records shall be sufficient to demonstrate the amount of emissions of GHGs from the source as a result of construction, a physical change or a change in method of operation does not require authorization under 30 TAC §116.164(a). If there is construction, a physical change or change in the method of operation that will result in a net emission increase of 75,000 tpy or more CO_{2e} and PSD review is triggered for criteria pollutants, greenhouse gas emissions are subject to PSD review. **(TBD)**

81. Monitoring, quality assurance/quality control requirements, emission calculation methodologies, record keeping, and reporting requirements related to Greenhouse Gas (GHG) emissions shall adhere to the applicable requirements in 40 CFR Part 98 and in this permit. **(TBD)**

82. Beginning after the start-up of the new and modified sources associated with the HOC Reconfiguration Project (TCEQ Project 333877), modification and construction, the permittee shall calculate the CO_{2e} emissions on a 12-month rolling basis, based on the procedures and Global Warming Potentials (GWP) contained in Greenhouse Gas Regulations, 40 CFR Part 98, Subpart A, Table A-1. This condition applies to the following EPNs: 121 (HOC contribution only), FUG-CAP (new components added for Project 333877), and 30-B0-05. **(TBD)**

83. Records of emissions of GHG, and how they were determined, in compliance with Special Condition Nos. 80, 81, and 82 must be maintained by the holder of this permit in a form suitable for inspection for a period of five years after collection and must be made available upon request to representatives of the TCEQ, EPA, or any local air pollution control program having jurisdiction. **(TBD)**

84. Operational and Monitoring requirements for Boiler 30-B-05. **(TBD)**

A. Boiler 30-B-05 shall be operated with a net thermal efficiency of no less than 78 percent on a 12-month rolling average, excluding periods of maintenance, startup and shutdown. This shall be ensured by using the following good combustion practices: operating the boiler at an optimum air-fuel ratio, limiting the boiler's operating temperature to the extent practicable, and reducing heat loss through the use of insulating materials where feasible.

B. Thermal efficiency shall be calculated and recorded at least monthly using equation G-1 from American Petroleum Institute (API) method 560 (4th ed. or later), Annex G using monitoring data collected as required under this permit, other quality-assured data, and engineering judgment.

If the maximum range between twelve or more consecutive monthly efficiency calculations does not exceed 5 percentage points, and each calculation demonstrates compliance with the minimum efficiency requirements of this paragraph, the permit holder may elect to reduce the frequency of performing the calculation to quarterly (skipping up to two monthly calculations); provided, however, that:

(1) In case a quarterly efficiency calculation yields an efficiency value outside of the maximum range specified in this previous paragraph, monthly efficiency calculations shall be resumed.

(2) In case a quarterly efficiency calculation shows non-compliance with the minimum efficiency requirement of this paragraph, the permit holder shall assume that a condition of non-compliance occurred during each month of the previous quarter where a calculation was skipped.

Date: TBD

Attachment 1

Permit Numbers 38754, PSDTX324M15, and GHGPSDTX211

Permit Emission Points by Type

Category	EPN	Description
Fired Units	1	Crude Heater
	16-P-04	Diesel Pump
	16-P-07	Diesel Pump
	16-P-11	Diesel Pump
	16-P-12	Diesel Pump
	16-P-13	Diesel Pump
	16-P-14	Diesel Pump
	49-H-90	C7 Splitter Reboiler
	74	Vacuum Unit Heater
	83-P-136A	Diesel Pump
	83-P-136B	Diesel Pump
	114	Desalter Heater
	115	HDS Charge Heaters
	116	HDS Heavy Oil Preheater
	117	Alky Fract Reboiler
	118	Hydrogen Reformer Heater
	119	Sulften Heater
	120	Butamer Heater
	121	HOC (incinerator and scrubber stack)
	121a	SRU Bypass Stack
	124	API Separator Combustor
	131	Crude Preflash Heater
	132	Crude Stabilizer Heater
	150	HCU Heater
	151	NHT Heater
	152	CRU Heaters
	153	Boiler 30-B-02
	162	Oleflex Heaters

	172	RSU Heater
	30-B-04	Boiler 30-B-04
	30-B-04MSS	Boiler 30-B-04MSS
	195	GD Charge Heater
	900	Crude Charge Heater (Permit No. 106965)
	TRUCKCOMB	Truck Loading Combustor
	30-B-05	Boiler 30-B-05
Flares	126	Main Flare
	127	MTBE Flare
	135	Acid Gas Flare (Pilots Only)
	158	Ground Flare
Tanks	69	Tank No. 9
	83-TK-26	Tank No. 26
	83-TK-155	Tank No. 155
	83-TK-159	Tank No. 159
	83-TK-160	Tank No. 160
	83-TK-162	Tank No. 162
	187	Tank No. 25 (Sour Water Tank)
	902	Tank No. 165 (Permit No. 106965)
Fugitive	1F	Crude Unit
	2F	Vacuum Unit
	4F	LEU
	07F	BUP Flare
	08F	08 FLR/Day Tanks
	11F	Desalter Unit
	12F	HDS Unit
	13F	SMR
	18F	HRLEU Unit
	20F	LRU
	21/22F	HOC Unit
	30F	Boilerhouse

	31F	HF Alkylation Unit
	36F	Butamer Unit
	37F	MTBE
	38F	Oleflex
	41F	SRU Unit
	42F	SWS
	46-24F	SULF/SEU
	47F	HCU
	47PSAF	PSA
	48F	NHT
	49F	CRU
	52F	Gasoline Desulfurization
	54F	SHU
	83F	WWT
	175	49-RSU/XFU
	201	Railcar Unloading
	DOCKS	Docks
	LPGSTGF	LPG Storage
	MVRUF	MVRU
	TERM-F	Terminals
	TRKRACKFUG	Truck Rack
	903	Crude Unit Fugitives (Permit No. 106965)
	904	Crude Unit BWS Fugitives (Permit No. 106965)
	908	Crude Storage Fugitives (Permit No. 109543)
	##F	Selective Hydrogenation Unit
	##F	LPG Gas Plant
	##F	Boiler 30-B-05
Loading	31	Barge Loading (Heavy Oil)
	SHIP FUG	Ship Dock Fugitives
	TRUCKFUG	Truck Loading
	VRU	Marine loading VRU

	907	Crude Loading Fugitives (Permit No. 109543)
	909	Crude Loading Vapor Combustor (Permit No. 109543)
Other	1CT	CU/VRU Cooling Tower
	01-01	Crude/Vac Pump Alley
	01-02	North of Vac Unit
	01-03	North of Vac Unit
	50-01	East of Tank 62
	52-01	NW of GDU MCC
	70-01	East of Tank 55
	70-02	NW of Tank 106
	70-03	West of Tank 94
	72-01	East of Tank 111
	73-01	North of Tank 152
	73-01	Between TK 8 & TK 164
	83-01	WWT-Hydroblast Pad
	01-04	NW of Vac Unit
	03-01	North of tanks 156/161
	11-01	Desalter Pump Alley
	21BH	Magnacat Unit
	41-01	North of 43-TK-08
	41-02	West of 41-V-05
	49-01	NW of XFU
	49-02	North of NHT
	49-03	NHT Pump Alley
	83-02	WWT-Desalter Lift
	83-03	WWT-East of KOH Trtr
	83-04	WWT- NE of Tank 159
	83-05	WWT-North Lift
	83-06	WWT-North of V-68
	83-07	WWT-South of V-55

	83-09	WWT-BSRP
	83-10	WWT-83-V-99
	83-12	WWT-83-V-28
	83-TK-23	Equalization Tank
	83-TK-27	Bio Oxidation Tank
	83-V-58	Tank No. 58
	83-V-59	Tank No. 59
	83-V-97	Tank No. 97
	98-02	WP MSAT Rail Rack
	122	HOC Cooling Tower
	123	ALKY Cooling Tower
	124a	API Sep Back Up
	155	CCU CCR
	901	Crude Unit Cooling Tower (Permit No. 106965)
	168	Oleflex CCR
	AE-49601A/B	Analyzer Vent AE-49601A/B
	167-CT	BUP Cooling Tower
	AE-49900A/B	Analyzer Vent AE-49900A/B
	AE-49901A/B	Analyzer Vent AE-49901A/B
	V-201	WP MSAT Rail Rack
	WWTP-AERB	Aeration Basin
	WWTP-CLRF	Clarifier
	WWTP-OWS	WW Collection System
	WWTP-SLB	Salin Basin
	HOC-PP-CT	Cooling Tower -Propylene Project
	XX-01	HOC PP Gas Plant CAS

Date: TBD

Attachment 2

Permit Numbers 38754, PSDTX324M15, and GHGPSDTX211

Inherently Low Emitting Activities

	Emissions				
Activity	**VOC**	**NO_x**	**CO**	**PM**	**H_2S/SO_2**
Catalyst activation/deactivation	x				
Management of sludge from pits, ponds, sumps, and water conveyances	x				
Aerosol Cans	x				
Calibration of analytical equipment and process instrumentation	x	x	x		x
Carbon canister replacement	x				
Catalyst charging/handling				x	
Instrumentation/analyzer maintenance	x				
Meter proving	x				
Replacement of analyzer filters and screens	x				
Maintenance on water treatment systems (cooling, boiler, potable)	x				
Soap and other aqueous based cleaners	x				
Cleaning sight glasses	x				
Aerosol and miscellaneous chemical usage	x				

Date: January 22, 2016

Attachment 3

Permit Numbers 38754, PSDTX324M15, and GHGPSDTX211

Routine Maintenance Activities

Pump repair/replacement

Fugitive component (valve, pipe, flange) repair/replacement

Compressor repair/replacement

Heat exchanger repair/replacement

Vessel repair/replacement

Date: January 22, 2014

Attachment 4

Permit Numbers 38754, PSDTX324M15, and GHGPSDTX211

MSS Activity Summary

Facilities	Description	Emissions Activity	EPN
all process units and tanks	shutdown/depressurize/drain/startup (includes SRU shutdowns, FCCU startups and Air Liquide MSS activities)	Vent to control	MSS Turnaround (MSS-TA) Routine MSS (MSS-MA)
all process units and tanks	process unit purgegas/drain/startup (except FCCU and SRU)	Vent to atmosphere	MSS-TA Uncontrolled MSS-MA Uncontrolled
Vacuum Trucks	removal and transfer of process and/or waste liquids	Vent to atmosphere	MSS-TA Uncontrolled MSS-MA Uncontrolled
Process units and tanks	Painting	Vent to atmosphere	MSS-TA Uncontrolled MSS-MA Uncontrolled
Process units and tanks	Miscellaneous chemical usage	Vent to atmosphere	MSS-TA Uncontrolled MSS-MA Uncontrolled
FRAC tanks	Temporary storage of process liquids and/or waste liquids	Vent to atmosphere	MSS-TA Uncontrolled MSS-MA Uncontrolled
Cleaning Slab	Washing of portable or mobile MSS or process equipment	vent to atmosphere	MSS-TA Uncontrolled MSS-MA Uncontrolled
Process units and tanks	Abrasive blasting	Vent to atmosphere	MSS-TA Uncontrolled
HDS	Remove spent catalyst, store on pad prior to transfer	Vent to atmosphere	MSS-TA Uncontrolled
Boiler 30-B-04	Startup and shutdown	Vent to atmosphere	30-B-04 MSS
Firewater Pump Engines	Test runs	Vent to atmosphere	16-P-11, 16-P-12, 16-P-13, and 16-P-14

Date: TBD

From: Joe Kupper
To: Justin Cherry
Cc: Cara Hill; Chad Dumas; Marquard, Meagan; "Arnosky, David (David.Arnosky@valero.com)"; Beth Echels
Subject: RE: Valero Refining-Texas LP AQA (Permit# 38754) Third Request for Additional Information
Date: Thursday, May 5, 2022 2:07:00 PM
Attachments: T4-5 Sitewide Parameters and Emission Rates.pdf
T6-2 NOS & SPL Results.pdf
T6-3 PSD Increment Results.pdf
image001.png

Justin,

Responses to each of your questions are shown below following each question. I will upload the revised modeling files and spreadsheets referenced in the responses to the TCFEQ ftp site and share with you.

Please let me know if you have any questions.

Thanks, Joe

Joe Kupper, P.E.
Principal Consultant

9737 Great Hills Trail, Suite 340 Austin, TX 78759
P 512.693.4186 M 512.940.5516
Email: joe.kupper@trinityconsultants.com

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From: Justin Cherry <justin.cherry@tceq.texas.gov>
Sent: Monday, April 25, 2022 10:32 AM
To: Joe Kupper <Joe.Kupper@trinityconsultants.com>
Cc: Cara Hill <Cara.Hill@Tceq.Texas.Gov>; Chad Dumas <Chad.Dumas@Tceq.Texas.Gov>
Subject: Valero Refining-Texas LP AQA (Permit# 38754) Third Request for Additional Information

Hey Joe,

The ADMT has some follow up items that need to be addressed before we can complete our review. Please address the following:

1. In the PM2.5 monitor calculations you provided, it appears that data from another sensor (POC) was included in the determination of the 2018 background concentration. The monitor calculations should be based on the same sensor being used. Please update the background information accordingly.

RESPONSE: The ambient data spreadsheet, "*2019-2021 PM2.5 Ambient Data Donna Park.xlsx*", has been updated to only read in the POC 3 values. The updated results table is attached. The results remain below the NAAQS (National Ambient Air Quality Standards).

2. There are many sources modeled without downwash parameters in the full impacts analyses. It appears that the majority of these are off-property sources, but there appear to be some site-wide sources. Why were some of the site-wide sources modeled without downwash parameters? Please address.

   RESPONSE: The full impact analysis model files have been updated to include all on-property sources in the BPIP (Building Profile Input Program) run. The results are summarized on the updated Table 6-2.

   For the updated 24-hour PM2.5 PSD (Prevention of Significant Deterioration) increment analysis, the receptor grid was divided into the following two grids:
   - **Receptors over adjacent property RN100214188 without the RN100214188 sources (see filenames with "RN100214188")**
   - **All other receptors with all sources (see filenames with "ALLOTHERREC")**

3. Source IDs MSSHOC and MSSSRU were modeled with release heights greater than 65 meters, but I did not see any BPIP files which included these sources to verify the GEP heights. Please address this discrepancy and verify whether the modeled release heights meet GEP.

   RESPONSE: The BPIP files (SWdownwash.pip, etc.) included with this submittal provide the justification that the modeled heights are correct. The GEP height for these stacks is 86.1 m.

4. Please provide the calculations/data for the modeled negative emission rates used in the 24-hr PM2.5 increment analysis for source IDs 122CT_1-8.

   RESPONSE: The emission rates for source IDs 122CT_1-8 were calculated as follows: (0.53 lb/hr - 2.63 lbhr)/8 = 0.263 lb/hr. 0.53 lb/hr is the new allowable emission rate and 2.63 b/hr is the current MAERT emission rate that was applicable prior to the 2013 installation of more efficient drift eliminators. The resulting change in emission rates is divided by 8 since each cell of the cooling tower is modeled as a separate point in the model.

   Since the increment modeling should be based on actual emissions, revised modeling has been performed with the cooling tower at a conservative emission rate of 0 lb/hr. The installation of upgraded cooling tower drift eliminators, after the $PM_{2.5}$ baseline date, resulted in a reduction of particulate matter emissions; however, actual daily data is not available to determine the actual amount of reduction for the 24-hour emission rate. Assuming that there was no reduction is conservative. An updated Table 4-5 showing the revised emission rates is attached.

In addition to these changes, the modeled emission rate for the 24-hour increment from source ID 118 has been refined to use the actual emission increase after the baseline date instead of the full allowable emission rate. The modeled emission rate of 4.01 lb/hr was determined by subtracting the pre-baseline actual lb/hr emission rate from the permit allowable emission rate. The pre-baseline emission rate is as follows: 20.63 tpy (2008/2009 average tpy) * 2000 lb/ton / 8760 hrs/yr = 4.71 lb/hr. Subtracting the pre-baseline emission rate from the permit allowable results in the modeled emission rate as follows: 8.72 lb/hr - 4.71 lb/hr = 4.01 lb/hr. The 2008/2009 emission inventory report for source 118 is attached.

5. For the 24-hr PM2.5 increment analysis, source ID MSSHOC was assumed to have a zero emission rate since it existed prior to the baseline date. However, the increments are based on changes to actual emissions, not allowable emissions. Changes in actual emissions since the baseline date affect increment. Please demonstrate that the actual emissions from this source are the same or have decreased since the baseline date. Otherwise, this source should be included in the analysis. This comment also applies to source ID 646030.

RESPONSE: After additional evaluation, the $PM_{2.5}$ emissions from source ID MSSHOC do not need to be included in the modeling since these would be double counting the modeled emission rate for source ID 121HOC. The short-term $PM_{2.5}$ emission for source ID MSSHOC are MSS emissions that are less than or equal to the 24-hour routine emission rate. Since the routine and MSS emission rates do not occur at the same time, only the routine increment emission rate is needed to be included in the modeling.

For Source ID 646030, RN102609898 is not required to submit an emission inventory; therefore, no available data is available to determine the change in actual emissions. Given that the increment is for a 24-hour averaging period, it is reasonable to conclude that there would be no change in actual emissions prior to or after the baseline date. Also, it is important to note that all of the emission inventory sources operating prior to the baseline date were modeled at the maximum hourly full allowable emission rates, which is very conservative for the PSD increment analysis. Further refinement for all these sources could be made to account for the actual emissions prior to the baseline date. The 24-hour increment modeling is very conservative.

6. Why does the 1-hr NO2 NAAQS analysis include more off-property sources than the annual NO2 NAAQS analysis?

RESPONSE: Sources listed in the 1-hour NO_2 APAD retrieval were not listed in the annual NO2 APAD retrieval. This accounts for the discrepancy. A cursory review of the data suggests that the sources missing from the annual APAD retrieval were listed in MAERTs with only a short-term limit and that annual emissions were included in a separate annual emission cap listed in the MAERT. Instead of reviewing all instances, the annual NO2 modeling has been revised to conservatively model the 1-hour emission rates for 8760 hours in the annual NO2 modeling. The revised APAD.xlsx and modeling files will be uploaded to the TCEQ ftp site and the revised NAAQS and PSD Increment results are

shown on the attached Tables 6-2 and 6-3.

7. The following sources were included in the de minimis analyses but not the full impacts analyses: 121MSS, C_121SRU, C_162, and C_114. Please address these discrepancies.

   RESPONSE: The project emissions were modeled from these sources, and the site-wide emissions were also modeled from the sources, but using the following model IDs:
   121MSS modeled as MSSSRU & MSSHOC (same stack with various MSS emissions included)
   C_121SRU modeled as 121SRU
   C_162 modeled as 162
   C_114 modeled as 114

Failure to submit all of the requested information within 14 business days of the date of this notification will delay the technical review of your application.

Feel free to contact me if you require any clarification or have any questions.

Thanks,
justin

Justin Cherry, P.E.
TCEQ
Air Permits Division
Air Dispersion Modeling Team
512-239-0955

Table 4-5

Site-wide Parameters and Emission Rates

HOC Reconfiguration Project

Valero Refining - Texas - West Plant Refinery, Corpus Christi

Updated May 5, 2022

Permit/PBR	EPN	Model ID	Source Description	Note	X	Y	Base Elevation	Stack Height	Temp	Velocity	Diameter	NO_2 (1-hr)	NO_2 (Annual)	$PM_{2.5}$ (24-hr) (NAAQS)	$PM_{2.5}$ (24-hr) (PSD Increment) [4], [5], [6], [7]	$PM_{2.5}$ (Annual) (NAAQS)	$PM_{2.5}$ (Annual) (PSD Increment) [8]	SO_2 (1-hr) (NAAQS)	SO_2 (1-hr) (SPL)	SO_2 (Annual)	H_2SO_4 (1-hr)
					meters	*meters*	*meters*	*feet*	*°F*	*fps*	*feet*	*lb/hr*	*tpy*	*lb/hr*	*lb/hr*	*tpy*	*tpy*	*lb/hr*	*lb/hr*	*tpy*	*lb/hr*
38754	30-B-05	30_B_05	Boiler 30-B-05 (Routine)		649,645	3,077,940	8.89	60	300	47.87	7.8	7.16	30.14	3.56	3.56	14.16	14.16	7.70	7.70	21.15	
38754	30-B-05	30_B_05M	Boiler 30-B-05 (MSS)	[3]	649,645	3,077,940	8.89	60	300	47.87	7.8	0.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
38754	HOC-PP-CT	HOCPPCT	New Cooling Tower		649,719	3,077,951	8.86	40	-469.57	24.00	24.0	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	
38754	121/30-B-05	MEROX	New MEROX Vent		649,645	3,077,940	8.89	60	300	47.87	7.8	0.00	0.00	0.00	0.00	0.00	0.00	3.86	3.86	16.91	
38754	1	1	Heater - Crude Heater (01-H-01)		648,858	3,077,931	4.64	121	350	25.5	6.9	9.72	19.24	1.21	1.21	4.00	4.00	2.50	2.50	5.71	
38754	74	74	Vacuum Heater		648,842	3,077,901	4.59	111	740	33.2	5.6	5.98	26.21	0.74	0.74	3.26	3.26	1.37	1.37	4.13	
38754	114	114	Heater - Desalter Heater (11-H-01)		649,241	3,077,780	8.96	100	350	56.3	3.7	3.96	17.34	0.74	0.74	3.23	3.23	1.52	1.52	4.60	
38754	115	115	HDS Heaters		649,479	3,077,746	8.93	90	350	29.5	6.1	9.70	42.07	1.20	1.20	5.22	5.22	2.49	2.49	7.45	
38754	116	116	Heater - HDS Pre-Heater (12-H-02)		649,315	3,077,772	8.93	50	770	35.3	3.3	2.36	8.28	0.15	0.15	0.51	0.51	0.30	0.30	0.73	
38754	117	117	Heater - Alky Frac. Reb. (31-H-01)		649,489	3,077,810	8.95	90	350	69.0	3.5	5.64	19.86	1.17	1.17	4.11	4.11	2.41	2.41	5.86	
38754	118	118	Hydrogen Reformer Heater		649,222	3,077,857	8.94	121	350	49.40	11.9	70.21	284.40	8.72	4.01	35.80	35.80	44.53	44.53	122.64	
38754	119	119	Heater - Sulften Heater (46-H-01)		649,319	3,078,050	8.99	94	350	8.0	4.2	2.62	5.21	0.16	0.16	0.32	0.32	0.34	0.34	0.63	
38754	120	120	Heater - Butamer Heater (36-H-01)		649,708	3,077,865	8.82	81	350	5.2	4.2	2.00	4.30	0.12	0.12	0.26	0.26	0.26	0.26	0.41	
38754	121	121HOC	HOC Belco Scrubber		649,347	3,077,978	9.02	225	185	69.10	14.0	384.12	473.81	140.00	11.50	569.40	221.90	219.22	219.22	420.12	49.00
38754	121	121SRU	Sulfur Recovery		649,347	3,077,978	9.02	225	185	69.10	14.0	54.64	239.31	24.72	24.72	98.38	98.38	191.32	191.32	837.99	
38754	124	124	WWTP Control Device		649,175	3,078,106	9.18	20	1275	7.30	3.7	0.45	1.76	0.00	0.00	0.00	0.00	0.03	0.03	0.13	
38754	131	131	Heater - Crude Preflash (01-H-02)		648,844	3,077,912	4.61	30	350	29.6	3.5	1.77	6.29	0.13	0.13	0.49	0.49	0.27	0.27	0.64	
38754	132	132	Heater - Crude Stabilizer (01-H-03)		648,838	3,077,913	4.56	77	955	21.1	3.0	0.48	2.06	0.04	0.04	0.15	0.15	0.07	0.07	0.22	
38754	150	150	HCU Heater		649,415	3,077,685	8.97	131	350	39.50	6.3	12.19	12.72	1.51	1.51	0.95	0.95	3.13	3.13	8.63	
38754	151	151	Heater - NHU Heater (48-H-01)		649,238	3,077,637	9.16	116	660	16.0	4.0	3.90	17.08	0.29	0.29	1.27	1.27	0.60	0.60	1.81	
38754	152	152	CRU Heater		649,204	3,077,650	9.09	213	350	26.4	11.0	39.31	133.06	4.18	4.18	14.16	14.16	9.80	9.80	22.69	
38754	153	153	Heater - HR Boiler (30-B-02)		649,548	3,077,865	8.90	50	350	32.5	7.0	22.56	82.34	2.10	1.32	5.51	5.51	4.34	4.34	10.66	
38754	162	162	Oleflex Heater		649,715	3,077,645	8.94	213	350	17.5	10.0	23.34	65.75	2.90	2.90	11.62	11.62	5.99	5.99	16.57	
38754	172	172	Heater - RSU Heater (49-H-71)		649,198	3,077,742	8.99	147	350	42.7	4.25	3.96	15.26	0.49	0.49	1.90	1.90	1.02	1.02	2.70	
38754	195	195	Heater - GDU Charge Heater (52-H- 01)		649,109	3,077,697	9.16	173	531	19.2	9.0	5.80	14.69	1.23	1.23	4.61	4.61	2.55	2.55	6.57	
38754	122	122CT_1	Cooling Tower - HOC	[1]	649,510	3,078,035	9.08	75	-475	30.0	32.0	0.00	0.00	0.066	0.000	0.245	0.25	0.00	0.00	0.00	
38754	122	122CT_2	Cooling Tower - HOC	[1]	649,519	3,078,031	9.05	75	-475	30.0	32.0	0.00	0.00	0.066	0.000	0.245	0.25	0.00	0.00	0.00	
38754	122	122CT_3	Cooling Tower - HOC	[1]	649,529	3,078,028	9.04	75	-475	30.0	32.0	0.00	0.00	0.066	0.000	0.245	0.25	0.00	0.00	0.00	
38754	122	122CT_4	Cooling Tower - HOC	[1]	649,537	3,078,024	9.02	75	-475	30.0	32.0	0.00	0.00	0.066	0.000	0.245	0.25	0.00	0.00	0.00	
38754	122	122CT_5	Cooling Tower - HOC	[1]	649,547	3,078,021	9.02	75	-475	30.0	32.0	0.00	0.00	0.066	0.000	0.245	0.25	0.00	0.00	0.00	
38754	122	122CT_6	Cooling Tower - HOC	[1]	649,556	3,078,017	9.07	75	-475	30.0	32.0	0.00	0.00	0.066	0.000	0.245	0.25	0.00	0.00	0.00	
38754	122	122CT_7	Cooling Tower - HOC	[1]	649,565	3,078,014	9.01	75	-475	30.0	32.0	0.00	0.00	0.066	0.000	0.245	0.25	0.00	0.00	0.00	
38754	122	122CT_8	Cooling Tower - HOC	[1]	649,574	3,078,010	8.96	75	-475	30.0	32.0	0.00	0.00	0.066	0.000	0.245	0.25	0.00	0.00	0.00	
38754	123	123CT_1	Cooling Tower - Alky	[1]	649,684	3,077,965	8.73	60	-475	30.0	28.0	0.00	0.00	0.063	0.063	0.18	0.18	0.00	0.00	0.00	
38754	123	123CT_2	Cooling Tower - Alky	[1]	649,693	3,077,960	8.88	60	-475	30.0	28.0	0.00	0.00	0.063	0.063	0.18	0.18	0.00	0.00	0.00	
38754	123	123CT_3	Cooling Tower - Alky	[1]	649,702	3,077,956	8.91	60	-475	30.0	28.0	0.00	0.00	0.063	0.063	0.18	0.18	0.00	0.00	0.00	
38754	16-P-04	16_P_04	Engine - 16-P-04	[2] [9]	649,567	3,077,680	8.96	7	600	0.0033	0.0033	0.0475	0.21	0.030	0.030	0.02	0.02	0.0040	0.047	0.02	
38754	16-P-07	16_P_07	Engine - 16-P-07	[2] [9]	649,595	3,077,662	8.96	7	600	0.0033	0.0033	0.0575	0.15	0.037	0.037	0.01	0.01	0.0049	0.058	0.01	
38754	16-P-11	16_P_11	Engine - 16-P-11	[2] [9]	649,978	3,077,684	8.26	7	894	135.0	0.67	0.0197	0.09	0.005	0.005	0.01	0.01	0.0006	0.020	0.01	

Table 4-5

Site-wide Parameters and Emission Rates

HOC Reconfiguration Project

Valero Refining - Texas - West Plant Refinery, Corpus Christi

Permit/PBR	EPN	Model ID	Source Description	Note	X	Y	Base Elevation	Stack Height	Temp	Velocity	Diameter	NO_2 (1-hr)	NO_2 (Annual)	$PM_{2.5}$ (24-hr) (NAAQS)	$PM_{2.5}$ (24-hr) (PSD Increment) [4], [5], [6], [7]	$PM_{2.5}$ (Annual) (NAAQS)	$PM_{2.5}$ (Annual) (PSD Increment) [8]	SO_2 (1-hr) (NAAQS)	SO_2 (1-hr) (SPL)	SO_2 (Annual)	H_2SO_4 (1-hr)
					meters	meters	meters	feet	°F	fps	feet	lb/hr	tpy	lb/hr	lb/hr	tpy	tpy	lb/hr	lb/hr	tpy	lb/hr
38754	16-P-12	16_P_12	Engine - 16-P-12	[2] [9]	649,981	3,077,690	8.26	7	894	135.0	0.67	0.0197	0.09	0.005	0.005	0.01	0.01	0.0006	0.020	0.01	
38754	16-P-13	16_P_13	Engine - 16-P-13	[2] [9]	649,983	3,077,697	8.26	7	894	135.0	0.67	0.0197	0.09	0.005	0.005	0.01	0.01	0.0006	0.020	0.01	
38754	16-P-14	16_P_14	Engine - 16-P-14	[2] [9]	649,985	3,077,703	8.26	7	894	135.0	0.67	0.0197	0.09	0.005	0.005	0.01	0.01	0.0006	0.020	0.01	
38754	167-CT	167CT_1	Cooling Tower - BUP	[1]	649,862	3,077,889	8.37	56	-475	30.0	35.0	0.00	0.00	0.335	0.335	1.44	1.44	0.00	0.00	0.00	
38754	167-CT	167CT_2	Cooling Tower - BUP	[1]	649,878	3,077,883	8.38	56	-475	30.0	35.0	0.00	0.00	0.335	0.335	1.44	1.44	0.00	0.00	0.00	
38754	1CT	1CT_1	Cooling Tower - Crude	[1]	648,941	3,077,915	5.27	30	-475	30.0	6.0	0.00	0.00	0.030	0.030	0.11	0.11	0.00	0.00	0.00	
38754	1CT	1CT_2	Cooling Tower - Crude	[1]	648,946	3,077,911	5.61	30	-475	30.0	6.0	0.00	0.00	0.030	0.030	0.11	0.11	0.00	0.00	0.00	
38754	21 BH	21BH	Magnacat Unit		649,444	3,077,965	9.06	52.8	-475	0.0033	0.0033	0.00	0.00	0.18	0.18	0.60	0.60	0.00	0.00	0.00	
38754	30-B-04	30_B_04	Boiler 30-B-04		649,600	3,077,800	8.87	60	400	57.0	8.0	8.25	20.02	4.10	4.10	9.95	9.95	8.65	8.65	14.47	
38754	49-H-90	49_H_90	Heater - C7 Splitter Reb. (49-H-90)		649,186	3,077,705	9.00	160	350	14.5	5.0	4.25	15.46	0.79	0.79	3.01	3.01	1.64	1.64	4.29	
38754	83-P-136A	83P_136A	Engine 83-P-136A-EN	[2] [9]	649,252	3,078,160	9.26	10	600	0.0030	0.0030	0.0441	0.19	0.016	0.02	0.01	0.01	0.0052	0.044	0.02	
38754	83-P-136B	83P_136B	Engine 83-P-136B-EN	[2] [9]	649,253	3,078,164	9.26	10	600	0.0030	0.0030	0.0441	0.19	0.016	0.02	0.01	0.01	0.0052	0.044	0.02	
38754	TRUCKCOMB	TRKVCU	Loading - Truck Combustor		648,838	3,077,708	6.70	35	1400	15.00	6.0	7.64	11.38	0.23	0.23	0.34	0.34	0.02	0.02	0.03	
38754	126, 127, 158	158	Routine Flare Cap		648,957	3,077,790	9.20	24	1832	65.6	1.42	23.04	20.77	0.00	0.00	0.00	0.00	3.55	3.55	10.43	
38754	MSS CAPS	MSSFLR	Flaring	[2]	648,976	3,077,720	9.18	275	1832	65.62	25.76	3.090	11.07		0.00		0.00	21.836	996.29	19.48	
38754/13	MSS CAPS	MSSTK4	Tank MSS	[3]	648,701	3,077,843	4.86	12.75	1400	23.80	5.10	0.289	0.856	0.153	0.15	0.045	0.05	0.022	0.022	0.01	
38754/13	MSS CAPS	MSSTK7	Tank MSS	[3]	648,832	3,078,016	4.42	12.75	1400	23.80	5.10	0.289	0.856	0.153	0.15	0.045	0.05	0.022	0.022	0.01	
38754/13	MSS CAPS	MSSTK11	Tank MSS	[3]	649,146	3,078,272	4.33	12.75	1400	24.00	5.10	0.289	0.856	0.153	0.15	0.045	0.05	0.022	0.022	0.01	
38754/13	MSS CAPS	MSSTK12	Tank MSS	[3]	649,196	3,078,202	9.11	12.75	1400	23.80	5.10	0.289	0.856	0.153	0.15	0.045	0.05	0.022	0.022	0.01	
38754	MSS CAPS	MSSSRU	SRU Startup/Shutdown	[2]	649,347	3,077,978	9.02	225.00	185.00	69.10	14.00	0.231	2.66	0.64	0.64	0.03	0.03	1.886	344.27	16.44	
38754	MSS CAPS	MSSHOC	HOC Startup/Shutdown	[2]	649,347	3,077,978	9.02	225.00	185.00	69.10	14.00	1.222	5.35	79.52	0.00	1.19	1.19	0.292	85.39	1.28	
38754	MSS CAPS	MSSPB	Painting/Blasting		649,173	3,077,732	8.99	10	-460	0.0033	0.0033			0.36	0.36	0.12	0.12				
38754	MSS CAPS	MSSDECOK	Heater Decoking		648,865	3,077,905	4.7	20	500	141	0.67	0.01	0.03	0.08	0.08	0.01	0.01	1.57	1.57	0.09	
20740	163	163	Boiler 30-B-03		649,626	3,077,895	8.69	126	350	27.2	4.5	22.21	97.28	2.07	0.99	9.06	9.06	4.27	4.27	12.91	
20992	49-H-91	49_H_91	C8 Splitter Reboiler		649,194	3,077,724	8.99	168	350	65.2	6.75	6.13	26.85	1.14	1.14	5.00	5.00	2.36	2.36	10.35	
106965	900	900	Process Heater		649,611	3,077,686	8.96	180	300	13.8	11.6	12.03	10.13	2.21	2.21	7.45	7.45	8.62	8.62	10.76	
106965	901	901	Cooling Tower		649,894	3,077,878	8.41	60	-475	30.0	35.0	0.00	0.00	0.03	0.03	0.12	0.12	0.00	0.00	0.00	
109543	909	909	Vapor Combustion Unit		649,495	3,078,164	2.19	60	1600	50.0	12.0	12.68	37.99	0.63	0.63	1.89	1.89	3.26	3.26	4.04	
146600	TKVCU	TKVCU	West Plant Storage Tank VCU		648,850	3,077,958	4.52	35	1400	30.0	7.7	3.81	16.65	0.19	0.19	0.83	0.83	0.01	0.01	0.06	
38754	168	168	Oleflex CCR		649,743	3,077,685	8.93	100	350	29.6	3.5										0.01
155846	PVCU	C_PVCU	LPG VCU		649,160	3,078,322	6.70	18	1000	22.00	5.9	1.09	4.76	0.06	0.06	0.25	0.25	0.02	0.02	0.08	

1. Total allowable emission rate for the cooling towers was divided equally among the number of cells for the cooling tower.
2. See Table 4-3 for 1-hour NO_2 and SO_2 emission rate calculation using intermittent guidance.
3. See Table 4-3 for 1-hour NO_2 emission rate calculation using intermittent guidance.
4. For the PSD Increment modeling, the short-term PM2.5 emission rate increase for Model ID 121HOC calculated using the maximum coke burn rate for the period of 2008 - 2009 (128.5 MLBH) and the proposed maximum coke burn rate (140 MLBH).
5. For the PSD Increment modeling, the short-term PM2.5 emission rate increase for Model IDs 118, 153 and 163 are calculated by subtracting the 2008/2009 average annual emission rate from the permit allowable emission rate and converting to a pound per hour emission rate.
6. After the PM2.5 baseline date the cooling tower drift eliminators were upgraded to reduce particulate matter emissions; however, the emission decrease has not been included in the increment modleing to be conservative.
7. For the PSD Increment modeling, the short-term PM2.5 emission rate is not needed for Model ID MSSHOC since MSS emissions are less than or equal to the 24-hour routine emission rate and the routine increment emission rate is included with source ID 121HOC.
8. For the PSD Increment modeling, the annual PM2.5 emission rate for Model ID 121HOC is based on the proposed allowable emission rate minus the average 2008/2009 actual emission rate (569.4 tpy - 347.5tpy)
9. Engine testing occurs 1 hour per day; therefore, the maximum 1-hour emission rate is divided by 24 to obtain the average 24-hour emission rate.

Table 6-2

Updated May 5, 2022

NAAQS and State Property Line Modeling Results

HOC Reconfiguration Project

Valero Refining - Texas - West Plant Refinery, Corpus Christi

Constituent	Averaging Period	Meteorological Data Years	Site-wide plus Off-Property GLCmax [1]	Secondary $PM_{2.5}$	Background Concentration	Total GLCmax [2]	Standard	Is Project Greater than Standard?
			µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	yes/no
Nitrogen Dioxide (NO_2)	1-Hour	2014-2018	121.4	---	33.9	155.3	188	No
	Annual	2014	23.6	---	4.5	28.1	100	No
		2015	24.6	---	4.5	29.1	100	No
		2016	25.0	---	4.5	29.5	100	No
		2017	24.9	---	4.5	29.4	100	No
		2018	24.5	---	4.5	29.0	100	No
$PM_{2.5}$	24-Hour	2014-2018	14.8	0.36	19.0	34.2	35	No
	Annual	2014-2018	3.6	0.01	7.7	11.3	12	No
Sulfur Dioxide (SO_2)	30-minute	2014-2018	182.9	---	---	182.9	1021	No
	1-Hour	2014-2018	151.0	---	14.5	165.4	196	No
Sulfuric Acid (H_2SO_4)	1-Hour	2016	8.5	---	---	8.5	50	No
	24-Hour	2016	3.1	---	---	3.1	15	No

[1] The "Site-wide plus Off-Property GLCmax" is the maximum modeled concentration from the site-wide emissions plus the off-property emissions inventory for all constituents and averaging periods, except the 30-minute SO_2 and 1-hour and 24-hour H_2SO_4 State Property Line analyses. These analyses only include the site-wide emissions (i.e., no off-property sources or background concentrations are added).

[2] The "Total GLCmax" is the sum of the "Site-wide plus Off-Property GLCmax" plus the "Secondary $PM_{2.5}$", where applicable, plus the "Background Concentration".

Table 6-3

PSD Increment Results

HOC Reconfiguration Project

Valero Refining - Texas - West Plant Refinery, Corpus Christi

Updated May 5, 2022

Constituent	Averaging Period	Meteorological Data Years	Site-wide plus Off-property GLCmax	Secondary $PM_{2.5}$	Total GLCmax[1]	PSD Increment	Is GLCmax Greater than PSD Increment?
			µg/m^3	µg/m^3	µg/m^3	µg/m^3	yes/no
Nitrogen Dioxide (NO_2)	Annual [2]	2014	23.6	---	23.6	25	No
		2015	24.6	---	24.6	25	No
		2016	25.0	---	25.0	25	No
		2017	24.9	---	24.9	25	No
		2018	24.5	---	24.5	25	No
$PM_{2.5}$	24-Hour	2014	7.4	0.36	7.7	9	No
		2015	8.0	0.36	8.3	9	No
		2016	7.8	0.36	8.1	9	No
		2017	8.5	0.36	8.9	9	No
		2018	7.7	0.36	8.1	9	No
	Annual	2014	2.8	0.01	2.8	4	No
		2015	2.9	0.01	2.9	4	No
		2016	2.8	0.01	2.9	4	No
		2017	2.9	0.01	2.9	4	No
		2018	2.8	0.01	2.8	4	No
Sulfur Dioxide (SO_2)	24-Hour	2014-2018	68.2	---	68.2	91	No
	Annual	2014	10.4	---	10.4	20	No
		2015	10.9	---	10.9	20	No
		2016	10.9	---	10.9	20	No
		2017	10.9	---	10.9	20	No
		2018	11.0	---	11.0	20	No

[1] The "Total GLCmax" is the maximum ground-level concentration from the modeling of the project emissions (i.e., "Project GLCmax") for all constituents, except $PM_{2.5}$. For $PM_{2.5}$, the "Total GLCmax" is the "Project GLCmax" plus the "Secondary PM2.5" contribution.

[2] The NAAQS results for annual NO2 were conservatively used to demonstrate compliance with the annual PSD Increemnt for NO2.

Year	98th Percentile	Annual Average
2018	16.40	7.66
2019	20.30	8.13
2020	20.40	7.27
3-yr avg	**19.03**	**7.69**

Prevention of Significant Deterioration Permit Application

TCEQ Air Quality Permit Nos. 38754, PSDTX324M14
HOC Reconfiguration Project

See Electronic File Entitled:

“2022.05.05 Electronic Files.zip”

From:	Joe Kupper
To:	Justin Cherry
Cc:	Cara Hill; Chad Dumas; Marquard, Meagan; "Arnosky, David (David.Arnosky@valero.com)"; Beth Echels
Subject:	RE: Valero Refining-Texas LP AQA (Permit# 38754) Third Request for Additional Information
Date:	Monday, May 9, 2022 9:53:00 AM
Attachments:	image001.png T6-2 NOS & SPL Results.pdf T6-3 PSD Increment Results.pdf

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Justin,

Per our discussion, attached are revised Table 6-2 and 6-3 with the ARM2 ratio of 0.9 used to refine the annual NO2 results.

Please let me know if you have any questions.

Thanks, Joe
512-693-4186

From: Justin Cherry <justin.cherry@tceq.texas.gov>
Sent: Thursday, May 5, 2022 2:34 PM
To: Joe Kupper <Joe.Kupper@trinityconsultants.com>
Cc: Cara Hill <Cara.Hill@Tceq.Texas.Gov>; Chad Dumas <Chad.Dumas@Tceq.Texas.Gov>; Marquard, Meagan <Meagan.Marquard@valero.com>; 'Arnosky, David (David.Arnosky@valero.com)' <David.Arnosky@valero.com>; Beth Echels <Beth.Echels@trinityconsultants.com>
Subject: RE: Valero Refining-Texas LP AQA (Permit# 38754) Third Request for Additional Information

Hey Joe,

Responses received and files downloaded from the ftp site.

Thanks,
justin

Justin Cherry, P.E.
TCEQ
Air Permits Division
Air Dispersion Modeling Team
512-239-0955

How are we doing? Fill out our online customer satisfaction survey at www.tceq.texas.gov/customersurvey

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From: Joe Kupper <Joe.Kupper@trinityconsultants.com>
Sent: Thursday, May 5, 2022 2:07 PM
To: Justin Cherry <justin.cherry@tceq.texas.gov>
Cc: Cara Hill <Cara.Hill@Tceq.Texas.Gov>; Chad Dumas <Chad.Dumas@Tceq.Texas.Gov>; Marquard, Meagan <Meagan.Marquard@valero.com>; 'Arnosky, David (David.Arnosky@valero.com)'

<David.Arnosky@valero.com>; Beth Echels <Beth.Echels@trinityconsultants.com>
Subject: RE: Valero Refining-Texas LP AQA (Permit# 38754) Third Request for Additional Information

Justin,

Responses to each of your questions are shown below following each question. I will upload the revised modeling files and spreadsheets referenced in the responses to the TCFEQ ftp site and share with you.

Please let me know if you have any questions.

Thanks, Joe

Joe Kupper, P.E.
Principal Consultant

9737 Great Hills Trail, Suite 340 Austin, TX 78759
P 512.693.4186 M 512.940.5516
Email: joe.kupper@trinityconsultants.com

A picture containing icon Description automatically generated

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From: Justin Cherry <justin.cherry@tceq.texas.gov>
Sent: Monday, April 25, 2022 10:32 AM
To: Joe Kupper <Joe.Kupper@trinityconsultants.com>
Cc: Cara Hill <Cara.Hill@Tceq.Texas.Gov>; Chad Dumas <Chad.Dumas@Tceq.Texas.Gov>
Subject: Valero Refining-Texas LP AQA (Permit# 38754) Third Request for Additional Information

Hey Joe,

The ADMT has some follow up items that need to be addressed before we can complete our review. Please address the following:

1. In the PM2.5 monitor calculations you provided, it appears that data from another sensor (POC) was included in the determination of the 2018 background concentration. The monitor calculations should be based on the same sensor being used. Please update the background information accordingly.

   RESPONSE: The ambient data spreadsheet, "*2019-2021 PM2.5 Ambient Data Donna Park.xlsx*", has been updated to only read in the POC 3 values. The updated results table is attached. The results remain below the NAAQS (National Ambient Air Quality Standards).

2. There are many sources modeled without downwash parameters in the full impacts analyses. It appears that the majority of these are off-property sources, but there appear to be some site-wide sources. Why were some of the site-wide sources modeled without downwash parameters? Please address.

RESPONSE: The full impact analysis model files have been updated to include all on-property sources in the BPIP (Building Profile Input Program) run. The results are summarized on the updated Table 6-2.

For the updated 24-hour PM2.5 PSD (Prevention of Significant Deterioration) increment analysis, the receptor grid was divided into the following two grids:

- **Receptors over adjacent property RN100214188 without the RN100214188 sources (see filenames with "RN100214188")**
- **All other receptors with all sources (see filenames with "ALLOTHERREC")**

3. Source IDs MSSHOC and MSSSRU were modeled with release heights greater than 65 meters, but I did not see any BPIP files which included these sources to verify the GEP heights. Please address this discrepancy and verify whether the modeled release heights meet GEP.

RESPONSE: The BPIP files (SWdownwash.pip, etc.) included with this submittal provide the justification that the modeled heights are correct. The GEP height for these stacks is 86.1 m.

4. Please provide the calculations/data for the modeled negative emission rates used in the 24-hr PM2.5 increment analysis for source IDs 122CT_1-8.

RESPONSE: The emission rates for source IDs 122CT_1-8 were calculated as follows: (0.53 lb/hr - 2.63 lbhr)/8 = 0.263 lb/hr. 0.53 lb/hr is the new allowable emission rate and 2.63 b/hr is the current MAERT emission rate that was applicable prior to the 2013 installation of more efficient drift eliminators. The resulting change in emission rates is divided by 8 since each cell of the cooling tower is modeled as a separate point in the model.

Since the increment modeling should be based on actual emissions, revised modeling has been performed with the cooling tower at a conservative emission rate of 0 lb/hr. The installation of upgraded cooling tower drift eliminators, after the $PM_{2.5}$ baseline date, resulted in a reduction of particulate matter emissions; however, actual daily data is not available to determine the actual amount of reduction for the 24-hour emission rate. Assuming that there was no reduction is conservative. An updated Table 4-5 showing the revised emission rates is attached.

In addition to these changes, the modeled emission rate for the 24-hour increment from source ID 118 has been refined to use the actual emission increase after the baseline date instead of the full allowable emission rate. The modeled emission rate of 4.01 lb/hr was determined by subtracting the pre-baseline actual lb/hr emission rate from the permit

allowable emission rate. The pre-baseline emission rate is as follows: 20.63 tpy (2008/2009 average tpy) * 2000 lb/ton / 8760 hrs/yr = 4.71 lb/hr. Subtracting the pre-baseline emission rate from the permit allowable results in the modeled emission rate as follows: 8.72 lb/hr - 4.71 lb/hr = 4.01 lb/hr. The 2008/2009 emission inventory report for source 118 is attached.

5. For the 24-hr PM2.5 increment analysis, source ID MSSHOC was assumed to have a zero emission rate since it existed prior to the baseline date. However, the increments are based on changes to actual emissions, not allowable emissions. Changes in actual emissions since the baseline date affect increment. Please demonstrate that the actual emissions from this source are the same or have decreased since the baseline date. Otherwise, this source should be included in the analysis. This comment also applies to source ID 646030.

   RESPONSE: After additional evaluation, the $PM_{2.5}$ emissions from source ID MSSHOC do not need to be included in the modeling since these would be double counting the modeled emission rate for source ID 121HOC. The short-term $PM_{2.5}$ emission for source ID MSSHOC are MSS emissions that are less than or equal to the 24-hour routine emission rate. Since the routine and MSS emission rates do not occur at the same time, only the routine increment emission rate is needed to be included in the modeling.

   For Source ID 646030, RN102609898 is not required to submit an emission inventory; therefore, no available data is available to determine the change in actual emissions. Given that the increment is for a 24-hour averaging period, it is reasonable to conclude that there would be no change in actual emissions prior to or after the baseline date. Also, it is important to note that all of the emission inventory sources operating prior to the baseline date were modeled at the maximum hourly full allowable emission rates, which is very conservative for the PSD increment analysis. Further refinement for all these sources could be made to account for the actual emissions prior to the baseline date. The 24-hour increment modeling is very conservative.

6. Why does the 1-hr NO2 NAAQS analysis include more off-property sources than the annual NO2 NAAQS analysis?

   RESPONSE: Sources listed in the 1-hour NO_2 APAD retrieval were not listed in the annual NO2 APAD retrieval. This accounts for the discrepancy. A cursory review of the data suggests that the sources missing from the annual APAD retrieval were listed in MAERTs with only a short-term limit and that annual emissions were included in a separate annual emission cap listed in the MAERT. Instead of reviewing all instances, the annual NO2 modeling has been revised to conservatively model the 1-hour emission rates for 8760 hours in the annual NO2 modeling. The revised APAD.xlsx and modeling files will be uploaded to the TCEQ ftp site and the revised NAAQS and PSD Increment results are shown on the attached Tables 6-2 and 6-3.

7. The following sources were included in the de minimis analyses but not the full impacts analyses: 121MSS, C_121SRU, C_162, and C_114. Please address these discrepancies.

RESPONSE: The project emissions were modeled from these sources, and the site-wide emissions were also modeled from the sources, but using the following model IDs:
121MSS modeled as MSSSRU & MSSHOC (same stack with various MSS emissions included)
C_121SRU modeled as 121SRU
C_162 modeled as 162
C_114 modeled as 114

Failure to submit all of the requested information within 14 business days of the date of this notification will delay the technical review of your application.

Feel free to contact me if you require any clarification or have any questions.

Thanks,
justin

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TCEQ
Air Permits Division
Air Dispersion Modeling Team
512-239-0955

Table 6-2

Updated May 9, 2022

NAAQS and State Property Line Modeling Results

HOC Reconfiguration Project

Valero Refining - Texas - West Plant Refinery, Corpus Christi

Constituent	Averaging Period	Meteorological Data Years	Site-wide plus Off-Property GLCmax [1]	Secondary $PM_{2.5}$	Background Concentration	Total GLCmax [2]	Standard	Is Project Greater than Standard?
			µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	yes/no
Nitrogen Dioxide (NO_2)	1-Hour	2014-2018	121.4	---	33.9	155.3	188	No
	Annual [3]	2014	21.2	---	4.5	25.8	100	No
		2015	22.1	---	4.5	26.7	100	No
		2016	22.5	---	4.5	27.0	100	No
		2017	22.4	---	4.5	26.9	100	No
		2018	22.1	---	4.5	26.6	100	No
$PM_{2.5}$	24-Hour	2014-2018	14.8	0.36	19.0	34.2	35	No
	Annual	2014-2018	3.6	0.01	7.7	11.3	12	No
Sulfur Dioxide (SO_2)	30-minute	2014-2018	182.9	---	---	182.9	1021	No
	1-Hour	2014-2018	151.0	---	14.5	165.4	196	No
Sulfuric Acid (H_2SO_4)	1-Hour	2016	8.5	---	---	8.5	50	No
	24-Hour	2016	3.1	---	---	3.1	15	No

[1] The "Site-wide plus Off-Property GLCmax" is the maximum modeled concentration from the site-wide emissions plus the off-property emissions inventory for all constituents and averaging periods, except the 30-minute SO_2 and 1-hour and 24-hour H_2SO_4 State Property Line analyses. These analyses only include the site-wide emissions (i.e., no off-property sources or background concentrations are added).

[2] The "Total GLCmax" is the sum of the "Site-wide plus Off-Property GLCmax" plus the "Secondary $PM_{2.5}$", where applicable, plus the "Background Concentration".

[3] Since the Ambient Ratio Mehtod2 (ARM2) was not selected in the annual NO2 modeling, the default factor of 0.9 is applied to the results shown in this table.

Table 6-3

Updated May 9, 2022

PSD Increment Results

HOC Reconfiguration Project

Valero Refining - Texas - West Plant Refinery, Corpus Christi

Constituent	Averaging Period	Meteorological Data Years	Site-wide plus Off-property GLCmax	Secondary $PM_{2.5}$	Total GLCmax [1]	PSD Increment	Is GLCmax Greater than PSD Increment?
			µg/m^3	µg/m^3	µg/m^3	µg/m^3	yes/no
Nitrogen Dioxide (NO_2)	Annual [2] [3]	2014	21.2	---	21.2	25	No
		2015	22.1	---	22.1	25	No
		2016	22.5	---	22.5	25	No
		2017	22.4	---	22.4	25	No
		2018	22.1	---	22.1	25	No
$PM_{2.5}$	24-Hour	2014	7.4	0.36	7.7	9	No
		2015	8.0	0.36	8.3	9	No
		2016	7.8	0.36	8.1	9	No
		2017	8.5	0.36	8.9	9	No
		2018	7.7	0.36	8.1	9	No
	Annual	2014	2.8	0.01	2.8	4	No
		2015	2.9	0.01	2.9	4	No
		2016	2.8	0.01	2.9	4	No
		2017	2.9	0.01	2.9	4	No
		2018	2.8	0.01	2.8	4	No
Sulfur Dioxide (SO_2)	24-Hour	2014-2018	68.2	---	68.2	91	No
	Annual	2014	10.4	---	10.4	20	No
		2015	10.9	---	10.9	20	No
		2016	10.9	---	10.9	20	No
		2017	10.9	---	10.9	20	No
		2018	11.0	---	11.0	20	No

[1] The "Total GLCmax" is the maximum ground-level concentration from the modeling of the project emissions (i.e., "Project GLCmax") for all constituents, except $PM_{2.5}$. For $PM_{2.5}$, the "Total GLCmax" is the "Project GLCmax" plus the "Secondary PM2.5" contribution.

[2] The NAAQS results for annual NO2 were conservatively used to demonstrate compliance with the annual PSD Increment for NO2.

[3] Since the Ambient Ratio Mehtod2 (ARM2) was not selected in the annual NO2 modeling, the default factor of 0.9 is applied to the results shown in this table.