

US EPA ARCHIVE DOCUMENT

**PREVENTION OF SIGNIFICANT DETERIORATION PERMIT
FOR GREENHOUSE GAS EMISSIONS
ISSUED PURSUANT TO THE REQUIREMENTS AT 40 CFR § 52.21**

U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION 6

PSD PERMIT NUMBER: PSD-TX-861-GHG

PERMITTEE: Diamond Shamrock Refining Company, L.P.
6701 FM 119
Sunray, TX 79086

FACILITY NAME: Diamond Shamrock Refining Company, L.P.
Valero McKee Refinery

FACILITY LOCATION: 6701 FM 119
Sunray, TX 79086

Pursuant to the provisions of the Clean Air Act (CAA), Subchapter I, Part C (42 U.S.C. Section 7470, *et. Seq.*), and the Code of Federal Regulations (CFR) Title 40, Section 52.21, and the Federal Implementation Plan at 40 CFR § 52.2305 (effective May 1, 2011 and published at 76 FR 25178), the U.S. Environmental Protection Agency, Region 6 is issuing a *Prevention of Significant Deterioration* (PSD) permit to Diamond Shamrock Refining Company, L.P. (a Valero Company) for Greenhouse Gas (GHG) emissions. The Permit applies to the addition and modification to several emissions sources as part of a Crude Expansion Project to increase the overall processing of crude oil at the existing Valero McKee Refinery located in Sunray, Texas.

Valero is authorized to construct the Crude Expansion Project as described herein, in accordance with the permit application (and plans submitted with the permit application), the federal PSD regulations at 40 CFR § 52.21, and other terms and conditions set forth in this PSD permit in conjunction with the corresponding Texas Commission on Environmental Quality (TCEQ) construction PSD permit No. PSD-TX-861M3. Failure to comply with any condition or term set forth in this PSD Permit may result in enforcement action pursuant to Section 113 of the Clean Air Act (CAA). This PSD Permit does not relieve Valero of the responsibility to comply with any other applicable provisions of the CAA (including applicable implementing regulations in 40 CFR Parts 51, 52, 60, 61, 72 through 75, and 98) or other federal and state requirements (including the state PSD program that remains under approval at 40 CFR § 52.2303).

In accordance with 40 CFR §124.15(b), this PSD Permit becomes effective 30 days after the service of notice of this final decision unless review is requested on the permit pursuant to 40 CFR §124.19.

Wren Stenger, Director
Multimedia Planning and Permitting Division

Date

Draft for August 4, 2013 public notice.

Diamond Shamrock Refining Company, L.P. (PSD-TX-861-GHG)
Prevention of Significant Deterioration Permit
For Greenhouse Gas Emissions
Draft Permit Conditions

PROJECT DESCRIPTION

The Diamond Shamrock Refining Company, Valero McKee Refinery (Valero) processes crude oil to produce petrochemical products and commercial petroleum products. Crude oil is blended at a separate facility and transferred to Valero by pipeline and trucks. The crude oil is then processed and refined into various petrochemical products and commercial petroleum products such as propane, gasoline, jet fuel, diesel fuel, and asphalt.

The Crude Expansion Project will debottleneck parts of the refinery to allow for additional crude processing. The proposed changes involve the installation and modification of equipment at several existing process units such as the Nos. 1 and 2 Crude Units, the Nos. 1 and 2 Vacuum Units, the Refinery Light Ends (RLE) Unit, the No. 4 Naphtha Fractionator, the Dehexanizer Tower (a Naphtha Fractionator), the Hydrocracking Unit (HCU), the Gasoline Desulfurization Unit (GDU), the Turbine Fuel Mercox Unit, the Diesel Hydrotreater, the Gas Oil Fractionator (GOF), Sour Water Stripper (SWS), and Amine Treating and Sulfur Recovery Units (SRUs) at the existing Valero McKee Refinery located in Sunray, Moore County, Texas. In addition, a new steam boiler, new storage tanks, new cooling tower pumps and new process piping will be added to accommodate the increased crude processing. The Crude Expansion Project will increase the crude processing from 169,000 barrels per day to 210,000 barrels per day when completed.

EQUIPMENT LIST

The following devices are subject to this GHG PSD permit.

FIN	EPN	Description
B-22	B-22	Boiler No. 22. The boiler has a maximum heat input rate of 225 MMBtu/hr (HHV) firing refinery fuel gas.
H-2	H-2	No. 1 Vacuum Heater. The vacuum heater has a maximum heat input rate of 88.0 MMBtu/hr.
H-64	H-64	No. 4 Hydrotreater Charge Heater. The charge heater has a maximum heat input rate of 33.26 MMBtu/hr.
V-5	V-5	SRU No. 1 Incinerator. The incinerator has a maximum stack flow rate of 279,767 scfh at 60 °F

F-1CRUDE; F-2CRUDE; F-RLE; F-4NHT; F-HCU; F-DHDSU/ GASPLT; F-GHDS; F-SRU1; F-SRU2; F-WWTP; F-ETNKFRM; F-NTNKFRM; F-WTNKFRM	FUGITIVES	Process fugitives from No. 1 Crude Unit and Dehexanizer, No. 2 Crude Unit, Refinery Light Ends Unit, No. 4 Naphtha Fractionator, Hydrocracker, Diesel Hydrodesulfurization Unit & Turbine Merox Unit, Gasoline Desulfurization Unit, No. 1 SRU, No. 2 SRU, Wastewater Treatment Plant, East Tank Farm, North Tank Farm, and West Tank Farm
MSS-FLARE	MSS-CONTROL	Portable Flare or Portable Thermal Oxidizer for EFR Tank Degassing Control
MSS Fugitives	MSSFUG	MSS Process Fugitives

I. GENERAL PERMIT CONDITIONS

A. PERMIT EXPIRATION

As provided in 40 CFR §52.21(r), this PSD Permit shall become invalid if construction:

1. is not commenced (as defined in 40 CFR §52.21(b)(9)) within 18 months after the approval takes effect; or
2. is discontinued for a period of 18 months or more; or
3. is not completed within a reasonable time.

Pursuant to 40 CFR §52.21(r), EPA may extend the 18-month period upon a written satisfactory showing that an extension is justified.

B. PERMIT NOTIFICATION REQUIREMENTS

Permittee shall notify EPA Region 6 in writing or by electronic mail of the:

1. date construction is commenced, postmarked within 30 days of such date;
2. actual date of initial startup, as defined in 40 CFR §60.2, postmarked within 15 days of such date; and
3. date upon which initial performance tests will commence, in accordance with the provisions of Section V, postmarked not less than 30 days prior to such date. Notification may be provided with the submittal of the performance test protocol required pursuant to Condition V.B.

C. FACILITY OPERATION

At all times, including periods of startup, shutdown, and maintenance, Permittee shall, to the extent practicable, maintain and operate the facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the EPA, which may include, but is not limited to, monitoring results, review of operating maintenance procedures and inspection of the facility.

D. MALFUNCTION REPORTING

1. Permittee shall notify EPA by mail within 48 hours following the discovery of any failure of air pollution control equipment, process equipment, or of a process to operate in a normal manner, which results in an increase in GHG emissions above the allowable emission limits stated in Section II and III of this permit.
2. Within 10 days of the restoration of normal operations after any failure described in I.D.1., Permittee shall provide a written supplement to the initial notification that includes a description of the malfunctioning equipment or abnormal operation, the date of the initial malfunction, the period of time over which emissions were increased due to the failure, the cause of the failure, the estimated resultant emissions in excess of those allowed in Section II and III, and the methods utilized to mitigate emissions and restore normal operations.
3. Compliance with this malfunction notification provision shall not excuse or otherwise constitute a defense to any violation of this permit or any law or regulation such malfunction may cause.

E. RIGHT OF ENTRY

EPA authorized representatives, upon the presentation of credentials, shall be permitted:

1. to enter the premises where the facility is located or where any records are required to be kept under the terms and conditions of this PSD Permit;
2. during normal business hours, to have access to and to copy any records required to be kept under the terms and conditions of this PSD Permit;
3. to inspect any equipment, operation, or method subject to requirements in this PSD Permit; and,
4. to sample materials and emissions from the source(s).

F. TRANSFER OF OWNERSHIP

In the event of any changes in control or ownership of the facilities to be constructed, this PSD Permit shall be binding on all subsequent owners and operators. Permittee shall notify the

succeeding owner and operator of the existence of the PSD Permit and its conditions by letter; a copy of the letter shall be forwarded to EPA Region 6 within thirty days of the letter signature.

G. SEVERABILITY

The provisions of this PSD Permit are severable, and, if any provision of the PSD Permit is held invalid, the remainder of this PSD Permit shall not be affected.

H. ADHERENCE TO APPLICATION AND COMPLIANCE WITH OTHER ENVIRONMENTAL LAWS

Permittee shall construct this project in compliance with this PSD Permit, the application on which this permit is based, the TCEQ construction NSR permit PSD-TX-861M3 (when issued for the Crude Expansion Project) and all other applicable federal, state, and local air quality regulations. This PSD permit does not release the Permittee from any liability for compliance with other applicable federal, state and local environmental laws and regulations, including the Clean Air Act.

I. ACRONYMS AND ABBREVIATIONS

BACT	Best Available Control Technology
CAA	Clean Air Act
CCS	Carbon Capture and Sequestration
CEMS	Continuous Emissions Monitoring System
CFR	Code of Federal Regulations
CH ₄	Methane
CO ₂	Carbon Dioxide
CO ₂ e	Carbon Dioxide Equivalent
EPN	Emission Point Number
FIN	Facility Identification Number
FR	Federal Register
GCV	Gross Calorific Value
GHG	Greenhouse Gas
GWP	Global Warming Potential
HCU	Hydrocracking Unit
HHV	High Heating Value
hr	Hour
lb	Pound
LDAR	Leak Detection and Repair
MMBtu	Million British Thermal Units
MSS	Maintenance, Start-up and Shutdown
NSR	New Source Review
N ₂ O	Nitrous Oxides
NSPS	New Source Performance Standards
PSD	Prevention of Significant Deterioration
RLE	Refinery Light Ends
SCFH	Standard Cubic Feet per Hour
TAC	Texas Administrative Code
TCEQ	Texas Commission on Environmental Quality
TPY	Tons per Year
USC	United States Code

II. Annual Emission Limits

Annual emissions, in tons per year (TPY) on a 12-month rolling basis, shall not exceed the following:

Table 1. Annual Emission Limits

FIN	EPN	Description	GHG Mass Basis		TPY CO ₂ e ^{1,2,3}	BACT Requirements
				TPY ²		
B-22	B-22	No. 22 Boiler	CO ₂	112,501.56	113,043	<ul style="list-style-type: none"> • 0.11 lbs CO₂/scf Fuel on a 365-day rolling basis • See permit condition III.A.2
			CH ₄	6.52		
			N ₂ O	1.30		
H-2	H-2	No. 1 Vacuum Heater	CO ₂	37,571.78	37,754	<ul style="list-style-type: none"> • 0.11 lbs CO₂/scf Fuel on a 365-day rolling basis • See permit condition III. B.2
			CH ₄	2.18		
			N ₂ O	0.44		
H-64	H-64	No. 4 Hydrotreater Charge Heater	CO ₂	16,631.04	16,711	<ul style="list-style-type: none"> • 0.11 lbs CO₂/scf Fuel on a 365-day rolling basis • See permit condition III. B.2
			CH ₄	0.96		
			N ₂ O	0.19		
V-5	V-5	No. 1 SRU equipped with a Claus Burner and Tail Gas Incinerator ⁶	CO ₂	28,021.28	28,030	<ul style="list-style-type: none"> • Good combustion and operating practices; • Energy Efficient Design; • 3-Stage Claus Burner System and SCOT tail gas treatment system; • See permit condition III. C
			CH ₄	0.12		
			N ₂ O	0.02		
F-1CRUDE F-2CRUDE F-RLE F-4NHT F-HCU F-DHDSU F-GHDS F-SRU1 F-SRU2 F-WWTP F-ETNKFRM F-NTNKFRM F-WTNKFRM	FUGITIVES	Process Fugitives ⁸	CO ₂	No Numerical Limit Established ⁴	74.6	Incorporation of 28 VHP Monitoring. See permit condition III.E.
		CH ₄	3.55			
			N ₂ O	No Numerical Limit Established ⁴		
MSS-FLARE	MSS-CONTROL	Portable Combustion Control Device	CO ₂	11	12	Good combustion and operating practices. See permit condition III.D.
			CH ₄	0.03		
			N ₂ O	No Numerical Limit Established ⁴		

FIN	EPN	Description	GHG Mass Basis		TPY CO ₂ e ^{1,2,3}	BACT Requirements
				TPY ²		
MSS Fugitives	MSSFUG	Process Fugitives MSS ⁸	CO ₂	No Numerical Limit Established ⁴	0.63	Incorporation of 28 VHP Monitoring. See permit condition III.E.
			CH ₄	0.03		
			N ₂ O	No Numerical Limit Established ⁴		
Totals^{5,7}			CO ₂	194,736.66	195,625.2	
			CH ₄	13.39		
			N ₂ O	1.95		

1. Compliance with the annual emission limits (tons per year) is based on a 12-month rolling average.
2. The TPY emission limits specified in this table are not to be exceeded for this facility and include emissions from the facility during all operations including MSS activities.
3. Global Warming Potentials (GWP): CH₄ = 21, N₂O = 310
4. All values indicated as “No Numerical Limit Established” are less than 0.01 tpy with appropriate rounding. The emission limit will be a design/work practice standard as specified in the permit.
5. The total emissions for CH₄, N₂O, CO₂ and CO₂e do not include the PTE for process fugitive emissions only from increased fugitive components
6. Emissions include greenhouse gas emissions from fuel gas and acid gas combustion in SRU Claus burners and the tail gas incinerator.
7. Totals represent the amount of new or modified emission unit greenhouse gas emissions.
8. Process fugitive emissions are estimated for additional fugitive components only to be added by this project.

III. SPECIAL PERMIT CONDITIONS

A. Requirements for Boiler (EPN: B-22)

1. **Fuel specifications:** The fuel for the boiler is a mixture of refinery fuel gas and pipeline quality natural gas.
2. **Boiler BACT Requirements:**
 - a. The BACT limit of 0.11 lbs of CO₂/scf of fuel is based on a 365-day rolling average and will be obtained by using the daily calculation result of the CO₂ emissions and divided by the daily measured fuel consumption. The quotient of the divided result is added to the 365-day rolling average and is rolled daily. As an alternative, the Permittee may install and operate a volumetric stack gas flow monitor and associated data acquisition and handling system in accordance with the CO₂ CEMS system provided in 40 CFR 75.10(a)(3) and (a)(5).
 - b. The Permittee shall calculate, on a monthly basis, the amount of CO₂e emitted from the boiler in tons/yr based on the procedures and Global Warming Potential (GWP) contained in the Greenhouse Gas Regulations, 40 CFR Part 98, Subpart A, Table A-1, as published on October 30, 2009 (74 FR 56395). Compliance shall be based on a 12-month rolling basis.
 - c. Calculations to demonstrate compliance with the 12-month rolling limits shall be

completed no later than 30 days after the end of the 12-month rolling period.

3. Boiler Work Practice and Operational Requirements

- a. Compliance with the CO₂e Annual Emission Limit shall be demonstrated on a 12-month rolling basis as follows:
 - i. Permittee shall calculate on a monthly basis the amount of CO₂ emitted from combustion in tons/yr using the measured fuel consumption, the measured carbon content and equation C-5 in 40 CFR Part 98 Subpart C, converted to short tons based on a 12-month rolling basis.
 - ii. Permittee shall calculate on a monthly basis the CH₄ and N₂O emissions from combustion using the measured fuel consumption, the measured fuel actual heat content and equation C-8 in 40 CFR Part 98 Subpart C, converted to short tons based on a 12-month rolling basis.
 - iii. Calculations shall be completed no later than 30 days after the end of the 12-month rolling period
- b. The fuel carbon content and gross calorific value (GCV) [high heat value (HHV)] of the fuel shall be determined, at a minimum, semiannually by the procedures contained in 40 CFR 98.34(a). Records shall be maintained of the semiannual fuel GCV for a period of five years. Upon request, Permittee shall provide a sample and/or analysis of the fuel that is fired in the boiler or shall allow a sample to be taken by EPA for analysis.
- c. The flow rate of the fuel combusted shall be measured and recorded using an operational totalizing fuel flow meter at the inlet.
- d. Permittee shall calibrate and perform preventative maintenance check of the fuel gas flow meters and document annually.
- e. Permittee shall perform and document boiler burner tune-ups (including inspection of the burner, flame pattern and air-to-fuel ratio) at a minimum of annually.
- f. The boiler is not expected to have GHG emissions in excess of the allowed emission rates during periods of startup, shutdown or maintenance.
- g. Permittee shall perform a preventative maintenance check of oxygen control analyzers and document annually.

B. Requirements for Heaters (EPNs: H-2 and H-64)

1. **Fuel specifications:** The fuel for the heaters is a mixture of refinery fuel gas and pipeline quality natural gas.
2. **Heater BACT Requirements:**
 - a. The BACT limit of 0.11 lbs of CO₂/scf of fuel for each heater is based on a 365-day rolling average and will be obtained by using the daily calculation result of the CO₂ emissions and divided by the daily measured fuel consumption. The quotient of the divided result is added to the 365-day rolling average and is rolled daily. As an alternative, the Permittee may install and operate a volumetric stack gas flow monitor and associated data acquisition and handling system in accordance with the

- CO₂ CEMS system provided in 40 CFR 75.10(a)(3) and (a)(5).
- b. The Permittee shall calculate, on a monthly basis, the amount of CO₂e emitted from each heater in tons/yr based on the procedures and Global Warming Potential (GWP) contained in the Greenhouse Gas Regulations, 40 CFR Part 98, Subpart A, Table A-1, as published on October 30, 2009 (74 FR 56395). Compliance shall be based on a 12-month rolling basis.
 - c. Calculations to demonstrate compliance with the 12-month rolling limits shall be completed no later than 30 days after the end of the 12-month rolling period.

3. Heater Work Practice and Operational Requirements

- a. Compliance with the CO₂e Annual Emission Limit shall be demonstrated on a 12-month rolling basis as follows:
 - i. Permittee shall calculate on a monthly basis the amount of CO₂ emitted from combustion in tons/yr using the measured fuel consumption, the measured carbon content and equation C-5 in 40 CFR Part 98 Subpart C, converted to short tons based on a 12-month rolling basis.
 - ii. Permittee shall calculate on a monthly basis the CH₄ and N₂O emissions from combustion using the measured fuel consumption, the measured fuel actual heat content and equation C-8 in 40 CFR Part 98 Subpart C, converted to short tons based on a 12-month rolling basis.
 - iii. Calculations shall be completed no later than 30 days after the end of the 12-month rolling period starting one year after the start of operation of the proposed changes.
- b. The fuel carbon content and gross calorific value (GCV) [high heat value (HHV)] of the fuel shall be determined, at a minimum, semiannually by the procedures contained in 40 CFR 98.34(a). Records shall be maintained of the semiannual fuel GCV for a period of five years. Upon request, Permittee shall provide a sample and/or analysis of the fuel that is fired in the heater or shall allow a sample to be taken by EPA for analysis.
- c. The flow rate of the fuel combusted shall be measured and recorded using an operational totalizing fuel flow meter at the inlet.
- d. Permittee shall calibrate and perform preventative maintenance check of the fuel gas flow meters and document annually.
- e. Permittee shall perform heater burner tune-ups at a minimum of annually.
- f. Permittee shall perform a preventative maintenance check of oxygen control analyzers and document annually.
- g. The heaters are not expected to have GHG emissions in excess of the allowed emission rates during periods of startup, shutdown, or maintenance.

C. No. 1 Sulfur Recovery Unit (EPN: V-5)

Sulfur Recovery Unit Work Practice and Operational Requirements:

- a. The Permittee shall calculate, on a monthly basis, the amount of CO₂e emitted from EPN V-5 in tons/yr based on the procedures and Global Warming Potential (GWP) contained in the Greenhouse Gas Regulations, 40 CFR Part 98, Subpart A,

Table A-1, as published on October 30, 2009 (74 FR 56395). Compliance shall be based on a 12-month rolling basis. Calculations to demonstrate compliance with the 12-month rolling limits shall be completed no later than 30 days after the end of the 12-month rolling period.

- b. Compliance with the CO₂e Annual Emission Limit shall be demonstrated on a 12-month rolling basis as follows:
 1. For EPN V-5, the monthly CO₂ mass emission limit shall be calculated as follows:
 - ii. For the Sulfur Recovery Unit, the Permittee shall calculate on a monthly basis the amount of CO₂ emitted using the measured volumetric flow rate of sour gas feed and equation Y-12 of 40 CFR part 98 Subpart Y, converted to short tons.
 - iii. For the three-Stage Claus Burner and SCOT Tail Gas Incinerator, the Permittee shall calculate on a monthly basis the amount of CO₂ emitted from combustion in tons/yr using equation C-5 in 40 CFR Part 98 Subpart C, converted to short tons.
 - iv. As an alternative, the Permittee may install and operate a volumetric stack gas flow monitor and associated data acquisition and handling system in accordance with the CO₂ CEMS system provided in 40 CFR 75.10(a)(3) and (a)(5).
 2. The calculated CO₂ emissions from the Sulfur Recovery Unit and Claus Burner and SCOT Tail Gas Incinerator shall be summed and added to the 12-month rolling total.
 3. Permittee shall calculate on a monthly basis the CH₄ and N₂O emissions on a 12-month rolling basis using the measured fuel consumption, the measured actual heat input and equation C-8 in 40 CFR Part 98 Subpart C, converted to short tons.
- c. Calculations of CO₂, CH₄ and N₂O emissions shall be completed no later than 30 days after the end of the 12-month rolling period starting one year after the start of operation of the proposed changes.
- d. The daily volumetric flow rate of the sour gas feed to the Claus Burner and Tail Gas Incinerator shall be measured and recorded at the inlet to the unit.
- e. The daily flow rate of the fuel combusted in the SRU shall be measured and recorded using an operational totalizing fuel flow meter at the inlet.
- f. For the Claus burner and Tail Gas Incinerator, the fuel carbon content and gross calorific value (GCV) [high heat value (HHV)] of the fuel shall be determined, at a minimum, semiannually by the procedures contained in 40 CFR 98.34(a). Records shall be maintained of the semiannual fuel GCV for a period of five years. Upon request, Permittee shall provide a sample and/or analysis of the fuel that is fired in the boiler or shall allow a sample to be taken by EPA for analysis.
- g. Permittee shall calibrate and perform preventative maintenance check of the fuel gas flow meters and document annually.
- h. The permittee shall utilize a three-stage Claus system equipped with a SCOT process tail gas treating system.
- i. The permittee shall demonstrate compliance with the DRE by maintaining the tail gas incinerator firebox temperature at a minimum of 1,297°F and the exhaust oxygen concentration shall be maintained at not less than 1 percent while waste gas is being

fed into the SRU incinerator. The tail gas incinerator shall be operated with not less than the oxygen concentration and firebox average temperature maintained above the minimum temperature maintained during the last satisfactory stack test performed in accordance with Special Condition V.J. During startup and shutdown, the oxygen concentration is limited to 0.25 percent for less than one hour and the temperature is limited to 750°F for less than one hour. A record shall be maintained indicating the start and end times for each startup and shutdown activity.

The tail gas incinerator fire box exit temperature and oxygen concentration shall be continuously monitored and recorded. The temperature measurement device shall reduce the temperature readings to an average period of 15-minute blocks or less and record it at that frequency. The temperature monitor shall be installed, calibrated at least annually, and maintained according to the manufacturer's specifications. The device shall have an accuracy of the greater of ± 2 percent of the temperature being measured expressed in degrees Celsius or $\pm 2.5^{\circ}\text{C}$.

Quality-assured (or valid) data must be generated when the tail gas incinerator 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 it does not exceed 5 percent of the time (in minutes) that the tail gas incinerator operated over the previous rolling 12-month period. The measurements missed shall be estimated using engineering judgment and the methods used recorded.

D. Portable Combustion Control Device (EPN: MSSCONTROL)

Portable Combustion Control Device Work Practice and Operational Requirements

- a. MSS emissions from the new stabilized crude oil tanks shall be vented to a portable combustion control device (portable thermal oxidizer (TO) or portable Flare). The portable TO is the preferred combustion control device and the portable flare shall be used as a back-up alternative to the portable thermal oxidizer.
- b. The CO_2e emissions from the portable TO shall be calculated monthly for the 12-month rolling emission limit and are based on 40 CFR 98.33, equation C-1. The calculations must be based on the applicable measured parameters specified in special condition i of this section. Records of the CO_2e 12-month rolling average must be kept and made available for inspection for five years.
- c. The permittee shall maintain a combustion temperature at a minimum of 1,400°F at all time when processing waste gases from the new stabilized crude oil tanks. Temperature monitoring of the portable TO will ensure proper operation. The permittee shall install and maintain a temperature recording device. The firebox temperature shall be monitored continuously and recorded during all times when processing waste gases in the portable TO. In addition, the flow rate of the waste gases routed to the TO is limited to assure at least a 0.5 second combustion chamber residence time at all times when the device is in use.
- d. Any monitoring device used to demonstrate compliance with the proper functioning of EPN MSSCONTROL shall be installed, calibrated, maintained and operated in

- accordance with the manufacturer's instructions.
- e. If the portable TO is not available for use, the portable flare may be used. The calculations of the CO₂e emissions from the portable flare are based on 40 CFR 98.253 equation Y-3 and shall be added to the monthly CO₂e 12-month rolling emission limit. The calculations must be based on the measured parameters specified in special condition h of this section. Records of the CO₂e 12-month rolling average must be kept and made available for inspection for five years.
 - f. The portable flare is an intermittent use MSS flare, not a continuous process flare.
 - g. The portable flare can be either air assisted or non-assisted.
 - h. For a portable flare, the permittee shall use one of the following methods to demonstrate compliance with the requirements of 40 CFR 60.18.
 - i. The permittee shall continuously monitor the net heating value of the gas stream routed to the flare.
 - ii. The permittee shall continuously monitor the total volume of supplemental fuel added to the gas stream routed to the flare and continuously maintain sufficient supplemental fuel to meet the minimum net heating value requirements in 40 CFR §60.18 assuming that the net heating value contribution from the degassed vapor is equivalent to a level corresponding to 50% of the lower explosive limit (LEL). The permittee may estimate the volumetric flow rate from the tank or vessel for the purpose of this calculation if the flow rate of the degassed vapor is not directly monitored.
 - iii. The permittee shall use calculations to demonstrate that for the material stored in the tank or vessel the net heating value of the gas stream routed to the flare cannot drop below the minimum net heating value requirements in 40 CFR §60.18 until the concentration of VOC in the vapors being routed to the flare is less than 50 percent of the LEL or 34,000 parts per million by volume (ppmv) of VOC at zero percent oxygen.
 - iv. If the flare is a non-assisted flare that qualifies for the provisions in 40 CFR §60.18(c)(3)(i), the permittee may elect to continuously monitor the hydrogen content of the gas stream routed to the flare and continuously meet the minimum 8.0% by volume hydrogen content requirement in lieu of the requirements in clauses (i) - (iii) of this special condition.
 - i. Permittee must record the time, date, fuel volume and heat input (HHV) in MMBtu/hr and duration of each MSS event. If the portable TO is used, the combustion chamber temperature and residence times (or the periodic control efficiency demonstration) shall be maintained for each MSS event. If the portable flare is used, the permittee shall keep records of the data used to comply with special condition h of this section.

E. Fugitive Emission Sources (EPNs: FUGITIVES and MSSFUG)

Fugitive Emission Sources Work Practice and Operational Requirements

- a. To the extent that good engineering practice will permit, new and reworked valves and piping connections shall be located to be reasonably accessible for fugitive emission monitoring during plant operation.
- b. The TCEQ 28 VHP leak detection and repair (LDAR) program for fugitive emissions

- of methane in the fuel gas line will be implemented for this project. Any leaking component should be repaired and recorded as required in the 28 VHP program.
- c. The gas detector shall conform to requirements listed in Method 21 of 40 CFR part 60, appendix A. The gas analyzer shall be calibrated with CH₄ and have a response factor no less than 10 for the pollutant or combination of pollutants being measured. Replacements for leaking components should be remonitored no later than 15 days after placed back in service.
 - d. A weekly audio, visual inspection program will be used to determine methane leaks from the fugitive components in the fuel piping.

IV. Recordkeeping and Reporting

A. Records

1. In order to demonstrate compliance with the GHG emission limits in Table 1, the Permittee will monitor the following parameters and summarize the data on a calendar month basis.
 - a. Operating hours for all air emission sources;
 - b. Records of the fuel consumed by each source;
 - c. The fuel usage for all combustion sources, using continuous fuel flow monitors (a group of equipment can utilize a common fuel flow meter, as long as actual fuel usage is allocated to the individual equipment based upon actual operating hours and maximum firing rate);
 - d. Semi-annual fuel sampling for natural gas, daily fuel sampling of refinery fuel gas, or other frequencies as allowed by 40 CFR Part 98 Subpart C §98.34(b)(3); and
2. Permittee shall maintain a file of all records, data, measurements, reports, and documents related to the operation of the subject facilities, including, but not limited to, the following: all records or reports pertaining to significant maintenance performed on any system or device at the facility; duration of startup, shutdown; the initial startup period for the emission units; pollution control units; malfunctions; all records relating to performance tests, calibrations, checks, and monitoring of combustion equipment; duration of an inoperative monitoring device and emission units with the required corresponding emission data; and all other information required by this permit recorded in a permanent form suitable for inspection. The file must be retained for not less than five years following the date of such measurements, maintenance, reports, and/or records.
3. Permittee shall maintain records of all GHG emission units and CO₂ emission certification tests and monitoring and compliance information required by this permit.
4. Permittee shall maintain records and submit a written report of all excess emissions to EPA semi-annually, except when: more frequent reporting is specifically required by an applicable subpart; or the Administrator or authorized representative, on a case-by-case basis, determines that more frequent reporting is necessary to accurately assess the compliance status of the source. The report is due on the 30th day following the end of each semi-annual period and shall include the following:

- a. Time intervals, data and magnitude of the excess emissions, the nature and cause (if known), corrective actions taken and preventive measures adopted;
 - b. Applicable time and date of each period during which the monitoring equipment was inoperative (monitoring down-time);
 - c. A statement in the report of a negative declaration; that is; a statement when no excess emissions occurred or when the monitoring equipment has not been inoperative, repaired or adjusted; and
 - d. Any failure to conduct any required source testing, monitoring, or other compliance activities.
5. Excess emissions shall be defined as any period in which the facility emissions exceed a maximum emission limit set forth in this permit, a malfunction occurs, or any other unauthorized emissions occur.
 6. Excess emissions indicated by GHG emission source certification testing or compliance monitoring shall be considered violations of the applicable emission limit for the purpose of this permit.
 7. All records required by this PSD Permit shall be retained for not less than 5 years following the date of such measurements, maintenance, and reporting.

V. Initial Performance Testing Requirements:

- A. The Permittee shall perform stack sampling and other testing to establish the actual pattern and quantities of air contaminants being emitted into the atmosphere from the stacks of the Boiler (EPN B-22), Heaters (EPNs H-2 and H-64), SRU equipped with an incinerator (EPN V-5), and to determine the initial compliance with the CO₂ emission limits established in this permit. Sampling shall be conducted in accordance with 40 CFR § 60.8 and EPA Method 3a or 3b for the concentration of CO₂.
 1. Multiply the CO₂ hourly average emission rate determined under maximum operating test conditions by 8,760 hours.
 2. If the above calculated CO₂ emission total does not exceed the tons per year (TPY) specified on Table 1, no compliance strategy needs to be developed.
 3. If the above calculated CO₂ emission total exceeds the tons per year (TPY) specified in Table 1, the facility shall;
 - a. Document the exceedance in the test report; and
 - b. Explain within the report how the facility will assure compliance with the CO₂ emission limit listed in Table 1.
- B. Within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup of the facility, performance tests(s) must be conducted and a written report of the performance testing results furnished to the EPA. Additional sampling may be required by TCEQ or EPA.
- C. Permittee shall submit a performance test protocol to EPA no later than 30 days prior to the test to allow review of the test plan and to arrange for an observer to be present at the test. The performance test shall be conducted in accordance with the submitted protocol, and any changes required by EPA.
- D. The boiler (EPN B-22), heaters (EPNs H-2 and H-64) and SRU equipped with an incinerator

(EPN V-5), shall operate at maximum production rates during stack emission testing.

- E.** Performance tests must be conducted under such conditions to ensure representative performance of the affected facility. The owner or operator must make available to the EPA such records as may be necessary to determine the conditions of the performance tests.
- F.** The owner or operator must provide the EPA at least 30 days' prior notice of any performance test, except as specified under other subparts, to afford the EPA the opportunity to have an observer present and/or to attend a pre-test meeting. If there is a delay in the original test date, the facility must provide at least 7 days prior notice of the rescheduled date of the performance test.
- G.** The owner or operator shall provide, or cause to be provided, performance testing facilities as follows:
 - 1. Sampling ports adequate for test methods applicable to this facility,
 - 2. Safe sampling platform(s),
 - 3. Safe access to sampling platform(s), and
 - 4. Utilities for sampling and testing equipment.
- H.** Unless otherwise specified, each performance test shall consist of three separate runs using the applicable test method. Each run shall be conducted for the time and under the conditions specified in the applicable standard. For purposes of determining compliance with an applicable standard, the arithmetic mean of the results of the three runs shall apply.
- I.** Emissions testing for the boiler (EPN B-22), as outlined above, shall be performed every three years to verify continued performance at permitted emission limits.
- J.** Emissions testing for the heaters (EPNs H-2 and H-64) and SRU equipped with an incinerator (EPN V-5), shall be performed every five years, plus or minus 6 months, after the previous performance test was performed, or within 180 days after the issuance of a permit renewal, whichever comes later to verify continued performance at the permitted emission limits.

VI. Agency Notifications

Permittee shall submit GHG permit applications, permit amendments, and other applicable permit information to:

Multimedia Planning and Permitting Division
EPA Region 6
1445 Ross Avenue (6 PD-R)
Dallas, TX 75202
Email: Group R6AirPermits@EPA.gov

Permittee shall submit a copy of all compliance and enforcement correspondence as required by this Approval to Construct to:

Compliance Assurance and Enforcement Division
EPA Region 6
1445 Ross Avenue (6EN)
Dallas, TX 75202