

Permit Amendment Source Analysis & Technical Review

Company	Jefferson Railport Terminal I (Texas) LLC	Permit Numbers	118901, PSDTX1408M2 & GHGPSDTX108M2
City	Vidor	Project Number	367720
County	Orange	Regulated Entity Number	RN106402894
Project Type	Amendment	Customer Reference Number	CN604653774
Project Reviewer	David Havens	Received Date	December 13, 2023
Site Name	Jefferson Railport Terminal		

Project Overview

Jefferson Railport Terminal I (Texas) LLC (Jefferson) has submitted this amendment to authorize two new Wax Splitter facilities at the Jefferson Railport Terminal. To support the Wax Splitters the project will also authorize a new flare, two furnaces, fugitive components, and emissions from Wax Splitter related maintenance start-up and shutdown activities (MSS). Project emission increases exceed applicable Prevention of Significant Deterioration (PSD) major source thresholds for VOC, NO_x, and greenhouse gases (GHGs) as CO₂e. Permit Nos. PSDTX1408M1 & GHGPSDTX108M1 are being changed from M1 to M2 to reflect that this project is the 2nd modification (M2) of each permit. Additionally, Jefferson is lowering the maximum concentration of H₂S allowed in high sulfur crude oil handled at the site and incorporating by consolidation Pollution Control Project Standard Permit (PCP) registration No. 170950.

Emission Summary

Air Contaminant	Current Allowable Emission Rates (tpy)	Consolidated Emissions (tpy)	Proposed Allowable Emission Rates (tpy)	Change in Allowable Emission Rates (tpy)	Project Changes at Major Sources (Baseline Actual to Allowable or Actual to Projected Actual)
VOC	327.96	1.81	360.05	30.28	205.72 ⁽¹⁾
PM	18.21	0.13	23.08	4.74	9.72
PM ₁₀	18.21	0.13	23.08	4.74	9.72
PM _{2.5}	18.21	0.13	23.08	4.74	9.72
NO _x	172.79	2.51	197.98	22.68	96.84 ⁽¹⁾
CO	202.69	4.63	238.00	30.68	88.12
SO ₂	64.28	1.49	72.07	6.30	8.60
H ₂ S	0.42	0.02	0.52	0.08	0.45
CO ₂	338,112.00	2,458.18	419,804.56	79,530.15	NA
CH ₄	15.84	0.13	18.02	2.05	NA
N ₂ O	1.87	2466.98	2469.01	0.16	NA
CO ₂ Equivalent ⁽²⁾	339,059.00	2,466.96	420,856.68	79,627.63	347,015.91 ⁽¹⁾

(1) Exceeded major source threshold and being reviewed for PSD. See PSD and Nonattainment discussions below.

(2) Based on global warming potentials (GWPs) established before January 1, 2025. See discussion below for MAERT changes to Permit No. GHGPSDTX108M2.

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Compliance History Evaluation - 30 TAC Chapter 60 Rules

A compliance history report was reviewed on:	January 22, 2024
Site rating & classification:	2.47 / Satisfactory
Company rating & classification:	2.47 / Satisfactory
Has the permit changed on the basis of the compliance history or rating?	No
Did the Regional Office have any comments? If so, explain.	No

Public Notice Information

Requirement	Date
Legislator letters mailed	12/15/2023
Date 1 st notice published	1/06/2024
Publication Name:	Orange Leader
Pollutants: Carbon monoxide, hazardous air pollutants, hydrogen sulfide, nitrogen oxides, organic compounds, particulate matter including particulate matter with diameters of 10 microns or less and 2.5 microns or less and sulfur dioxide. The proposed facility will also emit greenhouse gases.	
Date 1 st notice Alternate Language published	1/4/2024
Publication Name (Alternate Language):	El Perico
1 st public notice tearsheet(s) received	1/11/2024
1 st public notice affidavit(s) received	1/11/2024
1 st public notice certification of sign posting/application availability received	2/6/2024
SB709 Notification mailed	8/8/2024, 10/23/2024, 2/13/2025
Date 2 nd notice published	4/26/2025
Publication Name:	Orange Leader
Pollutants: Carbon monoxide, hazardous air pollutants, hydrogen sulfide, nitrogen oxides, organic compounds, particulate matter including particulate matter with diameters of 10 microns or less and 2.5 microns or less and sulfur dioxide. The proposed facility will also emit greenhouse gases.	
Date 2 nd notice published (Alternate Language)	5/1/2025
Publication Name (Alternate Language):	El Perico
2 nd public notice tearsheet(s) received	5/7/2025
2 nd public notice affidavit(s) received	5/7/2025
2 nd public notice certification of sign posting/application availability received	6/11/2025

Public Interest

Number of comments received	0
Number of meeting requests received	0
Number of hearing requests received	0

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Date meeting held	NA
Date response to comments filed with OCC	NA
Date of SOAH hearing	NA

Federal Rules Applicability

Requirement

Subject to NSPS? **Yes**

Subparts **A, Dc, Ja, Kb, GGGa & IIII**

Subject to NESHAP? **No**

Subparts **& NA**

Subject to NESHAP (MACT) for source categories? **Yes**

Subparts **A, Y, R, CC, EEEE, ZZZZ & DDDDD**

Nonattainment Review Applicability:

The Jefferson Terminal is located in Orange County, Texas. Orange County is in attainment for all pollutants. Nonattainment review is not needed.

PSD Review Applicability:

The Jefferson Terminal is an existing named major source. For each pollutant all project increases were compared to the pollutant's PSD major modification threshold. If a project increase was above the PSD major modification threshold, then netting was performed to determine contemporaneous changes by comparing the highest 24-month baseline actual emissions (2018-2019) to the potential to emit (PTE) MAERT rates or to projected actual emissions. As indicated below pollutants with net contemporaneous emissions changes that exceeded their respective PSD major modification threshold are subject to PSD review.

	Ozone as VOC (tpy)	Ozone as NOx (tpy)	NO _x (tpy)	CO (tpy)	PM (tpy)	PM ₁₀ (tpy)	PM _{2.5} (tpy)	SO ₂ (tpy)	H ₂ S (tpy)	CO ₂ ⁽¹⁾ , GHG (tpy)
Project Increases	205.72	96.84	96.84	88.12	9.72	9.72	9.72	8.60	0.45	346,719
PSD Major Modification Threshold	40	40	40	100	25	15	10	40	10	75,000
Netting Required?	Yes	Yes	Yes	No	No	No	No	No	No	Yes
Net Contemporaneous Emissions Change (tpy)	205.72	96.84	96.84	88.12	9.72	9.72	9.72	8.60	0.45	346,719
PSD review Required	Yes	Yes	Yes	No	No	No	No	No	No	Yes

(1) - GHG PSD is only evaluated if another pollutant triggers PSD permitting.

Projected actual emissions from facilities that are affected but not modified were used in the PSD applicability analysis of CO, SO₂, PM, PM₁₀, and PM_{2.5}. None of these pollutants are required to be reviewed for PSD. Affected facilities include EPNs MVCUs 1-5, RAILVCU, BOILERCAP (Boilers 1-A, 1-B, and 1-C), and HTR-1. In accordance with 30 TAC 127(b)(1) actual emissions of the pollutants from the affected facilities will be tracked for five years after issuance of this project. See changes to Special Conditions for tracking requirements.

Title V Applicability - 30 TAC Chapter 122 Rules

Requirement

Title V applicability: The site operates under Title V Permit No. O-3831

Periodic Monitoring Applicability:

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This site is a major source and is subject to Periodic Monitoring under 30 TAC Chapter 122. The permit require Periodic Monitoring as follows:

Emission Source	SC No.	Periodic Monitoring Summary
Inerted marine vessel	6B	The vapor collection system pressure is continuously monitored and recorded at fifteen-minute intervals while a vessel is being loaded.
Marine loading shore equipment	6D	During marine loading shore equipment is inspected for leaks the first hour of loading and then once every eight hours whole loading continues.
Vacuum assisted barge loading	7	During vacuum assisted barge loading the collection system vacuum is monitored and recorded every fifteen minutes.
VCUs	15	VCU combustion chamber temperatures are monitored and reduced to six-minute averages or less. VCU pilot flames are continuously monitored.
Combustion Devices Fuel	16	The natural gas shall be sampled at least every 6 months to determine total sulfur and net heating value.
VCU Capture and Collection Systems	17	For VCUs and Truck flare once a month visual, audible, and/or olfactory inspection of the capture system are made, or capture systems are tested for leaks using Method 21 once a year.
Boiler opacity	18	When facility is operating weekly visible emission checks will be made for particulate matter emissions.
Boilers Fuel Flow	18	Valid fuel gas usage data is collected when boilers or furnaces are operating.
Crude Oil sulfur content	21	Sulfur content samples are drawn from tanks within the first seven days following a tank change of service to a new crude oil stock.
Flare	23	Pilot flame is continuously monitored. Waste stream is monitored for flow and composition every 15 minutes.
Fugitive Components	26	Fugitive components are monitored with the 28VHP program

Compliance Assurance Monitoring (CAM) applicability:

The site is subject to 30 TAC Chapter 122 requirements. The permits cover the following control devices which will be used to comply with applicable requirements of the permit, and which control source of emissions with a pre-control emission rate in excess of an applicable major source threshold (as defined in Title III of the Clean Air Act).

Emission Source	SC No.	CAM Condition Summary
VCUs	15	VCU combustion chamber temperatures are monitored and reduced to six-minute averages or less. VCU pilot flames are continuously monitored. The temperature monitors are calibrated at least annually and there is an allowance to generate quality assured data during downtime periods.
VCU Capture System Inspections	17	The VCU capture systems are required to be inspected with visual, audible, and/or olfactory means once a month, or once a year using a Method 21 approved monitor. There shall be no bypasses of the control device or if there is a bypass, then install a flow indicator to verify zero bypass flow, or inspect the valves, verifying that the position of the valves and the condition of the car seals that prevent flow out the bypass on a monthly basis.

Process Description

The Jefferson Terminal is a for-hire bulk terminal that receives, stores, and transfers crude and petroleum products. Products are brought by pipeline to the site and stored in storage tanks. Products leave the site by pipeline, marine vessel (barge and ship), and railcar. The site also authorizes fugitive components, boilers and a heater, fire water pump diesel engines, and vapor combustion units (VCUs) used to control loading and MSS activities.

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Project Scope

The project will authorize construction of a dual train Wax Splitter Facility. The processing capacity of each train will be 20,000 barrels per day (bpd), for a total capacity of 40,000 bpd. Yellow wax crude oil will be offloaded from railcars into existing heated storage tanks. The yellow wax will then be heated in one of two new Crude Furnaces (EPNs FH-1 and FH-2) to no more than 680°F before entering an atmospheric distillation column where the wax will be separated into condensate, atmospheric tower bottoms, liquid petroleum gas (LPG), light naphtha, and distillate. The LPG will be sent back to the crude furnaces as fuel while the other products will be sent to storage tanks or sent off site by marine vessels. New emission units will include one natural gas fired crude furnace per train (EPNs FH-1 and FH-2) each with a rated capacity of 72.6 million British thermal units per hour (MMBtu/hr), a flare (EPN FLR) to control minor routine (only pilot and sweep gas), Wax Splitter MSS, and emergency release emissions, and wax splitter fugitive piping components (EPN FUG-S). Existing storage tanks (EPNs T-2210, T-2211, T-2212, T-33400, and FXH01), marine loading facilities (EPNs MVCU 2, 3, 4 and 5), dock loading fugitives (EPN DOCKFUG), boilers (EPNs 1-A, 1-B, and 1-C), and a heater (EPN HTR1) currently authorized by Permit No. 118901 will be utilized to support the new Wax Splitters.

PCP No. 170950 is also being incorporated by consolidation with this project. The PCP authorizes a backup portable VCU (EPN REFINESBK) that will be brought on site only when the current authorized rail loading VCU (EPN RAILVCU) is out of service and unable to be used for the control of rail loading activities. EPNs RAILVCU and REFINESBK will not be used simultaneously and EPN REFINESBK will use propane or natural gas for the pilot light and assist gas and will be limited to operating for 1,000 hours per year. The products loaded and rail loading throughputs are not changing. The PCP also authorized fugitive components and emissions from EPN FUG.

Jefferson is additionally removing VCU EPN TRKFLR from the permit. This VCU was meant to be a backup to EPN RAILVCU but due to size limitations could not be used. The backup portable VCU, EPN REFINESBK being incorporated from PCP No. 170950 will replace EPN TRKFLR as the backup rail loading VCU.

MSS Activities

Wax Splitter MSS (EPN MSS-Split) equipment venting will include liquid draining, venting to control, venting to atmosphere post control, and refilling emissions during startup. MSS will be performed on pumps, filters, meters, valves, strainers, vessels, piping, and Splitter columns.

Changes to Permit No. 118301 Special Conditions

Old SC	New SC	Changes Being Made
3	3	NSPS Subparts Ja and GGGa are being added to the Federal Applicability requirements.
4	4	MACT Subpart CC is being added to the Federal Applicability requirements.
11	11	VCU EPN TRKFLR is being removed and replaced with VCU EPN REFINESBK (See PBR discussion/Incorporations). Requirements are being added that REFINESBK and RAILVCU may not operate simultaneously and REFINESBK is limited to 1,000 hour of use per rolling 12-months. VCU EPN REFINESBK pilot light and assist gas will also be limited to propane or natural gas.
13	13	VCU REFINESBK maximum firing rate limit of 60 MMBtu/hr is being added to this SC.
15	15	VCU TRKFLR is being removed from this SC which contains VCU operating requirements. VCU REFINESBK is being added to this SC.
16	16	Current limits on the amount of sulfur fuel may contain based on grains of total sulfur per 100 dry standard cubic feet (dscf). VCU TRKFLR is being removed and replaced with portable VCU REFINESBK. The new flare, EPN FLR is being added. An exception allowing VCU REFINESBK to operate on propane along with natural gas is also being added, provided propane meets the same sulfur limits of the SC as natural gas (0.20 grains total sulfur per 100 dscf.) The new Crude Furnaces, EPNs FH-1 and FH-2 are subject to fuel sulfur limits contained in

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		NSPS Subpart Ja which limits total sulfur based on ppm, rather than total grains of sulfur. A second paragraph is being added limiting total sulfur in the Crude Furnaces fuel based on Subpart Ja limits.
17	17	VCU TRKFLR is being removed from this SC which contains VCU capture system inspection requirements (per CAM). REFINESBK is being added to this SC. Since REFINESBK is a portable temporary VCU that may not be used during each month or during any rolling 12 month period, a 2 nd paragraph is being added to this SC stating that REFINESBK is only subject to CAM monthly or annual inspections if the VCU is used during those time periods.
18	18	NOx and CO limits for the Crude Furnaces, EPNs FH-1 and FH-2 have been added to paragraphs B and C of this SC. Fuel flow meter requirements have been added for the furnaces in paragraph G. Paragraph H is also being added requiring that the NOx and CO rates for the Crude Furnaces be demonstrated by initial and subsequent stack tests.
21A(2)	21A(2)	H ₂ S monitoring requirements for crude oil loading emissions sent to VCUs. VCU TRKFLR is being removed from this SC and replaced with VCU REFINESBK.
New	23	The site is subject to 40 CFR 63, Part CC (MACT CC). New flare conditions are being added based on 40 CFR 63.670, instead of 40 CFR 60.18. Flare EPN FLR will not be air or steam assisted. This condition was developed based on Permit No. 147681.
24	25	The maximum H ₂ S concentration in crude oil handled at the site is being lowered from 6,700 ppmw in vapor and 67 ppmw in liquid to 5,000 ppmw in vapor and 50 ppmw in liquid on a short-term basis.
27	28	This SC currently states that all sources may operate simultaneously unless limited by modeling based restrictions as listed in the SC. The SC is being revised to state that other SCs may limit simultaneous operations to account for new limits in this project on the simultaneous operations of VCUs REFINESBK and RAILVCU (See SC 11 changes).
28	29	VCU TRKFLR is being removed from this SC which contains Initial stack sampling requirements. The Crude Furnaces FH-1 and FH-2 are being added to this SC.
29	30	VCU TRKFLR is being removed from this SC which contains stack testing sampling port requirements. The Crude Furnaces FH-1 and FH-2 are being added to this SC.
30	--	Requirements to stack sampling VCU TRKFLR prior to use being removed. The SC is being deleted.
32	32	Paragraph G is being added to limit Splitter MSS activities as represented in the modeling.
38	38	Paragraph B is being added identifying that the flare, EPN FLR is used to control MSS Splitter emissions, and that the flare must meet all operating requirements in SC 23 when controlling MSS emissions.
New	39	New SC requiring that actual emissions from sources where Federal Applicability was determined by using Projected Actual emissions, be tracked for pollutants that were not subject to PSD review because Projected Actual emissions were used (see PSD Review Applicability section above). Sources include MVCU-1, MVCU-2, MVCU-3, MVCU-4, MVCU-5, RAILVCU, BOILERCAP (1-A, 1-B, and 1-C), and HTR-1.
39	40	Recordkeeping SC unchanged.
		Due to project changes cross references have been updated in SCs 15A, 21, 26, 31, 32, 33, 33D(2), 33F(3), 35D(3), 35F(2)(c), 37B(3)(b), 37E, 39(A)(3), 39B(6), and Attachment C.
Attachment C		New Splitter MSS activities are being added to Attachment C, the MSS Activity Summary.
Attachment E		The attachment lists control devices used for loading operations. For Railcar loading VCU TRKFLR is being removed as the backup control device to RAILVCU and replaced with VCU REFINESBK (also as backup).

Changes to the Special Conditions for Permit No. GHGPSDTX108M2

Old SC	New SC	Changes Being Made
2	2	VCU REFINESBK is replacing VCU TRKFLR. An exception for VCU REFINESBK to operate on propane in addition to natural gas is also being added. Crude Furnaces FH-1 and FH-2 are

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		being added to this SC, but will be subject to sulfur fuel limits in NSPS Subpart Ja, instead of limits on the grains of total sulfur per 100 dscf.
3	3	Crude Furnaces FH-1 and FH-2 are being added to paragraphs A and D of this SC.
5	5	VCU TRKFLR is being replaced with VCU REFINESBK. In paragraph B the maximum firing rate of VCU REFINESBK is being limited to 60 MMBtu/hr.
5, 6, 7, 8, 11	5, 6, 7, 8, 11	Permit No. PSDTX1408M1 is being changed to PSDTX1408M2
12	12	Crude Heaters FH-1 and FH-2 are being added to this SCs. VCU TRKFLR is being removed from the stack sampling requirements of this SC. VCU REFINESBK is replacing VCU TRKFLR for the control of railcar loading. However, VCU REFINESBK will not be added to this SC since VCU REFINESBK will be a rented temporary portable VCU only brought to the site when needed. Performance of the VCU will be based on vendor guarantees.
13, 16	13, 16	VCU TRKFLR is being replaced with VCU REFINESBK. Crude Heaters FH-1 and FH-2 are being added to these SCs.

Changes to Permit No. 118301 MAERT

EPN	Source	Change Being Made
T-COMB-1 through 5	Temporary VCU Combustion Units	These VCUs control floating tank roof landings. Draft SC 25 currently allows for high sulfur crude oil service. Higher than normal H ₂ S and SO ₂ emissions (listed as Alternate Operating Scenario [AOS] emissions on the MAERT) are emitted from these EPNs when a tank roof is landed, and the tank had been storing high sulfur crude as defined in draft SC 25. H ₂ S and SO ₂ hourly emissions are decreasing. See changes to draft SC 25.
DOCKFUG	Dock Loading Fugitives	H ₂ S is decreasing from changes to the High sulfur crude oil AOS. See changes to draft SC 25.
TRKFLR	Controlled Rail Loading Backup VCU	TRKFLR is being removed from the MAERT. This VCU was intended to be a backup device or alternate means of control for rail car loading when the RAILVCU was not operating, but it was never built. RAILVCU operates under the "Controlled Loading Annual Emissions Cap" along with 5 MVCUs. The removal of TRKFLR does not require revision of the Cap since TRKFLR and RAILVCU control the same activity and TRKFLR was an alternate means to control the emissions represented in the Cap for the RAILVCU.
MVCU-2 and MVCU-3	Controlled Marine Loading VCU Nos. 2 and 3	H ₂ S and SO ₂ are decreasing from changes to the High sulfur crude oil AOS. See changes to draft SC 25.
FUG	Fugitives	Fugitive VOC emissions are being updated per consolidated PBR emissions and project changes. H ₂ S is decreasing from changes to the High sulfur crude oil AOS. See changes to draft SC 25.
MSS-U	MSS Emissions Cap – Uncontrolled	H ₂ S is decreasing from changes to the High sulfur crude oil AOS. See changes to draft SC 25.
MSS-C	MSS Emissions Cap Controlled	H ₂ S is decreasing from changes to the High sulfur crude oil AOS. See changes to draft SC 25.
FH-1 FH-2 FLR FUG-S MSS-Split	Crude Furnace 1 Crude Furnace 2 Flare Splitter Piping Fugitives MSS Emissions - Splitter Vessels	New EPNs being added to the MAERT.
REFINESBK	Controlled Rail Loading Backup VCU	New EPN replacing TRKFLR as the backup Railcar loading VCU. TRKFLR is being removed (See above). REFINESBK is being incorporated by

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		consolidation from PCP No. 170950. REFINESBK will not operate under the "Controlled Loading Annual Emissions Cap".
	Footnote 3	The definition of H ₂ S has been added to this footnote. In a previous project H ₂ S was authorized and listed on the MAERT, but in error was not defined in this footnote.
	Footnote 6	This footnote identifies H ₂ S and SO ₂ emissions from Alternative Operating Crude Oil Scenario (high sulfur crude oil). An additional note is being added to this footnote identifying that if annual alternate scenario emissions for an EPN are not listed on the MAERT then they are included in the EPN's annual emissions for routine operations.
	Footnote 9	The footnote is being revised to better clarify its intent and facilities subject to the loading Cap. The Railcar backup VCU TRKFLR is being removed from this footnote.

Changes to the MAERT for Permit No. GHGPSDTX108M2

GHG emissions are being added to the GHG MAERT for new combustion facilities, EPNs FH-1, FH-2, FLR, FUG-S, MSS-Split, and REFINESBK. On January 1, 2025 GWPs, factors used to calculate GHG CO₂e equivalents are changing per the Federal Register (Vol. 89, No. 81 / Thursday, April 25, 2024 / Rules and Regulations). To account for the January 1st change, GHG emission limits based on two sets of CO₂e limits are being added to the MAERT for EPNs with new or changing GHG emissions. The first set listed on the MAERT with footnote 6 are CO₂e equivalent emissions based on GWPs effective from January 1, 2015, till December 31, 2024. The second set listed with MAERT with footnote 7 are CO₂e equivalent emissions based on GWPs effective starting on January 1, 2025. GWPs established before January 1, 2025, will no longer be effective after December 31, 2024.

Best Available Control Technology

Control technology is consistent with PSD BACT for PSD pollutants (VOC, NO_x and GHG) and state minor NSR BACT for CO, SO₂, PM, PM₁₀, PM_{2.5}, and H₂S. A control technology review was conducted for all pollutants. The controls described in this section were determined to satisfy BACT requirements based on a review of recently issued permits from Texas and other states, and consideration of the RACT/BACT/LAER Clearinghouse (RBLC) data provided by the applicant. A more detailed description of the control technology review is included in the permit file.

Source Name	EPN	Best Available Control Technology Description
Crude Furnaces at 72.6 MMBtu/hr.	FH-1 and FH-2	VOC – Good combustion practices (GCP) and proper equipment design. Firing natural gas and plant fuel gas, which meets the TCEQ Tier I BACT guideline for heaters greater than 40 MMBtu/hr. The applicant identified potentially technically feasible technologies of similar sized heaters and furnaces using a search of the RBLC database. All of the following RBLC entries were furnaces and heaters from 48 to 94.1 MMBtu/hr and indicated VOC control through the use of GCP. Most of the entries also indicated VOC control through the firing of natural gas: RBLC ID Nos. AR-0115, IA-0106, IN-0263, KY-0110, KY-0115, and OH-0381, and TX-0874. NO _x – Ultra low NO _x burners that will achieve 0.03 lb/MMBtu max hourly and 0.03 lb/MMBtu annual average. Tier I BACT guideline for heaters greater than 40 MMBtu/hr is to provide justification if NO _x > 0.01 lb/MMBtu. The applicant identified potentially technically feasible technologies for similar sized heaters and furnaces using a search of the RBLC database, as follows: 78.2 MMBtu/hr furnace with GCP and low-NO _x burners at 0.035 lb/MMBtu (RBLC ID AR-0155), 60 MMBtu/hr furnace with GCP and low-NO _x burner 0.08 lb/MMBtu (RBLC ID KY-0110), 48 MMBtu/hr furnace with GCP and low-NO _x burner at 0.07 lb/MMBtu (RBLC ID KY-0110), 65.5 MMBtu/hr furnace with GCP and low NO _x burners 0.07 lb/MMBtu

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		<p>(RBLC KY-0115). The furnace vendor identified 0.03 is the best achievable rate for the furnaces with ultra low NOx burners. Per the RBLC none of the entries indicated the use of an SCR to control NOx for similar sized heaters. The use of an SCR is also not required by TCEQ Tier I BACT, which requires an SCR only when the firing rate is equal or greater than 300 MMBtu/hr and the NOx rate is >0.01 lb/MMBtu. The use of an SCR for heaters similar to the size that will be used by Jefferson is not required per the RBLC review or TCEQ Tier 1 BACT.</p> <p>CO – 50 ppmv corrected to 3% oxygen, which is the same as the TCEQ Tier I BACT guideline for heaters greater than 40 MMBtu/hr.</p> <p>SO₂ – Fired on pipeline quality sweet natural gas that contains 5 grains of less of total sulfur. This meets Tier I BACT for sulfur content in pipeline quality sweet natural gas. Low sulfur LPG fuel will also be fired. Tier I BACT for heaters does not specify a total sulfur limit in LPG. LPG will meet NSPS Subpart Ja requirements that the maximum H₂S concentration in the fuel gas feed will not exceed 162 ppmv on a rolling 3-hour average basis (updated hourly), and 60 ppmv on a 365 successive calendar day rolling average basis. See SC 16.</p> <p>PM – GCP and proper equipment design. Maximum opacity is limited to 5%, which meets TCEQ Tier I BACT guideline for heaters greater than 40 MMBtu/hr.</p> <p>GHG (CO₂e) – GCP and proper equipment design. TCEQ Tier I BACT is not established for GHG control. The applicant identified potentially technically feasible technologies for similar sized heaters and furnaces using a search of the RBLC database. All of the following RBLC entries were furnaces and heaters from 48 to 94.1 MMBtu/hr and indicated CO₂e control through the use of GCP. Most of the entries also indicated CO₂e control through the firing of natural gas: RBLC entry ID Nos. IA-0106, KY-0110, KY-0115, and OH-0381, TX-0770, TX-0873, TX-0874, and WI-0311.</p>
Flare	FLR	<p>VOC – Meets 40 CFR 63.670 specifications of minimum heating value and maximum tip velocity. Destruction Efficiency: 99% for certain compounds up to three carbons, 98% otherwise. No flaring of halogenated compounds is allowed. Flow monitor required. Composition or BTU analysis of waste stream required. Have a constant pilot light that is continuously monitored. The flare meets TCEQ Tier I BACT that it meets 40 CFR 60.18 (40 CFR 63.670 is considered equivalent or better), has a destruction Efficiency of 99% for certain compounds up to three carbons, 98% otherwise. No flaring of halogenated compounds is allowed. Flow monitor required. Composition or BTU analyzer also may be required. The applicant identified potentially technically feasible technologies for flares using a search of the RBLC database, as follows: The use of GCP, operates on pipeline of sweet natural gas, limits on flaring, meets 40 CFR 60.18, net heating value measured, equipped with a flow meter, and maintaining a continuous pilot flame. RBLC entry ID Nos. NM-0052, TX-0861, TX-0873, and TX-0930.</p> <p>NO_x – 0.138 lb/MMBtu. The flare will be fired on natural gas, the net heating value and flow rate will be monitored. NOx will be reduced by minimizing the amount of flaring to the extent possible and through the use of GCP. TCEQ Tier I BACT for flare NOx only requires that the emission factor be provided. The applicant identified potentially technically feasible technologies to reduce NOx from a flare using a search of the RBLC database, including: the use of natural gas or fuel gas as supplemental fuel and good combustion practices, and meeting the requirements of CFR 40.18. RBLC entry ID Nos. NM-0052, TX-0861, TX-0873, and TX-0930.</p> <p>CO – 0.2755 lb/MMBtu. This meets TCEQ Tier I BACT which requires that emission factors used be provided and referenced.</p> <p>H₂S – Pilot gas runs on natural gas meeting 1.5 grains H₂S per 100 ft³ per 30 TAC 101.1. This meets TCEQ Tier I BACT requires that H₂S be demonstrated on a case by case basis.</p>

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		<p>SO₂ – 1.5 grains H₂S per 100 ft³ per 30 TAC 101.1. 100% conversion of H₂S to SO₂. This meets TCEQ Tier I BACT which requires that emission factors used be provided and referenced.</p> <p>GHG (CO₂e) – GCP and proper equipment design and operation. TCEQ Tier I BACT is not established for GHG control. The applicant identified potentially technically feasible technologies for flares using a search of the RBLC. The technologies identified are the same used for VOC control (see VOC above).</p>
Fugitives	FUG-S	<p>VOC – 28VHP monitoring program. This meets Tier I BACT which requires Uncontrolled VOC emissions > 25 tpy to be monitored by the 28VHP leak detection and repair program. The applicant identified potentially technically feasible technologies for fugitives using a search of the RBLC as follows: Depending on the industry type Leak detection and repair (LDAR) programs are used based on federal applicability (many different 40 CFR 60 and 63 subparts, including 40 CFR 60 Subpart GGGa) as well as state specific fugitive monitoring programs such as Texas LDAR programs 28VHP, 28LAER, 28PI, and 28MID. The site's use of 28VHP and administering the requirements of 40 CFR 60 Subpart GGGa is consistent with monitoring programs or technologies identified in the RBLC.</p> <p>H₂S – H₂S present only in crude and calculated based on a maximum of 1500 ppmw in vapor and 15 ppmw in liquid on a short-term basis. On an annual average basis the dissolved H₂S in the stored crude oil is based on a maximum of 1,000 ppmw in vapor and 10 ppmw in liquid. The use of high sulfur crude is limited to two tanks at a short-term maximum of 5,000 ppmw in vapor and 50 ppmw in liquid. Monitored per 28VHP. This meets TCEQ Tier I BACT which requires that emission factors used be provided and referenced.</p> <p>GHG (CO₂e) – 28VHP monitoring program. The applicant identified potentially technically feasible technologies for flares using a search of the RBLC. The technologies identified are the same used for VOC control (see Fugitive VOC discussion above).</p>
MSS Wax Splitter	MSS-Split	<p>VOC, H₂S – The following methods represented by the applicant meet or exceed TCEQ Tier I BACT. Best Management Practices will be used including minimizing the number and duration of events; liquids will be sent to a knockout drum, drained to a closed vessel or liquid recovery system. Gasses will be degassed in accordance with the permit, to max outlet concentration of 10,000 ppmv, and maintained at that concentration until MSS activities are completed or refilling begins; degassed vapors will be routed to the flare (see EPN FLR) with minimum 98% DRE. Residual products with VP>0.5 psia will be removed from equipment and piping as a result of an MSS activity in a controlled manner. For VOC these methods are also consistent with those represented in the RBLC under RBLC Nos. TK-0756, TK-0884, TK-0886, TK-0901, TK-0942, TK-0955, and TK-0977.</p> <p>Entry RBLC ID TX-0930 (Centurion Brownsville) represented degassed vessels would be maintained at a maximum outlet concentration of 4,000 ppmv until MSS activities are complete or a vessel is refilled. Centurion Brownsville represented the lower concentration to limit health impacts when two vessels are being degassed simultaneously. As of March 2025, the Centurion Brownsville site has not been constructed, which means BACT for that site has not been fully demonstrated. Although the 4,000 ppmv is achievable by Jefferson it is not required as Federal BACT because its use by Centurion Brownsville was to reduce health impacts and not to establish new BACT or enhance current BACT.</p>
Rail car loading controlled by Backup rail	REFINESBK	<p>VOC – The applicant represented the following rail car loading BACT which meets TCEQ Tier I BACT: 100% capture efficiency assumed during loading. Railcars will be pressure tested to handle at least 15 psia and certified per Department of</p>

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Jefferson evaluated NO₂, SO₂, PM₁₀, PM_{2.5}, CO, and Ozone (NO₂ and VOC) for National Ambient Air Quality Standards (NAAQS), SO₂ and H₂S for Texas Administrative Code (TAC) Title 30, Chapter 112, State Property Line Standards, and VOCs for Health Effects. NO₂ and Ozone were reviewed for PSD impacts while all other NAAQS pollutants were reviewed for minor NSR impacts. All pollutants were modeled using AERMOD and reviewed by the TCEQ Air Dispersion Modeling Team (ADMT), which found the modeling acceptable in a memorandum dated October 4, 2024, for all review types and pollutants.

NAAQS PSD Analysis

A PSD De Minimis analysis for 1-hr and annual NO₂ and 8-hr O₃ precursor emissions (ozone as NO_x and VOC) was initially conducted to determine if a full impacts analysis would be required. The de minimis analysis modeling results indicated that the maximum predicted ground level concentrations (GLCmax) measured in micrograms per meter cubed (µg/m³) for 1-hr NO₂ exceeded its de minimis concentrations and required a full impacts analysis. Initial annual NO₂ and O₃ results (GLCmax) were below their respective de minimis concentrations and no further analysis was required.

Pollutant	Averaging Time	GLCmax (µg/m ³)	De Minimis (µg/m ³)
NO ₂	1-hr	68	7.5
NO ₂	Annual	0.9	1
O ₃	8-hr	0.2	1

The ozone De Minimis level is the level recommended by the EPA. The use of the EPA recommended De Minimis level is sufficient to conclude that a proposed source will not cause or contribute to a violation of the ozone NAAQS.

A full impacts analysis was performed for 1-hr NO₂ where the background concentration of NO₂ was added to the project's GLCmax and compared to the NAAQS Standard for NO₂. As indicate below the total predicted concentration will not result in an exceedance of the NAAQS.

Pollutant	Averaging Time	GLCmax (µg/m ³)	Background (µg/m ³)	Total Conc. = [Background + GLCmax] (µg/m ³)	Standard (µg/m ³)
NO ₂	1-hr	124	59	183	188

NAAQS Minor NSR

The applicant additionally performed minor NSR De Minimis analysis for NAAQS pollutants SO₂, PM₁₀, PM_{2.5}, and CO at applicable NAAQS averaging times. As indicated below except for 1-hr and 3-hr SO₂ all NAAS pollutants were below their respective De Minimis concentrations for relevant averaging times and no further analysis was required.

Pollutant	Averaging Time	GLCmax (µg/m ³)	De Minimis (µg/m ³)	Below De Minimis?
SO ₂	1-hr	67	7.8	No
SO ₂	3-hr	77	25	No
PM ₁₀	24-hr	0.9	5	Yes
PM _{2.5}	24-hr	0.606	1.2	Yes
PM _{2.5}	Annual	0.028	0.13	Yes
CO	1-hr	203	2000	Yes
CO	8-hr	68	500	Yes

A full impacts analysis was performed for 1-hr and 3-hr SO₂ where the background concentration of SO₂ were added to the GLCmax concentrations and compared to the NAAQS Standards for SO₂. As indicate below the total predicted concentrations will not result in an exceedance of the NAAQS at the 1-hr or 3-hr averaging times.

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Pollutant	Averaging Time	GLCmax ($\mu\text{g}/\text{m}^3$)	Background ($\mu\text{g}/\text{m}^3$)	Total Conc. = [Background + GLCmax] ($\mu\text{g}/\text{m}^3$)	Standard ($\mu\text{g}/\text{m}^3$)
SO ₂	1-hr	142	See Background Discussion Below	142	196
SO ₂	3-hr	98	138	236	1300

The applicant followed EPA guidance and developed 1-hr SO₂ background concentrations which were summed and presented as the GLCmax. The method was found reasonable per the ADMT audit.

EPA revised the secondary SO₂ NAAQS from a 3-hr average to an annual average effective January 27, 2025. The applicant did not address this revision in the Air Quality Analysis. ADMT reviewed the proposed project and determined EPA's alternative demonstration approach summarized in a memorandum dated December 10, 2024, with a subject "Alternative Demonstration Approach for the 2024 Secondary Sulfur Dioxide National Ambient Air Quality Standard under the Prevention of Significant Deterioration Program", satisfies the annual average compliance requirement.

State Property Line Standards

SO₂ and H₂S 1-hr impacts were analyzed per State Property Line Standards found in 30 TAC 112. Site wide modeling results indicated that neither pollutant exceeded a State Property Line Standard.

Pollutant	Averaging Time	GLCmax ($\mu\text{g}/\text{m}^3$)	Standard ($\mu\text{g}/\text{m}^3$)
SO ₂	1-hr	316	817
H ₂ S	1-hr	48	162*

* Property indicated as not residential, recreational, business, or commercial.

Health Effects

Jefferson modeled all VOC emissions for both routine and MSS events to identify the maximum off property concentrations (GLCmax) for each pollutant. None of the VOC pollutants had an annual ESLs that was less than 10% of the pollutant's short-term ESL. Per the TCEQ Modeling and Effects Review Applicability (MERA) guidance (APDG document 5874v5, Revised 03/18) annual emissions of a VOC pollutant do not need to be evaluated if the pollutant's annual ESL is equal to or greater than the pollutant's short-term ESL. Except for atmospheric tower bottoms (ATB) all VOC pollutants had sitewide impacts that were below their respective ESLs. Per Step 8 of the MERA guidance sitewide modeled pollutants have an acceptable impact when the off-property impact (GLCmax) is less than the pollutant's ESL.

Pollutant and CAS No.	Averaging Time	GLCmax ($\mu\text{g}/\text{m}^3$)	ESL ($\mu\text{g}/\text{m}^3$)	Acceptable Impact
crude oil, < 1% benzene No CAS	1-hr	2775	3500	Yes
Gasoline 8006-61-9	1-hr	2775	3500	Yes
petroleum distillates 8002-05-9	1-hr	2775	3500	Yes
n-butane 106-97-8	1-hr	2775	66000	Yes
ATB 64741-45-3	1-hr	2819	1250	No

Minor NSR Site-Wide Modeling Results for Health Effects

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Pollutant	CAS#	Averaging Time	GLCmax ($\mu\text{g}/\text{m}^3$)	GLCmax Location	GLCni ($\mu\text{g}/\text{m}^3$)	GLCni Location	ESL ($\mu\text{g}/\text{m}^3$)
residues (petroleum), atm. Tower	64741-45-3	1-hr	2819	Northern Property Line	824	215 m SW	1250

Minor NSR Site-Wide Modeling Results for Health Effects over Water

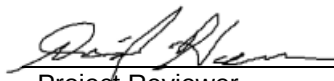
Pollutant	CAS#	Averaging Time	GLCmax ($\mu\text{g}/\text{m}^3$)	GLCmax Location	ESL ($\mu\text{g}/\text{m}^3$)
residues (petroleum), atm. Tower	64741-45-3	1-hr	2314	Southern Property Line	1250

Minor NSR Hours of Exceedance for Health Effects (Land)

Pollutant	Averaging Time	2 X ESL GLCmax
residues (petroleum), atm. Tower	1-hr	42

ATB had a GLCmax that exceeded the ESL by more than 2x and did not pass the MERA guidance for off-property impacts as shown in the tables above. Per MERA Appendix D when a pollutant's GLCmax exceeds the ESL by 2X or more a case-by-case review by the TCEQ Toxicology Risk Assessment, and Research Division (Toxicology Division) must be made to determine if the health and welfare effects of the chemical species are acceptable. A request to review the effects of ATB was sent to the Toxicology Division on 11/28/2024. A Toxicology Division Interoffice Memorandum dated 12/2/2024 determined that short- or long-term adverse health effects are not anticipated to occur among the general public as a result of exposure to the proposed emissions from the facility.



 6/12/2025
Project Reviewer Date
David Havens

Team Leader
Britany Gilman

6/13/2025
Date