

**OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION**

MEMORANDUM

January 3, 2025

TO: Phillip Fielder, P.E., Chief Engineer

THROUGH: Rick Groshong, Sr. Manager, Compliance, Enforcement, and Surveillance

THROUGH: Eric L. Milligan, P.E., Engineering Manager, Engineering Section

THROUGH: Alex Johnson, E.I., New Source Permits Section

FROM: Joseph K. Wills, P.E., Engineering Section

SUBJECT: Evaluation of Permit Application No. **2016-1066-C (M-2) PSD**
Keyera Energy, Inc.
Wildhorse Terminal
Facility ID No. 16676
Latitude: 35.93083°N, Longitude: 96.76277°W
Section 22, Township 17N, Range 5E, Lincoln County, Oklahoma
Directions: Travel 3.5 miles south on N. Little Ave. from the intersection
of N. Little Ave. and Hwy. 33 in Cushing. The facility is on the east side
of the road.

SECTION I. INTRODUCTION

Keyera Energy, Inc. (Keyera or the applicant) has submitted an application requesting to modify a Prevention of Significant Deterioration (PSD) construction permit which authorized construction of a new bulk terminal located in Cushing, Oklahoma. The proposed changes are summarized in Section II (Requested Changes) of this Memorandum.

The facility was originally authorized to begin construction under Permit No. 2016-1066-C PSD, issued on June 29, 2017. The facility is currently authorized to construct and operate under Permit No. 2016-1066-C (M-1) PSD, issued on September 11, 2019. An application for the initial Title V operating permit for the facility has been submitted and is currently under review.

On December 6, 2021, a voluntary self-disclosure was received which stated five (5) aboveground diesel storage tanks and butane offloading equipment were constructed at the facility without first obtaining a construction permit. Enforcement Case No. 10280 was opened as a result of the self-disclosure. The enforcement case is discussed further in Section IX (Compliance) of this Memorandum.

The facility is classified under NAICS Code 486110 for Pipeline Transportation of Crude Oil and SIC Code 4612 for Crude Petroleum Pipelines. The facility is a listed PSD major source, a crude

oil storage facility exceeding 300,000-barrel (bbl) storage capacity with proposed permitted emissions in excess of 100 TPY. Potential VOC emissions have been estimated at 181.14 TPY. Potential emissions of any single Hazardous Air Pollutant (HAP) are less than 10 TPY, and potential emissions of total HAP are less than 25 TPY. Therefore, the facility will be considered a minor source of HAP emissions.

SECTION II. REQUESTED CHANGES

Keyera has proposed several changes from the previous permit to reflect as-built emission sources. The changes requested include:

- Update Emission Unit (EU) IDs for the floating roof tanks,
- Removal of several floating roof tanks from the project,
- Removal of several limited-use engines from the project,
- Addition of three (3) vertical fixed roof diesel storage tanks,
- Addition of butane offloading skid equipment,
- Addition a 700-gallon solvent tank, T-L2,
- Lowering the capacity of sump tank T-S2 from 1,000 gallons to 500 gallons,
- Updating equipment specifications to reflect as-built emissions sources,
- Updating the calculated withdrawal and standing losses for all tanks,
- Updated the calculated landing loss event emissions for all tanks,
- Updated the calculated cleaning loss event emissions for all tanks,
- Removal of tank grouping limits for roof landings and cleanings,
- Removal of the RVP 10 limitation for petroleum liquids stored at the facility and replace with a maximum true vapor pressure limit of less than 11.1 psia,
- Updated BACT analysis and requirements based on updated emissions calculations, and
- Included new BACT analysis requirements for new equipment.

The specific conditions of the previous permit related to tank roof landings and cleanings were based on potential to emit calculations which assumed a shorter low roof elevation than that of the as-built designs. The low roof elevation would not have allowed for cleaning and API 653 inspections to be completed. Therefore, the applicant is requesting modification to the specific conditions based on updated calculations representative of the as-built high leg elevations.

Due to the nature of the changes, the BACT analysis for each previously authorized emissions source was re-evaluated and BACT has been applied to new emissions sources associated with the project.

These proposed changes are considered significant modifications because they involve changes in permit conditions that are required to be based on case-by-case determinations; therefore, the application will be processed as a Tier II.

SECTION III. FACILITY DESCRIPTION

The facility is designed to receive crude oil via pipeline and tank trucks and store crude in tanks for later transportation via pipeline. Construction of the first tank at the facility commenced on

March 5, 2019. The facility commenced first operations on June 9, 2021. No outbound crude oil loading stations for tank trucks will be located at the terminal.

Crude oil samples are routinely acquired in closed containers for further on-site analysis. Approximately 18,000 gallons of crude oil are used annually for this testing. A solvent (mineral spirits) is used to cut the crude oil samples and to clean up the sample containers after analysis is complete. The solvent is stored in containers, and approximately 6,000 gallons of solvent are used annually.

The facility also receives liquid butane from truck mounted cargo vessels and containerizes it until it is ready to be blended with crude product and shipped off-site for the client. Liquid butane enters the facility via cargo truck where it is offloaded via a 2-bay overhead rack and is sent through a lease automatic custody transfer (LACT) unit to storage in one of many pressurized bullet tanks. When the addition of butane is required to meet customer specifications, a specific volume of butane is then transported via pump from the bullet tanks and sent to the butane blending station where via the direction of a series of analyzers, the butane is added volumetrically to the flow of crude in the pipeline.

Throughout the entire process, the butane exists the liquid phase. All offloading is accomplished through liquid tight connections. Butane will vaporize at temperatures at or near 34°F under atmospheric pressure. Therefore, the possibility of an emission event would stem from a liquid discharge of butane, which under routine operations, would be most likely to occur at the connect/disconnect with the cargo truck at the offloading rack; however, a release is minimized with the use of a Todo Dry-Break system. The Todo coupler consists of a hose unit (coupler) and a tank unit (adapter). Offloading can only occur with tanks fitted with the Todo adapter. When ready to connect, the operator will fit the coupler to the adapter and turn the coupler to lock the fitting. Flow is restricted through the device until the coupler is fully locked. To close the valves and unlock the device, the procedure is performed in reverse. The offload hose is part of a closed pipe system and is specifically designed and hydrostatically tested to handle the pressure. The hoses are re-tested annually.

SECTION IV. EQUIPMENT

VOC emissions from the storage of crude oil prior to final transportation are controlled by either an external or internal floating roof design. Additional emission sources on-site include tank roof landings, tank cleanings, an emergency generator engine, a fire pump engine, fuel storage tanks, sump tanks, solvent storage tanks, pig launchers and receivers, and fugitive equipment leaks. The following tables show the equipment at the Wildhorse Terminal:

Each external floating roof storage tank is equipped with a welded pontoon-type deck external floating roof with a mechanical shoe primary seal and a rim mounted secondary seal system to reduce evaporative losses of the stored liquid. The internal floating roof surge tank is equipped with a welded pontoon-type deck internal floating roof with a mechanical shoe seal to reduce evaporative losses of the stored liquid.

Table IV.1. EUG 1A – External Floating Roof Tanks – Normal Operations

| EU ID# | Contents | Roof Type | Bottom Design | Capacity (Nominal) (bbl) | Working Height (ft) | Diameter (ft) | Construction Date |
|--------|-----------|-----------|---------------|--------------------------|---------------------|---------------|-------------------|
| T-204 | Crude Oil | EFR | Drain-Dry | 250,000 | 59 | 175 | 3/25/2019 |
| T-211 | Crude Oil | EFR | Drain-Dry | 250,000 | 60 | 175 | 4/15/2019 |
| T-212 | Crude Oil | EFR | Drain-Dry | 250,000 | 59 | 175 | 5/23/2019 |
| T-205 | Crude Oil | EFR | Drain-Dry | 350,000 | 60 | 206 | 3/11/2019 |
| T-213 | Crude Oil | EFR | Drain-Dry | 350,000 | 60 | 206 | 4/8/2019 |
| T-214 | Crude Oil | EFR | Drain-Dry | 350,000 | 60 | 206 | 5/13/2019 |
| T-215 | Crude Oil | EFR | Drain-Dry | 350,000 | 60 | 206 | 6/17/2019 |
| T-216 | Crude Oil | EFR | Drain-Dry | 350,000 | 60 | 206 | 6/13/2019 |
| T-201 | Crude Oil | EFR | Drain-Dry | 500,000 | 60 | 249 | 5/13/2019 |
| T-202 | Crude Oil | EFR | Drain-Dry | 500,000 | 60 | 249 | 4/29/2019 |
| T-203 | Crude Oil | EFR | Drain-Dry | 500,000 | 60 | 249 | 3/19/2019 |
| T-206 | Crude Oil | EFR | Drain-Dry | 500,000 | 60 | 249 | 3/5/2019 |

Table IV.2. EUG 1B – Internal Floating Roof Tanks – Normal Operations

| EU ID# | Contents | Roof Type | Bottom Design | Capacity (Nominal) (bbl) | Working Height (ft) | Diameter (ft) | Construction Date |
|--------|-----------|-----------|---------------|--------------------------|---------------------|---------------|-------------------|
| T-221 | Crude Oil | IFR | Drain-Dry | 20,000 | 38 | 63 | 7/1/2019 |

Table IV.3. EUG 1C – Fuel Storage Tanks – Normal Operations

| EU ID# | Equipment | Roof Type | Capacity (gal) | Construction Date |
|--------|---|-----------|----------------|-------------------|
| AST-1 | Diesel fuel storage tank for GEN-1 | VFR | 2,500 | 5/1/2020 |
| AST-2 | Diesel fuel storage tank for FP-2 | VFR | 830 | 5/1/2020 |
| AST-3 | Diesel storage tank for other equipment | VFR | 250 | 5/1/2020 |

Table IV.4. EUG 1D – Butane Bullet Tanks

| EU ID# | Equipment | Capacity (gal) | Max Pressure (psig) | Max Temp. (°F) | Construction Date |
|--------|--------------------------------|----------------|---------------------|----------------|-------------------|
| V-111 | Butane Pressurized Bullet Tank | 120,000 | 150 | 120 | 2020 |
| V-112 | Butane Pressurized Bullet Tank | 120,000 | 150 | 120 | 2020 |
| V-113 | Butane Pressurized Bullet Tank | 120,000 | 150 | 120 | 2020 |
| V-114 | Butane Pressurized Bullet Tank | 120,000 | 150 | 120 | 2020 |
| V-115 | Butane Pressurized Bullet Tank | 120,000 | 150 | 120 | 2020 |
| V-116 | Butane Pressurized Bullet Tank | 120,000 | 150 | 120 | 2020 |

Table IV.5. EUG 2 – Tank Roof Landings

| EU ID | Equipment | Construction / Modification Date |
|-------|--------------------|----------------------------------|
| LAND | Tank Roof Landings | 3/5/2019 |

Table IV.6. EUG 3 – Tank Cleanings

| EU ID | Equipment | Construction / Modification Date |
|-------|----------------|----------------------------------|
| CLEAN | Tank Cleanings | 3/5/2019 |

Table IV.7. EUG 4 – Fugitive Equipment Leaks

| EU ID | Equipment | Service Type | Component Count |
|--------------------|-----------|--------------|-----------------|
| FUG ⁽¹⁾ | Valves | Light Oil | 1,000 |
| | Flanges | Light Oil | 3,000 |
| | Other | Light Oil | 40 |
| | Pumps | Light Oil | 40 |

⁽¹⁾ Fugitive equipment leak components were constructed as of March 5, 2019.

Table IV.8. EUG 5 – Limited-Use Engines

| EU ID | Equipment | Rating (HP) | Construction / Modification Date |
|-------|--|-------------|----------------------------------|
| GEN-1 | Caterpillar C13 Emergency Generator Engine | 620 | 2021 |
| FP-2 | Clark C18H0 UFAD68 Fire Pump Engine | 687 | 2021 |

Table IV.9. EUG 6 – Butane Offloading Skid

| EU ID | Equipment | Rating / Capacity | Construction / Modification Date |
|-------|------------------------|-------------------|----------------------------------|
| BOS | Butane Offloading Skid | N/A | 5/1/2020 |

N/A = Not applicable.

Table IV.10: EUG 7 –Insignificant/Trivial Activities

| EU ID | Equipment | Rating / Capacity | Construction / Modification Date |
|--------------|----------------------------------|--------------------------|---|
| P- to P-8 | Pigging Equipment | N/A | 2019 |
| T-S1 | Underground horizontal sump tank | 4,000 gallons | 2019 |
| T-S2 | Aboveground lab sump tank | 500 gallons | 2019 |
| T-L1 | Area 400 lab solvent tank | 500 gallons | 2019 |
| T-L2 | Lab solvent tank | 700 gallons | 2019 |

N/A = Not applicable.

SECTION V. PSD REVIEW

A. PSD Applicability Analysis

The project is subject to a PSD review because it is a listed PSD-major source, a crude oil storage facility exceeding 300,000-barrel (bbl) storage capacity with proposed permitted emissions in excess of 100 TPY. The pollutants subject to PSD review are listed in the following table.

Table V.1. PSD Applicability

| Pollutant | Project Emissions (TPY) | PSD Threshold (TPY) | Subject to PSD? |
|-------------------|--------------------------------|----------------------------|------------------------|
| NO _x | 2.71 | 100 | No |
| CO | 1.87 | 100 | No |
| VOC | 181.14 | 100 | Yes |
| PM ₁₀ | <1.0 | 100 | No |
| PM _{2.5} | <1.0 | 100 | No |
| SO ₂ | <1.0 | 100 | No |

The full PSD review consists of the following:

- A. Determination of Best Available Control Technology (BACT);
- B. Evaluation of existing air quality and determination of monitoring requirements;
- C. Air Quality Impact Analysis
- D. Evaluation of source-related impacts on growth, soils, vegetation, and visibility; and
- E. Evaluation of Class I area impacts.

B. Best Available Control Technology (BACT)

Any major stationary source or major modification subject to PSD review must undergo an analysis to ensure the use of best available control technology (BACT). The requirement to conduct a BACT analysis is set forth in 40 CFR §52.21. BACT is defined in 40 CFR §52.21 as:

“...best available control technology means an 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..."

A BACT analysis is required for each new or physically modified emission unit for each pollutant that exceeds an applicable PSD significant emission rate (SER). Since the VOC emissions from the proposed project exceed the applicable PSD SER, a BACT analysis is required to assess the necessary levels of control for this pollutant.

The following methodology for performing a top-down BACT analysis has been developed from the US EPA's 1990 Draft New Source Review Workshop Manual - BACT Guidance. The analysis utilizes five key steps to identify the most suited BACT option for the project. The first step in this approach is to determine, for the emission unit in question, the most stringent control available for a similar or identical source or source category. If it is shown that this level of control is technically, environmentally, or economically infeasible for the unit in question, then the next most stringent level of control is determined and similarly evaluated. This process continues until the BACT level under consideration cannot be eliminated by any substantial or unique technical, environmental, or economic objections.

Step 1: Identify Available Control Technologies

Available control technologies are identified for each emission unit in question. The following methods are used to identify potential technologies: 1) researching the Reasonably Available Control Technology (RACT)/BACT/Lowest Achievable Emission Rate (LAER) Clearinghouse (RBLC) database, 2) surveying regulatory agencies, 3) drawing from previous engineering experience, 4) surveying air pollution control equipment vendors, and 5) surveying available literature.

Step 2: Eliminate Technically Infeasible Options

After the identification of control options, an analysis is conducted to eliminate technically infeasible options. A control option is eliminated from consideration if there are process-specific conditions that prohibit the implementation of the control technology or if the highest control efficiency of the option would result in an emission level that is higher than any applicable regulatory limits, such as an NSPS.

Step 3: Rank Remaining Control Options by Control Effectiveness

Once technically infeasible options are removed from consideration, the remaining options are ranked based on their control effectiveness. If there is only one remaining option, or all of the remaining technologies could achieve equivalent control efficiencies, ranking based on control efficiency is not required.

Step 4: Evaluate and Eliminate Control Technologies Based on Energy, Environmental, and Economic Impacts

Beginning with the most efficient control option in the ranking, detailed economic, energy, and environmental impact evaluations are performed. If a control option is determined to be economically feasible without adverse energy or environmental impacts, it is not necessary to evaluate the remaining options with lower control efficiencies.

The economic evaluation centers on the cost effectiveness of the control option. Costs of installing and operating control technologies are estimated following the methodologies outlined in the EPA’s OAQPS Control Cost Manual (CCM) and other industry resources. Cost effectiveness is expressed as dollars per ton of pollutant controlled. Objective analyses of energy and environmental impacts associated with each option are also conducted. Both beneficial and adverse impacts are discussed and quantified.

Step 5: Select BACT and Document the Selection as BACT

In the final step, one pollutant specific control option is proposed as BACT for each emission unit under review based on evaluations from the previous step. The resulting BACT standard is an emission limit unless technological or economic limitations of the measurement methodology would make the imposition of an emissions standard infeasible, in which case a work practice standard can be imposed.

i. BACT Analysis for Storage Tanks – Normal Operations (Standing and Withdrawal Losses)

a. Step 1: Identify Available Control Technologies

Several different control options have been selected for BACT top-down analysis for control of emissions from normal tank operations (standing and withdrawal losses). The following table lists commercially available controls for petroleum liquid storage. The control technologies are listed in order of decreasing emission reduction potential.

Table V.2. Control Technologies for Normal Operations

| Control Technologies |
|--|
| Routing Vapor Space to a Control Device <ul style="list-style-type: none"> • Thermal Incinerator • Flare • Vapor Combustor • Refrigerated Condenser • Carbon Adsorption |
| Roof Selection <ul style="list-style-type: none"> • Floating Roofs (e.g., EFRs, IFRs) • Fixed Roof |

| |
|--|
| Control Technologies |
| Seal Selection <ul style="list-style-type: none"> • Double Seal • Liquid, Mechanical Shoe • Wiper |
| Submerged Fill |
| Good Operating and Maintenance Practices |

Routing Vapor Space to a Control Device

Evaporative losses from tanks can be routed to a variety of control devices with varying destruction efficiencies. Combustion type controls, including flares, combustors, and incinerators, destroy VOCs with auxiliary fuel injection. Destruction efficiencies range from 98% to 99.9%, depending on the material. Adsorption technologies, which physically filter VOC, have capture efficiencies that range from 50% to 90%, depending on the material. Condensation techniques can achieve removal efficiencies above 90% relative to VOC composition and concentration in the emission stream. Refrigerated condensers are used as air pollution control devices for treating emissions streams with high VOC concentrations for sources such as gasoline bulk terminals. Pressure/vacuum conservation vents reduce evaporation of tank contents when vapor space is increased or decreased due to liquids being pumped in or out of the tank. These vents are typically mounted to a flange or pipe that connects to the vapor space above the liquid level in the tank.

Roof Selection

Three basic roof types are considered: external floating roof, internal floating roof, and fixed roof.

Fixed roof tanks – These tanks consist of a cylindrical steel shell with a permanently fixed roof that can be either cone-shaped, dome-shaped, or flat. Evaporative losses occur in these tanks through vapor expansion and contraction and from working losses as filling vapors are expelled from the tank.

External floating roof tanks (EFRs) – These tanks consist of an open cylindrical steel shell with a roof, or deck, which floats on the surface of the stored liquid. The roof height changes with the liquid level of the material stored within the tank, effectively minimizing vapor space. A rim seal system is attached to the deck’s perimeter and makes contact with the tank wall. These two systems combine to reduce VOC emissions from the stored material. Losses from these tanks originate from exposed liquid at the rim seal system and deck fittings. In addition to the basic tank configuration, there are several add-on options to further reduce emissions and are listed as follows:

- Cone Roof Add-on with Vapor Space Routed to a Control Device. This option would involve installing a fixed cone roof over the top of each tank at the terminal, thereby creating internal floating roof tanks from the previous EFR tank. The coned exterior roofs would be supported by columns that penetrate through the floating roof inside each tank. The fixed coned roof design acts to block the wind flow across the top of each tank and be part of a system to collect emissions coming out the top of the floating roof of each tank. A dedicated vapor collection system would be installed to route emissions from each tank

to a dedicated control device as listed in the previous control technology category (Routing Vapor Space to a Control Device).

- Cone Roof Add-on Only – This option involves installing a fixed coned roof as in the previous option except without installation of a control device as discussed in the previous control technology category and associated collection piping. The primary function of the fixed external roof in this alternative would be to block the wind and decrease standing and withdrawal emissions from each tank. This option is estimated to provide a control efficiency of up to 44%.
- Domed External Floating Roof – This option involves constructing a self-supporting geodesic dome over the existing external floating roof on each tank at the terminal. Similar to the cone roof add-on option, geodesic domes are utilized to minimize the wind over the top of the external floating roof. The domed tanks are generally vented with circulation vents at the top of each roof. Emissions from each domed EFR tank would not be piped to a control device. Since the geodesic domes would be self-supporting, the installation of column supports penetrating through the floating roof would not be necessary and gaps in the floating roof would be minimized. This design is still referred to as an external floating roof because it utilizes the existing heavier-duty, double-sealed fully intact EFR, though for emission estimation purposes it is treated as an IFR with no support columns. This option is estimated to provide a control efficiency of up to 73%.

Internal floating roof tanks (IFRs) – These tanks are simply EFRs with an additional, fixed roof above the floating roof. The fixed roof serves as a vapor barrier and blocks air movement. Additionally, the internal floating roof tank deck is lighter than those used in external roof tanks. Losses from these tanks are the same as EFRs, with the exception that emissions induced by air movement are reduced.

Seal Selection

Rim seals are used in floating roof tanks, and allow the tank to rise and fall with the level of the liquid in the tank. Seals minimize the annular space between the tank wall and rim, reducing emissions. A rim seal can consist of a single primary seal or also be paired with a secondary seal, which is mounted above the primary seal (double seal).

Mechanical shoe seals use a light-gauge metallic band as the contact with the tank shell. This seal consists of a series of sheets, or shoes, joined in a ring. The sheets are held against the tank shell mechanically. The shoes' bottoms extend below the liquid surface and confine the vapor space between the shoe and floating roof. Primary seal fabric extends from the shoe to the rim and seals the vapor space from the atmosphere.

Resilient filled seals either eliminate the vapor space between the rim seal and liquid surface (liquid mounted) or allow vapor space between the rim seal and liquid surface (vapor mounted). These seals are made of an open-cell foam covered in a coated fabric and attach to the deck's perimeter. Filled seals expand and contract while maintaining contact with the tank wall and accommodate variable annular rim space widths. These seals give room for the floating roof to move with the

material surface without binding. To effectively reduce emissions, seal joints must be vapor tight, and the seal must be in contact with the tank wall.

Wiper seals consist of a continuous annular blade made of flexible material which is fixed to a mounting bracket on the floating roof perimeter. This blade spans the annular rim space and contacts the tank wall. These seals are vapor mounted, and a vapor space exists between the liquid surface and the seal. The blades are either made of a cellular, elastomeric material, or a foam core wrapped in fabric. To effectively reduce emissions, the mounting must be vapor tight, and the seal must extend around the deck while maintaining contact with the tank wall.

In a double seal configuration, secondary seals are either resilient filled or flexible wiper seals, which can further reduce evaporative loss. Secondary seals can be either shoe or rim mounted; although rim mounted seals are more effective due to coverage of the entire rim vapor space.

Submerged Fill

Submerged loading can be accomplished using the bottom loading method. A bottom-loading fill pipe is permanently attached to the bottom of the tank, significantly controlling liquid turbulence. Subsequently, much lower vapor generation occurs than during splash loading, where the tank is filled from the top of the tank.

Good Operating and Maintenance Practices

Good operating and maintenance practices for normal operations include, but are not limited to, floating roofs with white-coated decking, routine inspections, and timely repairs.

b. Step 2: Eliminate Technically Infeasible Options

All control options are technically feasible when considered individually. These options are further considered in the following steps of the top-down BACT analysis.

c. Step 3: Rank Remaining Control Options by Control Effectiveness

Floating roof tanks reduce vapor space emissions more effectively than fixed roof tanks because the deck rests atop the liquid surface and reduces the vapor space within the tank.

Liquid-mounted seals provide better emission control than mechanical-shoe and vapor mounted seals, but do not greatly out-perform mechanical-shoe seals. The maintenance and reliability of mechanical-shoe seals may be advantageous as compared to liquid-mounted seals.

Add-on control options add additional emission control beyond the basic required components of each tank.

Routing Vapor Space to a Control Device is the most effective option (50% to 99.9%), followed by geodesic dome installation (~73%), cone roof installation (~44%), seal selection, submerged fill, and then good operating and maintenance practices.

In addition to control effectiveness and emissions considerations, each BACT option must also be evaluated for economic impacts, environmental, and energy impacts. These considerations are further discussed in Step 4.

d. Step 4: Evaluate and Eliminate Control Technologies Based on Energy, Environmental, and Economic Impacts

Since NSPS Subpart Kb requires an EFR or IFR roof, Keyera has assumed this control option to be the baseline requirement. Under this assumption, submerged fill would be meaningless since there will be no vapor space for splash loading to occur.

The economic consideration for each remaining BACT option is based on a cost analysis, in part, total capital costs, direct costs, and total derived annualized cost. The cost analysis was based on industry cost estimates for similar tanks constructed in Cushing and EPA’s Cost Control Manual. Note, sizing of the thermal oxidizer (TO) depends on the hourly rate of controlled VOC, and annual operating costs (utilities, pilot fuel, etc.) vary based on mode of operation (e.g. continuously for normal operations and intermittently for landings and cleanings).

The following tables present the cost analysis of each of the add-on control options.

Table V.3. Initial Costs (Storage Tanks – Normal Operations) ⁽¹⁾

| Proposed Tanks | | Floating Roof w/Cone Roof & Vapor Collection | | Floating Roof w/Cone Roof Only | | Floating Roof with Geodesic Dome Roof | |
|----------------|-----------|--|---------------------|--------------------------------|---------------------|---------------------------------------|---------------------|
| Capacity | Qty. | Cost/Tank | Total Cost | Cost/Tank | Total Cost | Cost/Tank | Total Cost |
| 250,000 | 3 | \$1,087,983 | \$3,263,949 | \$1,087,983 | \$3,263,949 | \$863,294 | \$2,589,882 |
| 350,000 | 5 | \$1,386,123 | \$6,960,615 | \$1,386,123 | \$6,960,615 | \$1,147,374 | \$5,736,870 |
| 500,000 | 4 | \$1,833,333 | \$7,333,332 | \$1,833,333 | \$7,333,332 | \$1,573,494 | \$6,293,976 |
| 20,000 | 1 | \$402,261 | \$402,261 | \$402,261 | \$402,261 | \$209,910 | \$209,910 |
| Totals | 13 | -- | \$17,930,157 | -- | \$17,930,157 | -- | \$14,830,638 |

⁽¹⁾ The “initial costs” provided refer to the costs associated with constructing a fixed roof only, and do not include the cost of the tank shell buildout.

Table V.4. Cost Analysis (Storage Tanks – Normal Operations) for Add-on Options

| | Floating Roof w/Cone Roof & Vapor Collection | Floating Roof w/Cone Roof Only | Floating Roof with Geodesic Dome Roof |
|--|--|--------------------------------|---------------------------------------|
| Purchased Equipment Cost | | | |
| Tank Roofs | \$17,930,157 | \$17,930,157 | \$14,830,638 |
| Thermal Oxidizer | \$4,789,474 | -- | -- |
| Piping from Tanks to Thermal Oxidizer ⁽¹⁾ | 289,427 | (1,105,000) | -- |
| Total Capital Investment | \$23,009,058 | \$16,825,157 | \$14,830,638 |
| Annual Cost | \$68,421 | -- | -- |

| | Floating Roof w/Cone Roof & Vapor Collection | Floating Roof w/Cone Roof Only | Floating Roof with Geodesic Dome Roof |
|-----------------------------------|---|---|--|
| Annualized Cost Estimation | | | |
| Interest | 6% | 6% | 6% |
| Equipment Life (yrs) | 15 | 15 | 15 |
| Total Annual Cost | \$2,437,497 | \$1,732,365 | \$1,527,003 |
| Emission Reductions | | | |
| Baseline Emissions (TPY) | 85.13 | 85.13 | 85.13 |
| Control Efficiency | 99% | 44% | 73% |
| Emissions Reduced (TPY) | 84.28 | 37.46 | 62.14 |
| BACT Cost (\$/Ton Reduced) | \$28,921 | \$46,246 | \$24,574 |

⁽¹⁾ Equipment cost of the cone roof and vapor collection option includes a portion of vapor piping of the tanks; therefore, the piping from tanks to thermal oxidizer represents additional piping required to route all the tanks to the thermal oxidizer.

From the tables above, the lowest available cost per ton reduced is approximately \$24,574. This value represents a significant economic impact. Due to the extremely high and unreasonable economic impact for each of these BACT options, they are inappropriate BACT alternatives beyond the baseline NSPS Subpart Kb standards for new tanks.

Environmental and energy impacts from the floating roof with cone roof and vapor collection option are as follows: increase in NOx emissions, increase in CO emissions, noise, and fuel consumption. The other control options evaluated have no considerable environmental or energy impacts. However, since the economic impacts for each of the options are unreasonably high, these impacts were not further considered.

e. Step 5: Select BACT and Document the Selection as BACT

Keyera has proposed to implement the following design elements and work practices:

- Floating roofs compliant with NSPS Subpart Kb standards,
- Primary mechanical shoe seal and secondary seal for EFR tanks,
- Primary mechanical shoe seal for IFR tanks, and
- Good operation and maintenance practices.

As mentioned previously, the resulting BACT standard is an emission limit unless technological or economic limitations of the measurement methodology would make the imposition of an emissions standard infeasible, in which case a work practice or operating standard can be imposed.

Additionally, Keyera proposes a BACT VOC emission limit of 181.14 VOC, facility-wide, on a 12-month rolling basis. This will allow Keyera flexibility in controlling the throughput and organizing liquids stored in each tank, while limiting emissions emitted by the facility. DEQ selects a BACT emission limit of 181.14 TPY VOC, facility-wide, on a 12-month rolling basis, along with the proposed design elements and work practice standards. The chosen level of BACT is consistent with findings from EPA’s RBLC for similar conditions and operations. The

clearinghouse listed several facilities (e.g. RBLC IDs OK-0139, OK-0175, OK-0176, LA-0286, and TX-0653) with crude oil storage tanks. Acceptable PSD BACT controls for these facilities were external floating roofs equipped with primary mechanical shoe and secondary seals (double seals), or internal floating roofs equipped with primary mechanical shoe.

ii. **BACT Analysis for Storage Tanks – Landings and Cleanings**

a. Step 1: Identify Available Control Technologies

The following table lists commercially available controls for landings in order of decreasing emission reduction potential. Control technologies for each pollutant were considered in order of decreasing emission reduction potential.

Table V.5. Control Technologies for Landings

| Control Technologies |
|--|
| Routing Vapor Space to a Control Device <ul style="list-style-type: none"> • Thermal Incinerator • Flare • Vapor Combustor • Refrigerated Condenser • Carbon Adsorption |
| Mobile Degassing <ul style="list-style-type: none"> • Thermal Oxidizer • Carbon Adsorption |
| Drain-Dry Design |
| Submerged Fill |
| Good Operating and Maintenance Practices |

Routing Vapor Space to a Control Device

In addition to the discussion in the BACT analysis for Storage Tanks – Normal Operations (Standing and Withdrawal Losses), over the top fixed vapor collection is another option that involves installing a fixed (or permanent) vapor collection line going over the top of the side wall of each floating roof tank at the terminal. The line would go through the existing floating roof to collect emissions from the vapor space formed underneath the floating roof as it lands. The use of this option would only be good during landing and cleaning events when a vapor space is created. During other times, the tank would be filled with liquid and the line would be submerged underneath the floating roof. Vapors that are collected would be piped to a common control device at the site. A thermal oxidizer would be the chosen control device to control volatile emissions from tanks at the site. The implementation and operation of this effort would be led by site personnel. In addition to the operation and maintenance of the vapor collection device that runs over the top of each tank, operators at the site would also be responsible for the maintenance and operation of the thermal oxidizer.

Mobile Degassing

Mobile degassing units are an alternative to running a fixed line to each tank. The units are portable and can be utilized during individual emissions events. The vapors generated during activities such as tank landings would be evacuated out of the vapor space in the tank and collected by the units. The gases collected are treated by a control device (e.g., carbon adsorber or thermal oxidizer). Efficiencies in excess of 95% are estimated by vendors.

Drain-Dry Design

Drain-dry design is the construction of the tank bottom with a slope which drains the liquid contents to the sump or sumps when liquid levels fall below the pipe outlet. The amount of remaining liquid is minimized during tank draining. Design may be cone-up, where the liquid drains to multiple sumps around the perimeter, or cone-down, typically with a single sump in the center of the tank.

Submerged Fill

See discussion in the BACT analysis for Storage Tanks – Normal Operations (Standing and Withdrawal Losses).

Good Operating and Maintenance Practices

40 CFR Part 60, Subpart Kb requires that the process of filling, emptying, and refilling be continuous and completed as rapidly as possible.

b. Step 2: Eliminate Technically Infeasible Options

All control options are technically feasible. These options are further considered in the following steps of the top-down BACT analysis.

c. Step 3: Rank Remaining Control Options by Control Effectiveness

Routing vapor space to a control device and mobile degassing reduces emissions from landing events more or less effectively dependent on the destruction technology.

Drain dry design reduces the emissions associated with landing and events by reducing the amount of material remaining on the bottom of the tank subject to volatilization.

Good operating and maintenance practices do not reduce emissions associated with individual emissions events, but instead limit event frequency and duration, decreasing potential emissions.

Routing Vapor Space to a Control Device is the most effective option (50% to 99.9%), followed by Mobile Degassing (~95%), drain dry design, submerged fill, and then good operating and maintenance practices.

In addition to control effectiveness and emissions considerations, each BACT option must also be evaluated for economic impacts, environmental, and energy impacts. These considerations are further discussed in Step 4.

d. Step 4: Evaluate and Eliminate Control Technologies Based on Energy, Environmental, and Economic Impacts

As with the BACT analysis for Normal Operations (Standing and Withdrawal Losses), Keyera has assumed 40 CFR Part 60, Subpart Kb requirements to be the baseline requirement since 40 CFR Part 60, Subpart Kb requires an EFR or IFR roof. Under this assumption, submerged fill would be meaningless since there will be no vapor space for splash loading to occur.

The economic consideration for each remaining BACT option is based on a cost analysis, in part, total capital costs, direct costs, and total derived annualized cost. The initial cost of the cone roof and vapor collection option for landings and cleanings remains the same as presented in the BACT analysis for normal operation of the storage tanks and therefore was not duplicated here. The cost analysis for the over the top fixed vapor collection was also based on industry cost estimates for similar tanks constructed in Cushing, Oklahoma. Cost estimates for the mobile degassing and vapor collection option are based on vendor quotes. The following table shows the initial costs of the potential control options. Cleaning hours are included in the total costs for use in the grouped cost analysis discussed below.

Table V.6. Initial Costs (Storage Tanks – Landings and Cleanings)

| Proposed Tanks | | | Over the Top Fixed Vapor Collection | | Mobile Degassing and Vapor Collection | |
|----------------|------------------|-------------------|-------------------------------------|--------------------|---------------------------------------|------------------|
| Capacity | Landings (hr/yr) | Cleanings (hr/yr) | Cost/Tank | Total Cost | Cost/Hour | Total Cost |
| 250,000 | 21 | 9.6 | \$350,000 | \$1,050,000 | \$1,480 | \$45,288 |
| 350,000 | 50 | 18 | \$350,000 | \$1,750,000 | \$1,480 | \$100,640 |
| 500,000 | 52 | 16 | \$350,000 | \$1,400,000 | \$1,480 | \$100,640 |
| 20,000 | -- | -- | \$350,000 | \$350,000 | \$1,480 | -- |
| Totals | | | -- | \$4,550,000 | -- | \$246,568 |

The following tables present the cost analysis of each of the control options. Costs were evaluated using the same control device for multiple landing and cleaning events.

Table V.7. Cost Analysis (Storage Tanks – Landings and Cleanings)

| | Floating Roof w/Cone Roof & Vapor Collection ⁽¹⁾ | Over the Top Fixed Vapor Collection | Mobile Degassing and Vapor Collection ⁽²⁾ |
|---------------------------------------|---|-------------------------------------|--|
| Purchased Equipment Cost | | | |
| Tank Roofs | \$17,930,157 | \$4,550,000 | -- |
| Thermal Oxidizer | \$4,789,474 | \$4,789,474 | \$246,568 |
| Piping from Tanks to Thermal Oxidizer | \$423,009 | \$423,009 | -- |
| Tank Mobilization | -- | -- | \$7,500 |
| Direct Costs | | | |
| Total Capital Investment | \$23,009,058 | \$9,762,483 | \$254,068 |
| Total Annual Cost | \$68,421 | \$68,421 | -- |

| | Floating Roof w/Cone Roof & Vapor Collection ⁽¹⁾ | Over the Top Fixed Vapor Collection | Mobile Degassing and Vapor Collection ⁽²⁾ |
|---|--|--|---|
| Annualized Cost Estimation | | | |
| Interest | 6% | 6% | 1% |
| Equipment Life (yrs) | 15 | 15 | 1 |
| Total Annual Cost | \$2,437,497 | \$1,073,593 | \$256,609 |
| Emission Reductions | | | |
| Baseline Emissions (TPY) ^(3,4,5,6) | 169.52 | 90.59 | 90.59 |
| Vapor Capture Efficiency ⁽⁷⁾ | -- | -- | 25% |
| Control Efficiency | 99% | 99% | 95% |
| Emissions Reduced (TPY) | 167.82 | 89.68 | 21.52 |
| BACT Cost (\$/Ton Reduced) | \$14,524 | \$11,971 | \$11,927 |

- (1) Since the Cone Roof & Vapor Collection option also controls standing and withdrawal emissions, these were included as part of the reduced emissions.
- (2) Mobile Degassing costs and durations are based on a vendor quote from ENVENT.
- (3) Landing emissions are based on all tanks being landed annually (7 hours per refill event for each 250K bbl tanks, 10 hours for each 350K bbl tank, and 13 hours for each 500K bbl tank).
- (4) Based on industry practice, tanks are typically cleaned once every 10 years, and the tank cleaning baseline emissions and durations have been annualized based on this conservative assumption:
 - Cleaning Duration = 32 hr (duration for 250K bbl tank cleaning) * 3 tank cleanings / 10 years; 36 hr (duration for 350K bbl cleaning) * 5 tanks; and 40 (duration for 500K bbl cleaning) * 4 tanks / 10 years.
- (5) Potential to emit for landings assumes all tanks landed once per year.
- (6) Potential to emit for cleanings assumes all 500K bbl tanks (highest emitters) cleaned once per year.
- (7) Mobile degassing is only feasible with a fixed roof installation. For EFR's, the vapor capture has been estimated by party consultants to be 25% liberally. It is only feasible to capture vapors through the vacuum breakers.

From the tables above, the reduction in emissions from the first two options range from 90.59 TPY to 169.52 TPY. Of these options, the lowest available cost per ton reduced is approximately \$11,971. This value represents a significant economic impact. It should be noted that the cost estimate does not include the consumer price index for the past several years since the previous BACT analysis was submitted; therefore, the costs calculated are a conservatively low estimate and the cost of installing these options are expected to be much higher. Due to the extremely high and unreasonable economic impact for each of these control options, they are inappropriate BACT alternatives beyond the baseline 40 CFR Part 60, Subpart Kb standards for new tanks.

The mobile degassing option represents an approximate value of \$11,927 per ton of VOC reduced. Additional costs associated with generator equipment, power supply rental, and fuel demands were not applied and may add to the final costs. Environmental impacts associated with this option include additional pollutants (NO_x, PM, SO₂, CO, and CO₂) from a mobile thermal oxidizer and a power generator. There are further impacts associated with mobilizing the degassing unit since it would need to be brought to the site for each landing event. The energy demands for this option include fuel usage for generators, the thermal oxidizer, and mobilization of equipment and crew. These energy demands are not common with the other BACT options presented in this analysis and are a considerable impact. Also, the uncertainty of a long-term agreement with a vendor and the uncertainty of future control costs, which can widely vary based on the vapor space composition, can significantly impact the effectiveness of this option. Therefore, the use of mobile degassing to control landings and cleanings does not represent an option that would be appropriate

given consideration of overall economic, environmental, and energy impacts. The RBLC listed several facilities with where the acceptable PSD BACT limits included limits on the frequency and duration of tank landings and cleanings. The RBLC did include vapor recovery controls for some facilities; however, these facilities are either located in non-attainment areas or are subject to state-specific requirements.

e. Step 5: Select BACT and Document the Selection as BACT

Keyera proposes the following design elements and work practice standards as BACT:

- Drain-dry design, and
- Good operation and maintenance practices.

Additionally, Keyera proposes a tank landing BACT VOC emission limit of 64.31 TPY, facility-wide, on a 12-month rolling basis and a tank cleaning BACT VOC emission limit of 26.28 TPY, facility-wide, on a 12-month rolling basis. This will allow Keyera flexibility in conducting tank roof landings as needed for each tank while limiting emissions emitted by the facility.

DEQ evaluated the proposed BACT from Keyera and agrees that their proposal is acceptable as BACT. The chosen level of BACT is consistent with findings from EPA's RBLC for similar conditions and operations. As mentioned previously, the resulting BACT standard is an emission limit unless technological or economic limitations of the measurement methodology would make the imposition of an emissions standard infeasible, in which case a work practice or operating standard can be imposed. For the proposed storage tanks, DEQ selects a tank landing BACT VOC emission limit of 64.31 TPY, facility-wide, on a 12-month rolling basis and a tank cleaning BACT VOC emission limit of 26.28 TPY, facility-wide, on a 12-month rolling basis, along with the proposed design elements and work practice standards.

iii. BACT Analysis for Fugitive Equipment Leaks

a. Step 1: Identify Available Control Technologies

For most source types, the EPA's RACT/BACT/LAER Clearinghouse (RBLC) is the preferred reference. However, there were no results found for this source type at a crude oil terminal in the RBLC. The following table lists commercially available controls based on results found for other types of petroleum liquid storage and the control techniques outlined in EPA's Background Technical Support Document for NSPS Subpart OOOOa. The control technologies are listed in order of decreasing emission reduction potential.

Table V.8. Control Technologies for Fugitive Equipment Leaks

| |
|---|
| Control Technologies |
| Leak Detection and Repair Program (LDAR) <ul style="list-style-type: none"> • Method 21 • Optical Gas Imaging (OGI) • Audio, Visual, & Olfactory (AVO) |
| Good Operating and Maintenance Practices |

Leak Detection and Repair Program

An LDAR program is a system of procedures that an operator utilizes to locate and repair leaking fugitive components (e.g., valves, pumps, connectors, compressors, etc.) in order to minimize VOC emissions. LDAR programs involving Method 21, OGI, and AVO monitoring are already required by a number of NSPS Subparts, but none of these currently affect crude oil terminals.

Good Operating and Maintenance Practices

Good operating and maintenance practices involve good housekeeping, timely repair of leaking components, and compliance with other federal regulations such as the inspection requirements in a Spill Prevention, Control, and Countermeasures (SPCC) Plan.

b. Step 2: Eliminate Technically Infeasible Options

All control options are technically feasible when considered individually. These options are further considered in the following steps of the top-down BACT analysis.

c. Step 3: Rank Remaining Control Options by Control Effectiveness

The reductions associated with LDAR Programs vary depending on the frequency, leak definition, and type of monitoring. Quarterly monitoring using Method 21 can achieve an emissions reduction as high as 95 percent for valves in light liquid service.¹ Up to 80 percent control efficiency is achievable via quarterly OGI monitoring.² The control efficiency for weekly AVO inspections is 30 percent.³

d. Step 4: Evaluate and Eliminate Control Technologies Based on Energy, Environmental, and Economic Impacts

Since good operating and maintenance are already required by the SPCC Plan, this is considered the baseline option.

The economic consideration for each remaining option is based on the cost analysis in the following table.

¹ U.S. EPA, *Protocol for Equipment Leak Emission Estimates*, November 1995, p. 5-10. (EPA-453/R-95-017)

² U.S. EPA, *Background Technical Support Document for NSPS Subpart OOOOa*.

³ Texas Commission on Environmental Quality, *TCEQ publication RG-360A - Technical Supplement 3: Equipment Fugitive Leaks*, January 2007, p. A-33.

(https://www.tceq.texas.gov/assets/public/comm_exec/pubs/rg/rg360/rg-360-06/techsupp_3.pdf)

Table V.9. Cost Analysis for Fugitive Equipment Leaks

| Analysis Element | LDAR Program with Method 21 Monitoring | LDAR Program with OGI Monitoring | LDAR Program with AVO Monitoring |
|-------------------------------------|---|---|---|
| Program Costs | | | |
| Inspection Labor (\$/hr) | \$120 | \$128 | \$39 |
| Annual Inspection Hours | 64 | 48 | 48 |
| Maintenance Labor & Parts (\$/hr) | \$86 | \$86 | \$86 |
| Annual Maintenance Hours | 32 | 32 | 32 |
| Annual Program Records/Reports (\$) | \$2,500 | \$1,500 | \$1,500 |
| Total Annual Cost (\$) | \$12,932 | \$10,012 | \$6,124 |
| Emissions Reductions | | | |
| Baseline Emissions (TPY) | 0.90 | 0.90 | 0.90 |
| Control Efficiency | 95% | 80% | 30% |
| Emissions Reduced (TPY) | 0.13 | 0.11 | 0.04 |
| BACT Cost (\$/ton reduced) | \$15,125 | \$13,906 | \$22,681 |

- [1] Inspection labor for M21 & OGI based on contractor quote.
- [2] Inspection labor for AVO based on average engineering wages for Tulsa, OK published by the Bureau of Labor Statistics.
- [3] Inspection/maintenance hours based on quarterly inspections for similarly-sized facilities.
- [4] Maintenance labor and parts based on guidance in EPA's Control Cost Manual (labor is 110% of inspection labor and the cost for parts is equivalent to maintenance labor).
- [5] LDAR program recordkeeping and reporting based on contractor quote.
- [6] M21 reduction is for valves in light liquid service – the reduction for other components would be less.

From the table above, the lowest available cost per ton reduced is \$13,906. This value represents an infeasible economic impact. Due to the extremely high and unreasonable economic impact for each of these BACT options, they are inappropriate BACT alternatives beyond the assumed baseline. Additionally, these estimates do not include the costs associated with the initial development of an LDAR program.

The control options evaluated have no significant environmental or energy impacts other than the impacts associated with contractor mobilization. Since the economic impacts for each of the options are unreasonably high, these impacts were not considered in greater detail.

e. Step 5: Select BACT and Document the Selection as BACT

Given the small quantity of emissions from these activities, the applicant proposes good housekeeping and compliance with the quarterly inspection requirements in the SPCC Plan as BACT. Further, the Texas Commission on Environmental Quality (TCEQ) has published NSR guidance for equipment leak fugitives indicating no control is necessary for fugitives below 10 TPY, which has been relied upon in other applications in Region 6 of EPA. Therefore, DEQ selects BACT as good housekeeping and compliance with the quarterly inspection requirements in the SPCC Plan.

iv. BACT Analysis for Pigging Operations**a. Step 1: Identify Available Control Technologies**

After reviewing the RBLC, there were no results found for this emission source. No additional control options were identified after reviewing air permits from similar facilities in Oklahoma and surrounding states. After reviewing typical industry practices, the only option identified was good operating and maintenance practices.

Good operating and maintenance practices involve good housekeeping, minimizing the duration and frequency of the pigging operations, and minimizing spills in accordance with an SPCC Plan.

b. Step 2: Eliminate Technically Infeasible Options

The one control option identified is technically feasible.

c. Step 3: Rank Remaining Control Options by Control Effectiveness

Only one control option was identified.

d. Step 4: Evaluate and Eliminate Control Technologies Based on Energy, Environmental, and Economic Impacts

Only one control option was identified, and it is assumed to be economically feasible without significant adverse energy or environmental impacts.

e. Step 5: Select BACT and Document the Selection as BACT

Keyera proposes good housekeeping including compliance with the quarterly inspection requirements in the SPCC Plan as BACT. DEQ selects BACT as good housekeeping and compliance with the quarterly inspection requirements in the SPCC Plan.

v. BACT Analysis for Diesel Fuel and Sump Tanks**a. Step 1: Identify Available Control Technologies**

After reviewing the RBLC, there were no results found for diesel fuel and sump tanks were installation of a fixed roof and good operation and maintenance practices. The proposed tanks will have fixed roofs. No additional control options were identified after reviewing air permits from similar facilities in Oklahoma and surrounding states. After expanding the RBLC search to include other types of facilities and reviewing typical industry practices, the following control options were identified:

Table V.10. Control Technologies for Vertical Fixed Roof Tanks

| |
|--|
| Control Technologies |
| Routing Vapor Space to a Control Device <ul style="list-style-type: none"> • Thermal Incinerator • Flare • Vapor Combustor • Refrigerated Condenser • Carbon Adsorption |
| Submerged Fill |
| Good Operating and Maintenance Practices |

Routing Vapor Space to a Control Device

Evaporative losses from tanks can be routed to a variety of control devices with varying destruction efficiencies. Combustion type controls, including flares, combustors, and incinerators, destroy VOC with auxiliary fuel injection. Typical destruction efficiencies range from 98% to 99.9%, depending on the VOC makeup. Adsorption technologies, which physically filter VOC, have capture efficiencies that range from 50% to 90%, depending on VOC composition and concentration in the emissions stream. Refrigeration condensers are used as air pollution control devices for treating emissions streams with high VOC concentrations for sources such as gasoline bulk terminals. Pressure/vacuum conservation vents reduce evaporation of tank contents when vapor space is increased or decreased due to liquids being pumped in or out of the tank. These vents are typically mounted to a flange or pipe that connects to the vapor space above the liquid level in the tank.

Submerged Fill

Submerged fill can be accomplished using the bottom loading method. A bottom-loading fill pipe is permanently attached to the bottom of the tank, significantly controlling liquid turbulence. Subsequently, much lower vapor generation occurs than during splash loading, here the tank is filled from the top of the tank.

Good Operating and Maintenance Practices

Good operating and maintenance practices involve good housekeeping and compliance with other federal regulations such as the inspection requirements in an SPCC Plan.

b. Step 2: Eliminate Technically Infeasible Options

All control options are technically feasible when considered individually. These options are further considered in the following steps of the top-down BACT analysis.

c. Step 3: Rank Remaining Control Options by Control Effectiveness

The most effective option is Routing Vapor Space to a Control Device, followed by Submerged Fill, and Good Operating and Maintenance Practices.

d. Step 4: Evaluate and Eliminate Control Technologies Based on Energy, Environmental, and Economic Impacts

Since good operating and maintenance are already required by the SPCC Inspection, Integrity Testing, and Leak Testing Program, this is considered the baseline option.

Submerged fill is assumed to be economically feasible without significant adverse energy or environmental impacts.

For the Routing Vapor Space to a Control Device option, the annualized cost of piping is \$37,180 using estimates from the *EPA Air Pollution Control Cost Manual*, which represents an infeasible economic impact since the emissions reduction would be less than 0.01 TPY assuming a 99% destruction efficiency. Due to the extremely high and unreasonable economic impact for this BACT option, it is eliminated from further consideration. Additionally, environmental and energy impacts from this option include an increase in NO_x and CO emissions, noise, and fuel consumption.

e. Step 5: Select BACT and Document the Selection as BACT

Keyera proposes use of submerged fill and good housekeeping and maintenance, including compliance with the routine inspection requirements in the SPCC Inspection, Integrity Testing, and Leak Testing Program as BACT. DEQ selects submerged fill and good housekeeping and maintenance, including compliance with the routine inspection requirements in the SPCC Inspection, Integrity Testing, and Leak Testing Program as BACT.

vi. **BACT Analysis for Reciprocating Internal Combustion Engines**

a. Step 1: Identify Available Control Technologies

Keyera will operate one stationary diesel-fired RICE (GEN-1) for the purpose of generating electric power during emergencies and one stationary diesel-fired RICE (FP-2) for the purpose of pumping water for emergency fire suppression. The stationary RICE will be subject to NSPS Subpart IIII and National Emission Standards for Hazardous Air Pollutants, 40 CFR Part 63 (NESHAP), Subpart ZZZZ⁴. These regulations require purchasing RICE certified to applicable EPA emission standards, combusting only ultra-low sulfur diesel, and various monitoring, recordkeeping, and reporting. These EPA emission standards and accompanying requirements are taken as the baseline for this BACT analysis.

Available VOC emissions control options for diesel-fired, i.e., compression ignition (CI), RICE include:

- (a) Oxidation catalyst, or, more specifically, diesel oxidation catalyst (DOC) and
- (b) Good combustion practices (GCP).

⁴ For new RICE at area sources the only requirement under NESHAP Subpart ZZZZ is to comply with NSPS Subpart IIII.

DOC utilizes a catalyst such as platinum or palladium to further oxidize the engine's exhaust, which includes hydrocarbons (HC), e.g., VOC, to carbon dioxide (CO₂) and water. Use of DOC can result in approximately 90 percent reduction in HC/VOC emissions.⁵ However, for emergency-use or intermittent-use engines, "[b]ecause these engines are typically used only a few number of hours per year...[s]uch engines rarely if ever use the [DOC] type of emission controls."⁶ Queries of the RBLC reveals no installations of DOC on emergency, diesel-fired engines⁷ DOC is nonetheless carried forward in this BACT analysis.

GCP for CI RICE for VOC control consist of minimizing startup and idling time. This is achieved in normal practice for emergency-use engines that, by design, only operate for maintenance purposes, readiness testing, and during emergency events.

b. Step 2: Eliminate Technically Infeasible Options

Both control options identified in step 1 are technically feasible.

c. Step 3: Rank Remaining Control Options by Control Effectiveness

The more effective control option from steps 1 and 2 is DOC, which can theoretically achieve approximately 90 percent reduction in VOC emissions. GCP is a part of normal practice for emergency-use engines so no additional VOC reduction can be attributed.

d. Step 4: Evaluate and Eliminate Control Technologies Based on Energy, Environmental, and Economic Impacts

The use of DOC reduces the effective power output of RICE and results in a solid waste stream. However, for the purposes of this analysis, no formal consideration of these adverse energy and environmental impacts is presented. GCP is part of normal practice for emergency-use engines so no cost is associated with that option.

In its 2010 MACT/GACT evaluation for engines, EPA concluded for emergency engines: "Because these engines are typically used only a few number of hours per year (27 hours per year per National Fire Protection Association codes), the costs of emission control are not warranted when compared to the emission reductions that would be achieved."⁸ Based on EPA's assessment and the fact that the RBLC contains no records of DOC installation on emergency-use or non-road engines, DOC is eliminated from consideration as BACT.

U.S. EPA, *Alternative Control Techniques Document: Stationary Diesel Engines*, March 5, 2010, p. 41. (https://www.epa.gov/sites/production/files/2014-02/documents/3_2010_diesel_eng_alternativecontrol.pdf)

⁶ U.S. EPA, Memorandum: *Response to Public Comments on Proposed National Emission Standards for Hazardous Air Pollutants for Existing Stationary Reciprocating Internal Combustion Engines Located at Area Sources of Hazardous Air Pollutant Emissions or Have a Site Rating Less Than or Equal to 500 Brake HP Located at Major Sources of Hazardous Air Pollutant Emissions*, August 10, 2010, p. 172-173. (EPA-HQ-OAR-2008-0708)

⁷ RBLC Basic Search queries were completed on December 22, 2016, for process types 17.110 and 17.210. Query results were filtered to only show records for VOC emissions from diesel fuel-fired engines.

⁸ Ibid.

e. Step 5: Select BACT and Document the Selection as BACT

DEQ selects the remaining control option, GCP, as BACT for the terminal’s emergency engine and its fire water pump engine. As stated above, GCP for emergency engines is normal practice, i.e., operating the engines only for maintenance purposes, readiness testing, and during emergencies. At a minimum, all engines shall be certified to meet the EPA Tier 3 emissions standards for a NO_x+NMHC emission factor of 3.0 g/hp-hr.

vii. BACT Analysis for Lab Solvent Container

a. Step 1: Identify Available Control Technologies

After reviewing the RBLC, there were no results found for this emission source at a petroleum terminal. No additional control options were identified after reviewing air permits from similar facilities in Oklahoma and surrounding states. After expanding the RBLC search to include other types of facilities, and after reviewing typical industry practices, the following control options were identified:

Table V.11. Control Technologies for Lab Solvent Tanks

| Control Technologies |
|--|
| Routing Vapor Space to a Control Device <ul style="list-style-type: none"> • Thermal Incinerator • Flare • Vapor Combustor • Refrigerated Condenser • Carbon Adsorption |
| Submerged Fill |
| Good Operating and Maintenance Practices |

Routing Vapor Space to a Control Device

Evaporative losses from tanks can be routed to a variety of control devices with varying destruction efficiencies. Combustion type controls, including flares, combustors, and incinerators, destroy VOC with auxiliary fuel injection. Typical destruction efficiencies range from 98% to 99.9%, depending on the VOC makeup. Adsorption technologies, which physically filter VOC, have capture efficiencies that range from 50% to 90%, depending on VOC composition and concentration in the emissions stream. Refrigeration condensers are used as air pollution control devices for treating emissions streams with high VOC concentrations for sources such as gasoline bulk terminals. Pressure/vacuum conservation vents reduce evaporation of tank contents when vapor space is increased or decreased due to liquids being pumped in or out of the tank. These vents are typically mounted to a flange or pipe that connects to the vapor space above the liquid level in the tank.

Submerged Fill

Submerged fill can be accomplished using the bottom loading method. A bottom-loading fill pipe is permanently attached to the bottom of the tank, significantly controlling liquid turbulence. Subsequently, much lower vapor generation occurs than during splash loading, here the tank is filled from the top of the tank.

Closed Top Design

Closed top design involves maintaining the container cover in a closed, sealed position (e.g., covered by a gasketed lid or cap) to reduce evaporative losses whenever not in use.

Good Operating and Maintenance Practices

Good operating and maintenance practices involve good housekeeping and compliance with other federal regulations such as the inspection requirements in an SPCC Plan.

b. Step 2: Eliminate Technically Infeasible Options

All control options are technically feasible when considered individually. These options are further considered in the following steps of the top-down BACT analysis.

c. Step 3: Rank Remaining Control Options by Control Effectiveness

The most effective option is Routing Vapor Space to a Control Device, followed by Submerged Fill, Closed Top Design, and Good Operating and Maintenance Practices.

d. Step 4: Evaluate and Eliminate Control Technologies Based on Energy, Environmental, and Economic Impacts

Since good operating and maintenance are already required by the SPCC Inspection, Integrity Testing, and Leak Testing Program, this is considered the baseline option.

Submerged fill and closed top design are assumed to be economically feasible without significant adverse energy or environmental impacts.

For the Routing Vapor Space to a Control Device option, the annualized cost of piping is \$31,917 using estimates from the *EPA Air Pollution Control Cost Manual*, which represents an infeasible economic impact since the emissions reduction would be less than 0.01 TPY assuming a 99% destruction efficiency. Due to the extremely high and unreasonable economic impact for this BACT option, it is eliminated from further consideration. Additionally, environmental and energy impacts from this option include an increase in NO_x and CO emissions, noise, and fuel consumption.

e. Step 5: Select BACT and Document the Selection as BACT

Keyera proposes use of submerged fill, closed top design, and good housekeeping and maintenance, including compliance with the routine inspection requirements in the SPCC Inspection, Integrity Testing, and Leak Testing Program as BACT. DEQ selects submerged fill,

closed top design, and good housekeeping and maintenance, including compliance with the routine inspection requirements in the SPCC Inspection, Integrity Testing, and Leak Testing Program as BACT.

viii. BACT Analysis for Butane Truck Unloading Operations

a. Step 1: Identify Available Control Technologies

Two RBLC entries were found for this emission source, and they were both for LAER determinations. These determinations required disconnect systems that would minimize the amount of VOC drainage during disconnects. When reviewing air permits from similar facilities in Oklahoma, some permits included a condition based on OAC 252:100-39-41(c), which requires sites to provide a means to prevent VOC drainage from the loading device when it is removed from the transport vessel. After reviewing typical industry practices, the only other option identified was good operating and maintenance practices. Good operating and maintenance practices involve good housekeeping, minimizing drainage during disconnects, and minimizing spills in accordance with an SPCC Plan.

b. Step 2: Eliminate Technically Infeasible Options

Both control options identified are technically feasible.

c. Step 3: Rank Remaining Control Options by Control Effectiveness

They dry disconnect systems are the more effective option followed by good operating practices.

d. Step 4: Evaluate and Eliminate Control Technologies Based on Energy, Environmental, and Economic Impacts

It is assumed that both options are economically feasible without significant adverse energy or environmental impacts.

e. Step 5: Select BACT and Document the Selection as BACT

Keyera proposes equipment and work practice standards consisting of the use of a disconnect system that minimizes butane releases (e.g., Todo Dry-Break system) and the implementation of good housekeeping measures, including regular inspection of all aboveground valves, piping, and appurtenances, keeping records of inspections and any identified visual leaks, corrective actions when visual leaks are identified, and records of corrective actions maintained. DEQ selects the use of a vapor-tight butane offloading and disconnect system (e.g., hoses, fittings, connectors, adapters, etc.) that minimizes butane releases and the implementation of good housekeeping measures, including requirements for contractors (i.e., transport drivers) to visually monitor for leaks or releases during butane offloading operations, terminal operators to conduct routine daily visual inspections to identify signs of leaks, performing annual hydrostatic testing of butane offloading transfer hoses to ensure hoses and connections meet industry pressure rating

specifications, installation of a gas detection system to monitor the butane offloading area, and provide and keep records of employee and contractor (i.e., transport driver) training consistent with the facility’s Butane Truck Unloading Procedure as BACT.

C. Evaluation of Existing Air Quality and Determination of Monitoring Requirements

i. Ozone (O₃) Monitoring

Pre-construction monitoring for ozone is required for any new source or modified existing source located in an unclassified or attainment area with greater than 100 tons per year of VOC emissions. Continuous ozone monitoring data must be used to establish existing air quality concentrations in the vicinity of the proposed source or modification.

The siting guidance for ozone monitors in the “Ambient Monitoring Guidelines for Prevention of Significant Deterioration”, EPA-450/4-87-007, is less prescriptive than the guidance for primary pollutants. The guidance provides that, where the NO interactions may be minimal, the travel time to expected maximum ozone concentrations may be 3 to 4 hours downwind; but “in general, the downwind distance for the maximum ozone site should not be more than 15 to 20 miles from the source because a lower wind speed (2-3 miles per hour) with less dilution would be a more critical case.” Reviewing wind roses from met stations in Cushing, Stillwater, and Oilton, wind speeds are generally greater than a minimum of 5 miles per hour with primary flow vectors (blowing to) ranging between NW and NE.

The nearest existing ozone monitoring site is the Tulsa West site, 40-037-0144 at 25 miles NE of the proposed project. The current ozone design value for Tulsa West is 0.067 ppm.

The Tulsa West monitoring site is part of the Tulsa Metropolitan Statistical Area and would be impacted by pollution from urban area sources and significant individual point sources. Ozone concentrations measured at this site should be considered conservative for the community of Cushing and the surrounding area including the crude oil tank farms. This determination is corroborated by the fact that the terrain in both areas is relatively flat, emission inventories and photochemical modeling⁹ have shown the area to be NO_x limited and there are no significant NO_x emission sources in or around Cushing. While Cushing has a large number of crude oil storage tanks and associated VOC emissions, due to the relative scarcity of NO_x emissions, increases in VOC are not expected to significantly impact ozone concentrations. Therefore, use of the monitoring data collected at the Tulsa West monitoring site is presumed to satisfy preconstruction monitoring requirements.

Table V.12. List of Nearby Oklahoma Ozone Monitors

| Site | Name | Distance | Average 4 th High 2020-2022 | Average 4 th High 2021-2023 |
|--------------------|-------------------|--------------------|---|---|
| 40-143-0174 | Tulsa South | 42 miles E | 0.064 ppm | 0.068 ppm |
| 40-037-0144 | Tulsa West | 25 miles NE | 0.065 ppm | 0.067 ppm |

⁹ Ramboll Environ US Corporation. 2015 Assessment of the Ozone Impacts Associated with New Emissions from Tinker Air Force Base in Oklahoma City.

| Site | Name | Distance | Average 4 th High 2020-2022 | Average 4 th High 2021-2023 |
|-------------|-----------|-------------|---|---|
| 40-109-0096 | Choctaw | 44 miles SW | 0.067 ppm | 0.069 ppm |
| 40-109-1037 | OKC North | 46 miles SW | 0.070 ppm | 0.071 ppm |

D. Air Quality Impacts Analysis

i. Ozone

Impacts from ozone were estimated using EPA’s Guidance on the Development of Modeled Emission Rates for Precursors (MERPs) as a Tier 1 Determination Tool for Ozone and PM_{2.5} under the PSD Permitting Program (April 30, 2024). The Tier 1 approach estimates secondary PM_{2.5} formation based on illustrative NO_x and SO₂ values and ozone formation based on illustrative NO_x and VOC values of hypothetical sources from a database on EPA’s website, Support Center for Regulatory Atmospheric Modeling (SCRAM). The SCRAM database contains modeled impacts from a hypothetical source at various locations throughout the state. EPA explored impacts from surface level (10 meter) releases and high level (90 meter) releases of precursor pollutants at emission rates of 500 TPY, 1,000 TY and 3,000 TPY.

The following equation was used for estimating ozone concentrations from NO_x and VOC that were used to evaluate potential impacts of ozone.

$$\begin{aligned}
 & \text{Project Air Quality Impact } (\mu\text{g}/\text{m}^3) \\
 & = \text{Project emission rate (TPY)} \times \left\{ \frac{\text{Modeled air quality impact from hypothetical source } (\mu\text{g}/\text{m}^3)}{\text{Modeled emission rate from hypothetical source (TPY)}} \right\}
 \end{aligned}$$

The following tables lists the SCRAM’s illustrative hypothetical single source modeled impacts for the 8-hour ozone NAAQS standard. The floating roof tanks are estimated to have release heights between 14 m and 22 m. The project is expected to have emissions of VOC and NO_x at 181.14 TPY and 2.71 TPY, respectively. Therefore, all hypothetical sources in the state were evaluated with modeled emission rates of 500 TPY at ground level (10 meter) releases.

Table V.13. 8-hr Ozone Project Precursor Impacts from NO_x

| Location | Precursor Pollutant | Modeled Emission Rate of Hypothetical Source | Release Height of Hypothetical Source | Modeled Impact of Hypothetical Source | Project Impact |
|-----------------------|-----------------------|--|---------------------------------------|---------------------------------------|----------------|
| | | TPY | m | ppb | ppb |
| Canadian County | NO _x | 500 | 10 | 0.5838 | 0.003 |
| Muskogee County | NO _x | 500 | 10 | 1.4593 | 0.008 |
| Pushmataha County | NO _x | 500 | 10 | 2.1008 | 0.011 |
| Washita County | NO _x | 500 | 10 | 1.0889 | 0.06 |
| Maximum Impact | NO_x | 500 | 10 | 2.1008 | 0.011 |

Table V.14. 8-hr Ozone Project Precursor Impacts from VOC

| Location | Precursor Pollutant | Modeled Emission Rate of Hypothetical Source | Release Height of Hypothetical Source | Modeled Impact of Hypothetical Source | Project Impact |
|-----------------------|---------------------|--|---------------------------------------|---------------------------------------|----------------|
| | | TPY | m | ppb | ppb |
| Canadian County | VOC | 500 | 10 | 0.0681 | 0.025 |
| Muskogee County | VOC | 500 | 10 | 0.1440 | 0.052 |
| Pushmataha County | VOC | 500 | 10 | 0.0165 | 0.006 |
| Washita County | VOC | 500 | 10 | 0.0359 | 0.013 |
| Maximum Impact | VOC | 500 | 10 | 0.1440 | 0.052 |

The impacts from each precursor pollutant are added together and compared directly to the 8-hr ozone significant impact level (SIL). The applicable SIL for the 8-hour ozone NAAQS is recommended by EPA as 1.0 ppb. The combined impact from each precursor from the project is calculated to be 0.063, which is less than the applicable SIL of 1.0. No expected significant air quality impact is expected as a result of this project and no further analysis will be required.

E. Evaluation of Additional Source-Related Impacts

i. Growth Impact Analysis

A growth analysis is intended to quantify the amount of new growth that is likely to occur in support of the facility and to estimate emissions resulting from that associated growth. Associated growth includes residential and commercial/industrial growth resulting from the new facility. Residential growth depends on the number of new employees and the availability of housing in the area, while associated commercial and industrial growth consists of new sources providing services to the new employees and the facility. It is estimated that the Wildhorse Terminal will employ approximately 25 new employees, but Keyera does not expect that any additional residential and commercial or industrial growth will result from these new employees since the facility is located in an area that has an available population to supply employees and the area is already commercially and industrially developed. Therefore, additional growth from the facility is expected to be minimal.

ii. Soils and Vegetation

The following discussion will review the project’s potential to impact its agricultural surroundings based on the facility’s allowable emission rates and resulting ground level concentrations of VOC.

The effects of gaseous air pollutants on vegetation may be classified into three rather broad categories: acute, chronic, and long-term. Acute effects are those that result from relatively short (less than 1 month) exposures to high concentrations of pollutants. Chronic effects occur when organisms are exposed for months or even years to certain threshold levels of pollutants. Long-term effects include abnormal changes in ecosystems and subtle physiological alterations in

organisms. Acute and chronic effects are caused by the gaseous pollutant acting directly on the organism, whereas long-term effects may be indirectly caused by secondary agents such as changes in soil pH.

VOC is regulated by the EPA as a precursor to tropospheric ozone. Elevated ground-level ozone concentrations can damage plant life and reduce crop production. Also, VOC interferes with the ability of plants to produce and store food, making them more susceptible to disease, insects, other pollutants and harsh weather. The terminal is located in an area with elevated VOC background emissions due to the vegetation and existing tank farms in Cushing. Therefore, the formation of ozone as a result of the new storage tank emissions of precursors is NO_x limited. Since there are no NO_x emissions from the facility, no significant impact on soil and vegetation is expected due to VOC emissions from the project.

iii. Visibility Impairment

The project is not expected to produce any perceptible visibility impacts in the immediate vicinity of the terminal. Given the limitation of 20% opacity of emissions, and a reasonable expectation that normal operation of the Wildhorse Terminal will result in < 20% opacity, no immediate visibility impairment is anticipated.

F. Evaluation Of Class I Area Impacts

One of the purposes of the PSD program is “to preserve, protect, and enhance the air quality in national parks, national wilderness areas, national monuments, national seashores, and other areas of special national or regional natural, recreational, scenic, or historic value.” Under the PSD provisions, Congress established a land classification scheme for these areas of the country (Class I), specifically including:

- international parks;
- national wilderness areas which exceed 5,000 acres in size;
- national memorial parks which exceed 5,000 acres in size; and
- national parks which exceed six thousand acres in size.

Class I area analyses, when requested, typically include a Class I PSD Increment Assessment for NO_x, SO₂, and PM₁₀, and an Air Quality Related Values (AQRV) assessment including a visibility analysis for increases in visibility impairing pollutants and a deposition analysis for nitrogen and sulfur deposition.

In October 2010, The Federal Land Managers AQRV Workgroup (FLAG) Phase I Report – Revised (FLAG 2010) set a threshold ratio of emissions to distance, below which an AQRV review is not required. Specifically, if $Q \text{ (tpy)} / d \text{ (km)} < 10$, no AQRV analysis is required. ‘Q’ is the combined emissions increase of sulfur dioxide (SO₂), oxides of nitrogen (NO_x), particulate matter less than 10 microns (PM₁₀), and sulfuric acid mist (H₂SO₄) in tons per year (tpy) based on 24-hour maximum allowable emissions (which are annualized) and ‘d’ is the nearest distance to a Class I area in kilometers (km).

For the modified project, the expected emissions of SO₂, NO_x, PM₁₀, and H₂SO₄ are 2.3 TPY. The closest Class I area to the Wildhorse Terminal is the Wichita Mountains at about 200 km. This project is not expected to impact any AQRVs since the ratio of Q/d is less than 10. Therefore, further analysis is not required.

SECTION VI. EMISSIONS

A. Criteria Pollutants

i. EUG 1A: External Floating Roof Tanks

VOC emissions from the external floating roof tanks were estimated using BREEZE Software’s TankESP program, which includes the calculation methodology from AP-42 (06/2020), Section 7.1, assuming the contents to be crude oil with a Reid vapor pressure (RVP) of 10, and the throughputs listed in the following table.

Table VI.1. External Floating Roof Tank Emissions (Normal Operations)

| EU ID# | Contents | Throughput (bbl/yr) | Standing Losses (TPY) | Withdrawal Losses (TPY) | Total Emissions (TPY) |
|---------------|-------------|---------------------|-----------------------|-------------------------|-----------------------|
| T-204 | Crude RVP10 | 25,518,006 | 2.82 | 2.93 | 5.75 |
| T-211 | Crude RVP10 | 25,950,514 | 2.82 | 2.98 | 5.80 |
| T-212 | Crude RVP10 | 25,158,006 | 2.82 | 2.93 | 5.75 |
| T-205 | Crude RVP10 | 35,958,727 | 3.27 | 3.51 | 6.78 |
| T-213 | Crude RVP10 | 35,958,727 | 3.27 | 3.51 | 6.78 |
| T-214 | Crude RVP10 | 35,958,727 | 3.27 | 3.51 | 6.78 |
| T-215 | Crude RVP10 | 35,958,727 | 3.27 | 3.51 | 6.78 |
| T-216 | Crude RVP10 | 35,958,727 | 3.27 | 3.51 | 6.78 |
| T-201 | Crude RVP10 | 52,537,399 | 3.81 | 4.24 | 8.05 |
| T-202 | Crude RVP10 | 52,537,399 | 3.81 | 4.24 | 8.05 |
| T-203 | Crude RVP10 | 52,537,399 | 3.81 | 4.24 | 8.05 |
| T-206 | Crude RVP10 | 52,537,399 | 3.81 | 4.24 | 8.05 |
| Totals | | | 40.05 | 43.35 | 83.40 |

ii. EUG 1B: Internal Floating Roof Tanks

VOC emissions from the internal floating roof tank were estimated using BREEZE Software’s TankESP program, which includes the calculation methodology from AP-42 (06/2020), Section 7.1, assuming the contents to be crude oil with an RVP of 10, and the throughput listed in the following table.

Table VI.2. Internal Floating Roof Tank Emissions (Normal Operations)

| EU ID# | Contents | Throughput (bbl/yr) | Standing Losses (TPY) | Withdrawal Losses (TPY) | Total Emissions (TPY) |
|--------|-------------|---------------------|-----------------------|-------------------------|-----------------------|
| T-221 | Crude RVP10 | 2,130,018 | 1.04 | 0.69 | 1.73 |

iii. EUG 1C: Fuel Storage Tanks

VOC emissions from the fuel storage tanks were estimated using BREEZE Software’s TankESP program, which includes the calculation methodology from AP-42 (06/2020), Section 7.1, assuming the contents to be diesel (No. 2 Fuel Oil), and the throughputs listed in the following table. AST-1 is a non-cylindrical shaped vessel.

Table VI.3. Fuel Storage Tank Emissions (Normal Operations)

| EU ID# | Contents | Throughput (gal/yr) | Standing Losses (TPY) | Withdrawal Losses (TPY) | Total Emissions (TPY) |
|---------------|----------|---------------------|-----------------------|-------------------------|-----------------------|
| AST-1 | Diesel | 26,856 | <0.01 | <0.01 | <0.01 |
| AST-2 | Diesel | 100,524 | <0.01 | <0.01 | <0.01 |
| AST-3 | Diesel | 3,228 | <0.01 | <0.01 | <0.01 |
| Totals | | | <0.01 | <0.01 | <0.01 |

iv. EUG 1D: Butane Bullet Tanks

The six (6) 120,000-gallon butane bullet tanks are pressurized vessels, and the system is designed to prevent releases of emissions to the atmosphere; therefore, negligible emissions are expected from these tanks during normal operation.

v. EUG 2: Roof Landings

Landing losses from the floating roof tanks were estimated using BREEZE Software’s TankESP program, which includes the calculation methodology from AP-42 (06/2020), Section 7.1. AP-42 (06/2020), Section 7.1 states that total losses from floating tanks during a roof landing is the sum of the standing idle losses and the filling losses, and are calculated from Equation 3-1 as follows:

$$L_{TL} = L_{SL} + L_{FL}$$

Where:

- L_{TL} = total losses during roof landing, lb per landing episode,
- L_{SL} = standing idle losses during roof landing, lb per landing episode, and
- L_{FL} = filling losses during roof landing, lb per landing episode.

Each of the floating roof tanks are designed as drain-dry floating roof tanks. During normal operation, a floating roof is in contact with the liquid inside the tank, reducing evaporative losses. However, when the tank is emptied to the point that the roof lands on its deck legs, a vapor space

is created. After the roof is landed, evaporative losses occur during idle standing and subsequent filling.

AP-42 (06/2020), Section 7.1 states that when a drain-dry tank has been emptied, the only stock liquid available inside the tank is a thin layer that lings to the surface of the tank interior, as the slope of the tank bottom prevents a significant amount of stock liquid from remaining in the tank which reduces the evaporative losses compared to that of a tank with a liquid heel. Due to the limited amount of liquid clinging to the interior of the tank, there would be no liquid to replenish vapors once the clingage layer has evaporated. Therefore, standing idle losses due to clingage is a one-time event rather than a daily event, involving only evaporation of the clingage layer.

Standing idle losses (clingage losses from drain-dry tanks) for each roof landing event were calculated based on Equation 3-11 as follows:

$$L_C = 0.042C_S W_l (Area)$$

Where:

- L_C = clingage loss from the drain-dry tank, lb,
- 0.042 = conversion factor, gal/bbl,
- C_S = clingage factor, bbl/1,000 ft²,
- W_l = density of the liquid, lb/gal, and
- $Area$ = area of the tank bottom, ft².

AP-42 (06/2020), Section 7.1 lists clingage factors, C_S , in Table 7.1-10; however, the clingage factors listed are representative of the vertical shell of the tank, which is wiped by the rim seal each time the tank is emptied. The bottom of the tank is more nearly horizontal and is not wiped by a rim seal, and thus the clingage factors for a vertical shell would not be directly applicable to the tank bottom. AP-42 (06/2020), Section 7.1 suggests that the gunite-lined factors from Table 7.1-10 should be used to represent a sludge-lined tank bottom. Table 7.1-10 lists a clingage factor, C_S , of 0.60 for crude oil.

AP-42 (06/2020), Section 7.1 adds that an upper limit should be applied to drain-dry tanks that is equal to the filling loss for an internal or domed external floating roof tank with a liquid heel, and shall be limited to Equation 3-15 as follows:

$$L_{SL} \leq 0.60 \frac{P_{VA} V_V}{RT_V} M_V$$

Where:

- L_{SL} = annual breathing loss from standing idle during roof landing, lb/yr
- P_{VA} = true vapor pressure of the liquid inside the tank, psia
- V_V = volume of the vapor space, ft³,
- R = ideal gas constant, 10.731 psia-ft³ / lb-mol-°R
- T_V = average temperature of the vapor and liquid below the floating roof, °R (= T_{AA})

- T_{AA} = average daily ambient temperature, °R, and
- M_V = stock vapor molecular weight, lb/lb-mol

Filling losses are generally calculated based on Equation 3-18, as follows:

$$L_{FL} = \left(\frac{P_{VA}V_V}{RT_V} \right) M_V (C_{sf}S)$$

Where:

- L_{FL} = filling loss during roof landing, lb,
- P_{VA} = true vapor pressure of the liquid within the tank, psia,
- V_V = volume of the vapor space, ft³,
- R = ideal gas constant, 10.731 psia-ft³/(lb-mol-°R),
- T_V = average temperature of the vapor below the floating roof, °R,
- M_V = stock vapor molecular weight, lb/lb-mol,
- C_{sf} = filling saturation correction factor for wind, dimensionless, and
- S = filling saturation factor, dimensionless.

However, AP-42 (06/2020), Section 7.1 states the “arrival” component of filling losses for drain-dry tanks is completely covered by the “clingage” loss. Once this initial loss occurs, there is no remaining liquid inside the tank. Therefore, any vapors remaining the in the tank prior to introducing the incoming liquid would have already been accounted for as standing idle loss and the filling saturation correction factor for wind, C_{sf} , is taken as 1.0 for filling losses for drain-dry tanks. AP-42 (06/2020), Section 7.1 also states a drain-dry tank would be most similar to a tank that was cleaned before filling because a cleaned tank also lacks “arrival” losses. Therefore, a factor of 0.15 may be applied as the filling saturation factor, S , for drain-dry tanks regardless of the stored liquid. The following table summarizes the estimated roof landing losses for each roof landing event for each tank.

Table VI.4. Roof Landing Emissions

| EU ID# | L_C (lb/event) | L_{FL} (lb/event) | Total (tons) |
|--------|---------------------|------------------------|-----------------|
| T-204 | 4,303.53 | 2,782.91 | 3.54 |
| T-211 | 4,303.53 | 2,782.91 | 3.54 |
| T-212 | 4,303.53 | 2,782.91 | 3.54 |
| T-205 | 5,963.25 | 3,856.19 | 4.91 |
| T-213 | 5,963.25 | 3,856.19 | 4.91 |
| T-214 | 5,963.25 | 3,856.19 | 4.91 |
| T-215 | 5,963.25 | 3,856.19 | 4.91 |
| T-216 | 5,963.25 | 3,856.19 | 4.91 |
| T-201 | 8,712.59 | 5,634.08 | 7.17 |
| T-202 | 8,712.59 | 5,634.08 | 7.17 |
| T-203 | 8,712.59 | 5,634.08 | 7.17 |
| T-206 | 8,712.59 | 5,634.08 | 7.17 |
| T-221 | 557.74 | 360.67 | 0.46 |

| EU ID# | <i>L_C</i> (lb/event) | <i>L_{FL}</i> (lb/event) | Total (tons) |
|------------------------------|------------------------------------|-------------------------------------|-----------------|
| Totals ⁽¹⁾ | 78,134.94 | 50,526.67 | 64.31 |

⁽¹⁾ Assumes each tank is landed once during the month of July.

vi. EUG 3: Tank Cleanings

Each tank is periodically cleaned. Tank cleaning emissions result from vapors that are expelled from the tank during forced ventilation regardless of whether any tank cleaning is actually taking place. AP-42 (06/2020), Section 7.1 states that cleaning emissions exclude normal pump out emissions, standing idle emissions, and tank refilling are excluded from tank cleaning as the emissions from those operations are already accounted for through either routine or tank roof landing operations. Therefore, cleaning emissions are limited to forced ventilation vapor space purge and continued forced ventilation and are calculated based on Equation 4-1, as follows:

$$L_{FV} = L_P + L_{CV}$$

Where:

- L_{FV}* = total emissions due to forced ventilation during a tank cleaning event, lb,
- L_P* = vapor space purge emissions associated with the first air change following commencement of forced ventilation, lb, and
- L_{CV}* = emissions from continued forced ventilation following the first air change, lb.

Initial vapor space purge emissions occur at the end of the standing idle period that immediately follows normal pump out and are estimated based on Equation 4-2, as follows:

$$L_P = \left(\frac{P_{VA} V_V}{RT_V} \right) M_V S$$

Where:

- L_P* = vapor space purge emissions associated with the first air change following commencement of forced ventilation, lb,
- P_{VA}* = true vapor pressure of the exposed volatile material in the tank, psia,
- V_V* = volume of the vapor space, ft³,
- R* = ideal gas constant, 10.731 psia-ft³/(lb-mol-°R),
- T_V* = average temperature of the vapor space °R,
- M_V* = stock vapor molecular weight, lb/lb-mol, and
- S* = saturation factor evaluated as a function of the tank type and heel condition, dimensionless.

For drain-dry floating roof tanks, AP-42 (06/2020), Section 7.1 states that evaporation of the clingage is already accounted for in the estimation of the floating roof landing losses, and therefore the saturation factor, *S*, should be set to zero. This results in zero vapor space purge emissions from cleaning events. However, the applicant conservatively assumed a saturation factor of 0.5.

Vapor space purge emissions from the floating roof tanks were estimated using BREEZE Software’s TankESP program, which includes the calculation methodology from AP-42 (06/2020), Section 7.1.

Continued forced ventilation emissions, L_{CV} (e.g., sludge removal losses, L_{SR}) from the floating roof tanks were calculated based on Equation 25, the air driven loss method, of the American Petroleum Institute’s (API) Technical Report (TR) 2568, “Evaporative Loss from the Cleaning of Storage Tanks” (November 2007), as follows:

$$L_{SR} = 0.57n_{SR}DP^*M_v$$

Where:

- L_{SR} = sludge removal loss per cleaning, lb,
- n_{SR} = time for sludge removal, days,
- D = tank diameter, ft,
- M_v = vapor molecular weight, lb/lb-mol, and
- P^* = vapor pressure function based on API TR 2568, Equation 26, dimensionless.

$$P^* = \frac{P/P_a}{(1 + (1 - P/P_a)^{1/2})^2}$$

Where:

- P_a = atmospheric pressure at the tank location, psia, and
- P = true vapor pressure of the exposed volatile material within the tank, psia.

The API Technical Report 2568 conservatively assumes the entire tank bottom is covered in sludge for the entire cleaning event. The API Technical Report 2568 suggests that the sludge is less volatile than the liquid being stored; therefore, the true vapor pressure of Midcontinent Crude Oil (RVP 5) was assumed for this calculation. A sludge removal duration of eight (8) days was assumed. The following table summarizes the estimated tank cleaning losses for each cleaning event for each tank.

Table VI.5. Tank Cleaning Emissions

| EU ID# | L _P (lb/event) | L _{SR} (lb/event) | Total (tons) |
|--------|------------------------------|-------------------------------|-----------------|
| T-204 | 3,891.58 | 3,693.70 | 3.79 |
| T-211 | 3,891.58 | 3,693.70 | 3.79 |
| T-212 | 3,891.58 | 3,693.70 | 3.79 |
| T-205 | 5,392.42 | 4,348.02 | 4.87 |
| T-213 | 5,392.42 | 4,348.02 | 4.87 |
| T-214 | 5,392.42 | 4,348.02 | 4.87 |
| T-215 | 5,392.42 | 4,348.02 | 4.87 |
| T-216 | 5,392.42 | 4,348.02 | 4.87 |

| EU ID# | LP (lb/event) | LSR (lb/event) | Total (tons) |
|------------------------------|------------------|-------------------|-----------------|
| T-201 | 7,878.59 | 5,255.61 | 6.57 |
| T-202 | 7,878.59 | 5,255.61 | 6.57 |
| T-203 | 7,878.59 | 5,255.61 | 6.57 |
| T-206 | 7,878.59 | 5,255.61 | 6.57 |
| T-221 | 504.35 | 1,329.73 | 0.92 |
| Totals ⁽¹⁾ | 31,514.36 | 21,022.44 | 26.28 |

⁽¹⁾ Based on the sum of the four (4) highest emitting tanks being cleaned per year.

vii. EUG 4: Fugitive Equipment Leaks

Fugitive VOC emissions from piping components were calculated using emission factors for light oil service at petroleum marketing terminals in EPA’s “Protocol for Equipment Leak Emission Estimates” (EPA-453/R-95-017) and an estimated number of components.

Table VI.6. Fugitive Equipment Leak Emissions

| Component | Component Count | Emission Factor (lb/hr/comp) | Emissions | |
|---------------|-----------------|---------------------------------|-------------|-------------|
| | | | (lb/hr) | (TPY) |
| Valves | 1,000 | 9.47E-05 | 0.09 | 0.41 |
| Flanges | 3,000 | 1.76E-05 | 0.05 | 0.23 |
| Other | 40 | 2.86E-04 | 0.01 | 0.05 |
| Pumps | 40 | 1.19E-03 | 0.05 | 0.21 |
| Totals | 4,080 | -- | 0.20 | 0.90 |

viii. EUG 5: Limited-Use Engines

The limited-use engines are both certified to meet the applicable emissions standards required by 40 CFR Part 60, Subpart IIII. Emissions from the limited-use diesel engine are based on an assumed runtime of 500 hours per year. Emission factors are taken from EPA’s Tier 3 standards of Appendix I to 40 CFR Part 1039 and Table 4 of NSPS Subpart IIII for fire pump engines, which are listed in the table below. Both engines are certified to meet the applicable emissions standards required

Table VI.7. Applicable Engine Standards ⁽¹⁾

| Requirement | Maximum Engine Power | Starting Model Year | NMHC + NO _x in g/kW-hr (g/hp-hr) | CO in g/kW-hr (g/hp-hr) | PM in g/kW-hr (g/hp-hr) |
|--|----------------------|---------------------|---|-------------------------|-------------------------|
| EPA Tier III Standards from Appendix I of 40 CFR Part 1039 | 130≤kW≤560 | 2006 | 4.0 | 3.5 | 0.20 |

| Requirement | Maximum Engine Power | Starting Model Year | NMHC + NO _x in g/kW-hr (g/hp-hr) | CO in g/kW-hr (g/hp-hr) | PM in g/kW-hr (g/hp-hr) |
|---|-------------------------|---------------------|---|-------------------------|-------------------------|
| Table 4 of 40 CFR Part 60, Subpart IIII | 450≤kW≤560 (600≤HP≤750) | 2009 | 4.0 (3.0) | 3.5 (2.6) | 0.20 (1.5) |

⁽¹⁾ To convert the emission factors from g/kW-hr to g/hp-hr, divide the g/kW-hr emission factor by 1.34.

Table VI.8. Limited-Use Engine Emissions

| Unit ID | Rating (HP) | NO _x ⁽¹⁾ (TPY) | CO (TPY) | VOC ⁽¹⁾ (TPY) | PM (TPY) |
|--------------|-------------|--------------------------------------|-------------|--------------------------|-------------|
| GEN-1 | 620 | 1.03 | 0.89 | 1.03 | 0.05 |
| FP-2 | 687 | 1.14 | 0.98 | 1.14 | 0.06 |
| Total | --- | 2.17 | 1.87 | 2.17 | 0.11 |

⁽¹⁾ Emissions based on Emission limitation of NMHC + NO_x.

ix. EUG 6: Butane Offloading Skids

VOC emissions from the butane offloading skid were calculated based on the hose coupler dimensions, the density of butane, 15,000 decoupling events per year, and assuming 100% of the evaporative losses are butane.

Table VI.9. Butane Offloading Skid Emissions from Hose Decoupling

| Hose Coupler Diam. (in) | Hose Coupler Length (in) | Hose Coupler Vol. (in ³) | Hose Coupler Vol. (gal) | Butane Density (lb/gal) | Mass of Butane Emitted (lb/event) | No. of Events Per Year | Annual Emission Rate (TPY) |
|-------------------------|--------------------------|--------------------------------------|-------------------------|-------------------------|-----------------------------------|------------------------|----------------------------|
| 1.5 | 8 | 14.14 | 0.06 | 5.06 | 0.31 | 15,000 | 2.32 |

x. EUG 7: Insignificant/Trivial Activities

VOC emissions from the pig traps were estimated from AP-42 (06/2020), Section 7.1, Equation 3-11 for clingage losses, as shown below. The entire inner surface area of the aboveground segment of the pig trap is assumed to cause evaporative losses of residual crude oil. VOC evaporative losses were estimated to be 100% of the calculated clingage loss. Properties from Gasoline (RVP 10) were assumed.

$$L_c = 0.042C_sW_l(Area)$$

Where:

- L_c = clingage loss from each event, lb,
- 0.042 = conversion factor, gal/bbl,
- C_s = clingage factor, bbl/1,000 ft²,
- W_l = density of the liquid, lb/gal, and
- $Area$ = Surface area of the pipe, ft².

Table VI.10. Pig Trap Emissions

| Pig Trap ID | P-1 to P-8 |
|--|----------------------|
| Pipe Diameter, in | 24 |
| Pipe Length, ft | 40 |
| Surface Area, ft ² | 251 |
| Density, lb/gal | 7.1 ⁽¹⁾ |
| Clingage factor, bbl/1,000 ft ² | 0.006 ⁽²⁾ |
| Emissions, lb/event | 0.45 |
| Event per year | 50 |
| VOC Emissions, TPY | 0.01 |

⁽¹⁾ From properties of Gasoline (RVP 10).

⁽²⁾ From AP-42 (06/2020), Table 7.1-10.

VOC emissions from the 4,000-gallon sump tank (T-S1), the 500-gallon sump tank (T-S2), the 500-gallon lab solvent container (T-L1), and 700-gallon solvent tank (T-L2) were estimated using BREEZE Software’s TankESP program, which includes the calculation methodology from AP-42 (06/2020), Section 7.1, assuming the contents and the throughputs listed in the following table.

Table VI.11. Sump Tank and Ancillary Tank Emissions

| EU ID# | Contents | Throughput (bbl/yr) | Standing Losses ⁽¹⁾ (TPY) | Working Losses (TPY) | Total Emissions (TPY) |
|---------------|--------------------------------|----------------------------|---|-----------------------------|------------------------------|
| T-S1 | Diesel | 208,000 | --- | <0.01 | <0.01 |
| T-S2 | Diesel | 26,000 | <0.01 | <0.01 | <0.01 |
| T-L1 | Mineral Spirits ⁽²⁾ | 6,000 | <0.01 | <0.01 | 0.01 |
| T-L2 | Mineral Spirits ⁽²⁾ | 8,400 | <0.01 | <0.01 | <0.01 |
| Total | | | | | 0.02 |

⁽¹⁾ There are no standing losses associated with underground storage tanks.

⁽²⁾ Properties from jet naphtha were used in the calculation as a conservative surrogate for mineral spirits.

xi. Facility-Wide Emissions

Table VI.12. Facility-Wide Emissions

| EUG | Description | NO_x (TPY) | CO (TPY) | VOC (TPY) | PM₁₀ (TPY) |
|------------|--|-----------------------------|-----------------|------------------|------------------------------|
| 1A | EFR Tanks – Normal Operations | -- | -- | 83.40 | -- |
| 1B | IFR Tanks – Normal Operations | -- | -- | 1.73 | -- |
| 1C | Fuel Storage Tanks – Normal Operations | -- | -- | <0.01 | -- |
| 1D | Butane Pressurized Bullet Tanks | -- | -- | <0.01 | -- |
| 2 | Roof Landings | -- | -- | 64.31 | -- |
| 3 | Tank Cleanings | -- | -- | 26.28 | -- |
| 4 | Fugitive Equipment Leaks | -- | -- | 0.90 | -- |
| 5 | Limited-Use Engines | 2.17 | 1.87 | 2.17 | 0.11 |

| EUG | Description | NO _x (TPY) | CO (TPY) | VOC (TPY) | PM ₁₀ (TPY) |
|---------------|----------------------------------|--------------------------|-------------|---------------|---------------------------|
| 6 | Butane Offloading Skid | -- | -- | 2.32 | -- |
| 7 | Insignificant/Trivial Activities | -- | -- | 0.03 | -- |
| Totals | | 2.17 | 1.87 | 181.14 | 0.11 |

B. Hazardous Air Pollutant (HAP) Emissions

Additional activities on-site include tank roof landings, tank cleanings, fuel storage tanks, sump tanks, solvent storage tanks, pig launchers and receivers, and fugitive equipment leaks.

HAP emissions from storage tanks, tank roof landings, tank cleanings, pig launchers and receivers, and fugitive equipment leaks were calculated based on the methodologies stated above and assumed the default speciation of crude oil in EPA TANKS 4.0.9d as shown in the following table.

Table VI.13. EPA TANKS 4.0.9d Crude Default Speciation

| Pollutant | Liquid Weight Fraction |
|------------------------|------------------------|
| Benzene | 0.0060 |
| Toluene | 0.0100 |
| Ethylbenzene | 0.0040 |
| Xylenes | 0.0140 |
| n-Hexanes | 0.0040 |
| 2,2,4-Trimethylpentane | 0.0010 |
| Cumene | 0.0010 |

HAP emissions from the limited-use engines are based on factors from AP-42 (10/96), Table 3.4-3.

Table VI.14. Facility-Wide HAP Emissions

| EUG | B (TPY) | T (TPY) | E (TPY) | X (TPY) | n-H (TPY) | 2,2,4-T (TPY) | C (TPY) | F (TPY) | Total (TPY) |
|---------------|-------------|-------------|-------------|-------------|--------------|------------------|-------------|-----------------|----------------|
| 1A | 0.44 | 0.52 | 0.19 | 0.65 | 0.37 | 0.06 | 0.05 | <0.01 | 2.27 |
| 1B | <0.01 | <0.01 | <0.01 | 0.01 | <0.01 | <0.01 | <0.01 | <0.01 | 0.04 |
| 1C | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| 2 | 0.28 | 0.13 | 0.02 | 0.05 | 0.30 | 0.02 | <0.01 | <0.01 | 0.80 |
| 3 | 0.11 | 0.05 | <0.01 | 0.02 | 0.12 | <0.01 | <0.01 | <0.01 | 0.33 |
| 4 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | 0.01 |
| 5 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| 6 | <0.01 | <0.01 | <0.01 | <0.01 | 0.01 | <0.01 | <0.01 | <0.01 | 0.03 |
| 7 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| TOTALS | 0.83 | 0.71 | 0.20 | 0.73 | 0.80 | 0.08 | 0.05 | <0.01 | 3.48 |

Note: B = Benzene; T = Toluene; E = Ethylbenzene; X = Xylenes; n-H = n-Hexane; C = Cumene; 2,2,4-T = 2,2,4-Trimethylpentane; and F = Formaldehyde.

Based on the potential to emit of the facility shown in the previous table, the facility is a minor source of HAP emissions.

C. Greenhouse Gas (GHG) Emissions

Based on EPA default speciations, there is typically less than 1% of methane (CH₄) and carbon dioxide (CO₂) in stabilized crude oil stocks (e.g., Sample IDs 1208 and 1210 in EPA’s SPECIATE 4.3). If each of these GHGs were conservatively assumed to represent 5% of the emissions from crude oil evaporative losses, the emissions would be approximately 220 TPY CO_{2e}, based on the global warming potential factors from Table A-1 of 40 CFR Part 98, Subpart A. Using 40 CFR Part 98, Subpart C factors, the engines have the potential to generate an additional 298 TPY CO_{2e}.

D. Hydrogen Sulfide (H₂S) Emissions

Emissions of H₂S were estimated using a mass emission ratio based on the methodologies provided in “Using K factors to Estimate Quantities of Individual Vapor Species Emitted During the Storage and Transfer of Hydrocarbon Liquids” by Jeffery L. Meling, et al. and the information presented in the following table.

Table VI.15. Crude Oil Parameters

| Parameter | Value |
|--|-------|
| H ₂ S Concentration ⁽¹⁾ (ppmw) | 135 |
| H ₂ S Molecular Weight (lb/lb-mol) | 34.08 |
| Vapor Molecular Weight (lb/lb-mol) | 50.0 |
| Liquid Molecular Weight (lb/lb-mol) | 207.0 |
| True Vapor Pressure (psia) | 10.96 |
| K Factor ⁽²⁾ | 19 |

⁽¹⁾ H₂S ppmw based on concentration typically found in crude oils with 5 wt% sulfur content.

⁽²⁾ K factor obtained from the nomograph for H₂S in crude oil and an ambient temperature of 60°F.

Emission estimates for H₂S are provided in the following table.

Table VI.16. H₂S Emissions

| Emissions Source | VOC (lb/24-hr) | H ₂ S (ppmw) | H ₂ S (lb/hr) |
|---|-----------------|-------------------------|--------------------------|
| EFR Standing Losses | 219.45 | 14,243 ⁽⁴⁾ | 1.30E-01 |
| EFR Withdrawal Losses | 237.53 | 135 ⁽⁵⁾ | 1.34E-03 |
| EFR Landing Refill Event ⁽¹⁾ | 8,712.59 | 14,243 ⁽⁴⁾ | 5.17E+00 |
| EFR Cleaning Purge Event ⁽²⁾ | 984.82 | 14,243 ⁽⁴⁾ | 5.84E-01 |
| EFR Maximum Emissions ⁽³⁾ | 9,169.58 | --- | 5.3E+00 |
| IFR Standing Losses | 5.70 | 14,243 ⁽⁴⁾ | 3.38E-03 |
| IFR Withdrawal Losses | 3.78 | 135 ⁽⁵⁾ | 2.13E-05 |
| IFR Landing Refill Event ⁽¹⁾ | 557.74 | 14,243 ⁽⁴⁾ | 3.31E-01 |

| Emissions Source | VOC (lb/24-hr) | H ₂ S (ppmw) | H ₂ S (lb/hr) |
|---|-------------------|----------------------------|-----------------------------|
| IFR Cleaning Purge Event ⁽²⁾ | 166.22 | 14,243 ⁽⁴⁾ | 9.86E-02 |
| IFR Maximum Emissions ⁽³⁾ | 567.22 | --- | 0.33E+00 |
| Maximum Emissions ⁽³⁾ | | --- | 5.3E+00 |

- (1) Worst-case landing emissions assume one tank is landed in a 24-hour period.
- (2) Worst-case cleaning emissions assume one tank is cleaned in a 24-hour period.
- (3) Maximum emissions assume that landing and cleaning emissions will not occur concurrently.
- (4) Involves evaporation from standing liquid utilizing the weight fraction of H₂S in the crude vapor (calculated using K factors).
- (5) Involves complete evaporation of the liquid layer utilizing the weight fraction of H₂S in the crude liquid.

SECTION VII. OKLAHOMA AIR POLLUTION CONTROL RULES

OAC 252:100-1 (General Provisions) [Applicable]
 Subchapter 1 includes definitions, but there are no regulatory requirements.

OAC 252:100-2 (Incorporation by Reference) [Applicable]
 This subchapter incorporates by reference applicable provisions of Title 40 of the Code of Federal Regulations. These requirements are addressed in the “Federal Regulations” section.

OAC 252:100-3 (Air Quality Standards and Increments) [Applicable]
 Subchapter 3 enumerates the primary and secondary ambient air quality standards and the PSD increments. The primary standards are enumerated in Appendix E and the secondary standards are enumerated in Appendix F of the Air Pollution Control Rules (OAC 252:100). NAAQs are established by the EPA. The actual ambient air concentrations of criteria pollutants are monitored within the State of Oklahoma by the DEQ Air Quality Division. At this time, all of Oklahoma is in "attainment" of these standards.

OAC 252:100-5 (Registration, Emissions Inventory, and Annual Operating Fees) [Applicable]
 Subchapter 5 requires sources of air contaminants to register with Air Quality, file emission inventories annually, and pay annual operating fees based upon total annual emissions of regulated pollutants. The owner/operator will be required to submit emissions inventories and pay the appropriate fees.

OAC 252:100-8 (Permits for Part 70 Sources) [Applicable]
Part 5 includes the general administrative requirements for Part 70 permits. Any planned changes in the operation of the facility which result in emissions not authorized in the permit and which exceed the “Insignificant Activities” or “Trivial Activities” thresholds require prior notification to AQD and may require a permit modification or construction permit. Insignificant activities mean individual emission units that are either listed in Appendix I (OAC 252:100) or whose actual calendar year emissions do not exceed the following limits.

- 5 TPY of any one criteria pollutant
- 2 TPY of any one HAP or 5 TPY of multiple HAPs or 20% of any threshold less than 10 TPY for a single HAP that the EPA may establish by rule

Emission limitations and operational requirements necessary to assure compliance with all applicable requirements for all sources are developed from the permit application and the applicable requirements.

Part 7 incorporates the Prevention of Significant Deterioration requirements that apply to the construction of any new major stationary source or any project that is a major modification at an existing major stationary source in an area designated as attainment or unclassifiable. Construction of the facility is subject to this part. Therefore, a BACT analysis and air quality impacts analysis (see Section V of this Memorandum) are required.

Part 9 incorporates requirements that apply to the construction of any new major stationary source or major modification which would locate in or affect a nonattainment area located in Oklahoma. Currently, all of Oklahoma is in Attainment. Therefore, this part does not apply.

OAC 252:100-9 (Excess Emissions Reporting Requirements) [Applicable]
Except as provided in OAC 252:100-9-7(a)(1), the owner or operator of a source of excess emissions shall notify the Director as soon as possible but no later than 4:30 p.m. the following working day of the first occurrence of excess emissions in each excess emission event. No later than thirty (30) calendar days after the start of any excess emission event, the owner or operator of an air contaminant source from which excess emissions have occurred shall submit a report for each excess emission event describing the extent of the event and the actions taken by the owner or operator of the facility in response to this event. Request for mitigation, as described in OAC 252:100-9-8, shall be included in the excess emission event report. Additional reporting may be required in the case of ongoing emission events and in the case of excess emissions reporting required by 40 CFR Parts 60, 61, or 63.

OAC 252:100-13 (Open Burning) [Applicable]
Open burning of refuse and other combustible material is prohibited except as authorized in the specific examples and under the conditions listed in this subchapter.

OAC 252:100-19 (Particulate Matter) [Applicable]
Section 19-4 regulates emissions of PM from new and existing fuel-burning equipment, with emission limits based on maximum design heat input rating. Fuel-burning equipment is defined in OAC 252:100-19 as any internal combustion engine or gas turbine, or other combustion device used to convert the combustion of fuel into usable energy. Thus, the engines are subject to the requirements of this section. Appendix C specifies a PM emission limitation of 0.60 lbs/MMBTU for all equipment at this facility with a heat input rating of 10 MMBUTH or less.

Based on the emission factors derived from the EPA's Tier 3 PM emission standards and the applicable PM emission standards of Table 4 of 40 CFR Part 60, Subpart IIII, the engines will be in compliance.

Table VII.1. Appendix C Emission Limitations

| Unit ID | Maximum Heat Input (MMBTUH) | Emissions (lb/MMBTU) | |
|---------|-----------------------------|----------------------|---------------------|
| | | Appendix C | Potential |
| GEN-1 | 4.85 | 0.60 | 0.04 ⁽¹⁾ |
| FP-2 | 5.34 | 0.60 | 0.04 ⁽²⁾ |

⁽¹⁾ Based on EPA’s Tier 3 PM emission standards from Appendix I of 40 CFR Part 1039.

⁽²⁾ Based on PM emission standards from Table 4 of 40 CFR Part 60, Subpart IIII.

Section 19-12 limits emissions of particulate matter from industrial processes and direct-fired fuel-burning equipment based on their process weight rates. Since there are no significant particulate emissions from the nonfuel-burning processes at the facility compliance with the standard is assured without any special monitoring provisions.

OAC 252:100-25 (Visible Emissions and Particulates) [Applicable]
 No discharge of greater than 20% opacity is allowed except for short-term occurrences that consist of not more than one six-minute period in any consecutive 60 minutes, not to exceed three such periods in any consecutive 24 hours. In no case shall the average of any six-minute period exceed 60% opacity. The tanks normally do not have significant opacity emissions. The fuel-burning equipment are not expected to exceed the opacity requirements during normal operations. Since there are no significant fuel-burning or PM producing activities, compliance is assured.

OAC 252:100-29 (Fugitive Dust) [Applicable]
 Subchapter 29 prohibits the handling, transportation, or disposition of any substance likely to become airborne or windborne without taking “reasonable precautions” to minimize emissions of fugitive dust. No person shall cause or permit the discharge of any visible fugitive dust emissions beyond the property line on which the emissions originate in such a manner as to damage or to interfere with the use of adjacent properties, or cause air quality standards to be exceeded, or to interfere with the maintenance of air quality standards. Under normal operating conditions, this facility will not cause a problem in this area; therefore, it is not necessary to require any additional specific precautions to be taken.

OAC 252:100-31 (Sulfur Compounds) [Applicable]
Part 2, Section 31-7 limits the ambient air concentration of hydrogen sulfide (H₂S) emissions from any facility to 0.2 ppm at standard conditions (24-hour average), which is equivalent to 283 μg/m³. Fuel-burning equipment fired with commercial propane or diesel will not have the potential to exceed the H₂S ambient air concentration limit. The majority of the crude stored at the tank farm is expected to be of the “sweet” variety (i.e., negligible-to-very low sulfur content, < 0.5%), but sour crude (sulfur content < 5.0 wt.%) may occasionally be stored. Sour crude < 5.0 wt.% sulfur typically contains < 135 parts per million by weight (ppmw) H₂S on average. Screen modeling using AERSCREEN (version 15181) was previously submitted for the initial PSD construction permit application to demonstrate compliance with the ambient standard. AERSCREEN estimates the worst-case 1-hr average concentrations based on meteorological data, terrain, and building downwash. AERSCREEN automatically provides impacts for other averaging periods (3-hr, 8-hr, 24-hr, and annual) using worst-case scaling ratios or averaging time factors; however, for area sources, all other averaging periods are equal to the 1-hour average concentration.

In the initial submitted modeling, the entire facility was modeled as a circular area source representing a single EFR tank during a cleaning event in July to represent the worst-case emissions scenario. The formulation used to address plume meander has not been implemented for area sources and may cause overestimated concentration prediction under very light wind conditions (i.e., wind speeds less than 1.0 m/s). Therefore, a minimum wind speed of 1.0 m/s was utilized rather than the default minimum wind speed of 0.5 m/s. AERSCREEN is a single source model; therefore, impacts are directly related to emission rates. The modeling was conducted with an emission rate of 1.0 lb/hr, resulting in a maximum modeled 24-hr average concentration of 51.99 $\mu\text{g}/\text{m}^3$ per 1 lb/hr of emissions.

Additional modeling was previously submitted for the inclusion of the IFR tank under Permit No. 2016-1066-C (M-1) PSD. The IFR tank was modeled as a pseudo point source using AERSCREEN (version 16216) with an emission rate of 1.0 lb/hr, resulting in a maximum modeled 24-hr average concentration of 558.7 $\mu\text{g}/\text{m}^3$ per 1 lb/hr of emissions.

The modeled 24-hr average concentration from both modeling analyses were then multiplied by the maximum H₂S emission rate of each EFR and IFR tank operation as shown in the following table. The maximum 24-hour average concentration as shown in the following table was determined based on the following: standing and withdrawal emissions from the EFR and IFR tanks occur simultaneously; worst-case landing emissions assume one tank is refilled in a 24-hour period; worst-case cleaning emissions assume one tank is purged in a 24-hour period; and maximum emissions assume that landing and cleaning emissions will not occur concurrently.

Table VII.2: H₂S Modeled Impacts

| Emissions Source | H₂S (lb/hr) | Modeled 24-hr Impact ($\mu\text{g}/\text{m}^3$) / (lb/hr) | 24-hr Impact ($\mu\text{g}/\text{m}^3$) | Included in Maximum Impact? |
|-------------------------------|-------------------------------|---|---|------------------------------------|
| EFR Standing Losses | 1.30E-01 | 51.99 | 6.77 | Y |
| EFR Withdrawal Losses | 1.34E-03 | 51.99 | 0.07 | Y |
| EFR Landing Event | 5.17E+00 | 51.99 | 268.81 | Y |
| EFR Cleaning Event | 5.84E-01 | 51.99 | 30.39 | N |
| IFR Standing Losses | 3.38E-03 | 558.7 | 1.89 | Y |
| IFR Withdrawal Losses | 2.13E-05 | 558.7 | 0.01 | Y |
| IFR Landing Event | 3.31E-01 | 558.7 | 184.92 | N |
| IFR Cleaning Event | 9.86E-02 | 558.7 | 55.11 | N |
| Sum of Maximum Impacts | --- | --- | 277.55 | --- |

The resulting modeled impact for H₂S is 277.55 $\mu\text{g}/\text{m}^3$ (24-hr average), which is in compliance with the limit of 0.2 ppm (283 $\mu\text{g}/\text{m}^3$ based on EPA standard conditions), 24-hour average. Furthermore, estimates based on refined modeling using AERMOD indicate modeled 24-hr impacts are approximately 20% of the modeled 1-hr impacts.

Part 5, Section 31-25 limits sulfur dioxide emissions from new equipment (constructed after July 1, 1972). For gaseous fuels the limit is 0.2 lb/MMBtu heat input averaged over 3 hours; for liquid fuels, the limit is 0.8 lb/MMBtu heat input averaged over 3 hours. The limited-use engines use diesel as fuel. AP-42 (10/96) Table 3.4-1 lists an SO₂ emission factor of 1.01S₁ for engines burning

diesel fuel. The diesel engines are limited to combustion of ultra-low sulfur diesel (< 15 ppmw S) and will emit approximately 0.0015 lb/MMBtu. Therefore, the fuel-burning units on-site are in compliance with the emissions rate limits of this part.

OAC 252:100-33 (Nitrogen Oxides)

[Not Applicable]

This subchapter applies to stationary sources that are fuel-burning equipment, constructed, altered, replaced, or rebuilt after February 14, 1972, with a rated heat input greater than or equal to 50 MMBtu/hr. All of the fuel-burning equipment on-site has a heat input of less than 50-MMBtu/hr.

OAC 252:100-35 (Carbon Monoxide)

[Not Applicable]

None of the affected sources are associated with this project: gray iron cupola, blast furnace, basic oxygen furnace, petroleum catalytic cracking unit, or petroleum catalytic reforming unit.

OAC 252:100-37 (Volatile Organic Compounds)

[Applicable]

Part 3, Section 37-15(a) requires storage tanks constructed after December 28, 1974, with a capacity greater than 40,000 gallons to be a pressure vessel capable of maintaining working pressures that prevent the loss of VOC to the atmosphere, equipped with an external or internal floating roof, or a vapor-recovery system capable of collecting 85% or more of the uncontrolled VOCs. All tanks identified in EUGs 1A and 1B all have capacities of greater than 40,000 gallons and are all equipped with external or internal floating roofs. However, these tanks are subject to the requirements of NSPS Subpart Kb. Any tanks subject to the equipment standards of NSPS Subpart Kb are exempt from the requirements of this subsection. The six (6) butane bullet tanks each have capacities of greater than 40,000 gallons and are each pressure vessels capable of maintaining working pressures that prevent the loss of VOC to the atmosphere. Therefore, the butane bullet tanks are in compliance with the requirements of this section. All other tanks at this facility have storage capacities below the applicability threshold of this subsection.

Part 3, Section 37-15(b) requires storage tanks constructed after December 28, 1974, with a capacity between 400 and 40,000 gallons and storing a VOC with a vapor pressure greater than 1.5 psia to be equipped with a permanent submerged fill pipe or with an organic vapor recovery system. OAC 252:100-37-4(a) exempts storage vessels from the requirements of this section which store VOCs with a vapor pressure of less than 1.5 psia under actual storage conditions. With the exception of the 250-gallon diesel fuel storage tank (AST-3), all tanks identified in EUGs 1C and EUG7 each have storage capacities of between 400 gallons and 40,000 gallons and are potentially subject to this subpart. While some of these storage tanks store mineral spirits which a maximum vapor pressure of less than 1.5 psia, these tanks are each equipped with a permanent submerged fill pipe as a result of the BACT analysis.

Part 3, Section 37-16 applies to VOC loading facilities constructed after December 24, 1974. Facilities with a throughput greater than 40,000 gallons/day are required to be equipped with a vapor-collection and disposal system unless all loading is accomplished by bottom loading with the hatches of the tank truck or trailer closed.

Part 5, Section 37-25 limits the VOC content of coatings from any coating line or other coating operation. Painting operations will involve maintenance coatings of buildings and equipment emitting less than 100 pounds per day of VOC, which are exempt.

Part 7, Section 37-36 requires fuel-burning and refuse-burning equipment to be cleaned, operated, and maintained to minimize emissions of VOC. The engines will be operated based on manufacturer’s recommendations to ensure proper combustion.

Part 7, Section 37-37 requires all effluent water separator openings which receive water containing more than 200 gallons per day of any VOC, to be sealed or the separator to be equipped with an external floating roof or a fixed roof with an internal floating roof or a vapor recovery system. No effluent water separators are located at this facility.

OAC 252:100-42 (Toxic Air Contaminants) [Not Applicable]
 This subchapter regulates Toxic Air Contaminants (TAC) that are emitted into the ambient air in areas of concern (AOC). Any work practice, material substitution, or control equipment required by the Department prior to June 11, 2004, to control a TAC, shall be retained, unless a modification is approved by the Director. Since no AOC has been designated there are no specific requirements for this facility at this time.

OAC 252:100-43 (Testing, Monitoring, and Recordkeeping) [Applicable]
 This subchapter provides general requirements for testing, monitoring, and recordkeeping and applies to any testing, monitoring, or recordkeeping activity conducted at any stationary source. To determine compliance with emissions limitations or standards, the Air Quality Director may require the owner or operator of any source in the state of Oklahoma to install, maintain, and operate monitoring equipment or to conduct tests, including stack tests, of the air contaminant source. All required testing must be conducted by methods approved by the Air Quality Director and under the direction of qualified personnel. A notice-of-intent to test and a testing protocol shall be submitted to Air Quality at least 30 days prior to any EPA Reference Method stack tests. Emissions and other data required to demonstrate compliance with any federal or state emission limit or standard, or any requirement set forth in a valid permit shall be recorded, maintained, and submitted as required by this subchapter, an applicable rule, or permit requirement. Data from any required testing or monitoring not conducted in accordance with the provisions of this subchapter shall be considered invalid. Nothing shall preclude the use, including the exclusive use, of any credible evidence or information relevant to whether a source would have been in compliance with applicable requirements if the appropriate performance or compliance test or procedure had been performed.

The following Oklahoma Air Pollution Control Rules are not applicable to this facility:

| | | |
|----------------|---------------------------------|---------------------------|
| OAC 252:100-11 | Alternative Emissions Reduction | Not requested |
| OAC 252:100-17 | Incinerators | Not type of emission unit |
| OAC 252:100-23 | Cotton Gins | Not type of emission unit |
| OAC 252:100-24 | Grain Elevators | Not in source category |
| OAC 252:100-39 | Nonattainment Areas | Not in area category |
| OAC 252:100-47 | Municipal Solid Waste Landfills | Not in source category |

SECTION VIII. FEDERAL REGULATIONS

PSD, 40 CFR Part 52

[Applicable]

The facility is a listed source having petroleum storage and transfer units with a total storage capacity exceeding 300,000-barrels (bbl) which emits, or has the potential to emit, 100 TPY or more of any regulated NSR pollutant. The potential emissions of the facility are greater than 100 TPY for VOC. Therefore, the facility is a major source and is subject to PSD review. A PSD analysis to include BACT and modeling is required for any PSD major source. Also, any project at a PSD major source that results in a significant emissions increase or a significant net emissions increase is subject to a PSD analysis. A significant emissions increase or significant net emissions increase is any project emissions increase that exceeds the following PSD SER: 100 TPY CO, 40 TPY NO_x, 40 TPY SO₂, 25 TPY PM, 15 TPY PM₁₀, 10 TPY PM_{2.5}, 40 TPY VOC, 0.6 TPY lead, 3 TPY fluorides, 7 TPY Sulfuric Acid Mist, 10 TPY H₂S, 10 TPY Total Reduced Sulfur, or 75,000 TPY CO₂-equivalent. A PSD applicability analysis for this permit action was conducted and the facility was determined to be significant for VOC, and therefore subject to the PSD permitting process. The PSD review is discussed in Section V of this memorandum.

NSPS, 40 CFR Part 60

[Subparts Kb and IIII are Applicable]

Subpart K, Storage Vessels for Petroleum Liquids. This subpart affects storage vessels for petroleum liquids which have a storage capacity greater than 40,000 gallons but less than 65,000 gallons and which commenced construction, reconstruction, or modification after March 8, 1974, or which have a capacity greater than 65,000 gallons which commenced construction, reconstruction, or modification after June 11, 1973, and prior to May 19, 1978. The facility commenced construction after the applicability date of this subpart; therefore, the requirements of this subpart do not apply.

Subpart Ka, Storage Vessels for Petroleum Liquids. This subpart affects storage vessels for petroleum liquids that have a storage capacity greater than 40,000 gallons and which commenced construction, reconstruction, or modification after May 18, 1978, and prior to July 23, 1984. The facility commenced construction after the applicability dates of this subpart; therefore, the requirements of this subpart do not apply.

Subpart Kb, Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984, and On or Before October 4, 2023. This subpart applies to each storage vessel with a capacity of greater than or equal to 75 m³ (19,813 gallons) that is used to store volatile organic liquids (VOL) for which construction, reconstruction, or modification commenced after July 23, 1984. This subpart does not apply to storage vessels with a capacity greater than or equal to 151 m³ (39,890 gallons) storing a liquid with a maximum true vapor pressure less than 3.5 kPa (0.51 psia) or with a capacity greater than or equal to 75 m³ but less than 151 m³ storing a liquid with a maximum true vapor pressure less than 15.0 kPa (2.18 psia). §60.112b requires storage vessels having either a design capacity of greater than or equal to 151 m³ containing a VOL, as stored, with a maximum true vapor pressure equal to or greater than 5.2 kPa (0.75 psia) but less than 76.6 (11.1 psia) kPa or with a design capacity of greater than or equal to 75 m³ but less than 151 m³ containing a VOL, as stored, with a maximum true vapor pressure of equal to or greater than 27.6 kPa (4.0 psia) but less than 76.6 kPa, shall equip each storage vessel with either a fixed roof in

combination with an internal floating roof, an external floating roof, a closed vent system and control device, or an equivalent system.

The storage tanks (EUG 1A and EUG 1B) are all subject to this subpart. The permittee shall comply with this subpart by using either internal or external floating roofs as defined in §60.112b(a)(1) and (2), respectively. The permit will also require compliance with the testing (§60.113b), reporting and recordkeeping (§60.115b), and monitoring (§60.116b) of this subpart. In addition, the facility shall comply with all the applicable requirements 40 CFR Part 60 Subpart A including the notifications as described in §60.7.

Subpart Kc, Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After October 4, 2023. This subpart became effective on October 15, 2024. This subpart applies to each storage vessel with a capacity greater than or equal to 20,000 gallons (75.7 m³) that is used to store volatile organic liquids (VOL) for which construction, reconstruction, or modification is commenced after October 4, 2024, except as provided in § 60.110c(b). §60.110c(e) states that for the purpose of this subpart, “change in the method of operation of, an existing facility which increases the amount of any air pollutant” in the definition of modification in § 60.2 or “operational change to an existing facility which results in an increase in the emission rate to the atmosphere of any pollutant to which a standard applies” in § 60.14(a) means a change in operation occurs if the storage vessel is used to store a VOL that has a greater maximum true vapor pressure than all VOL historically stored or permitted; and the exemption in §60.14(e)(4) regarding alternative fuel or raw material does not apply to storage vessels. The storage tanks listed in EUGs No. 1A and 1B have capacities above the applicable threshold of this subpart but were constructed prior to the applicability date of this subpart. However, based on §60.110c(e) the tanks in EUGs No. 1A and 1B could be modified such that they become subject to the requirements of this subpart by storing a VOL that has a greater maximum true vapor pressure than all VOL historically stored or permitted (RVP 10). Therefore, the requirements of this subpart will be incorporated into the permit.

Subpart IIII, Stationary Compression Ignition Internal Combustion Engines (CI-ICE). This subpart affects stationary CI-ICE based on power and displacement ratings, depending on date of construction, beginning with those constructed after July 11, 2005, and manufactured after April 1, 2006, or engines reconstructed after July 11, 2005. The fire pump engine and emergency generator engine are subject to this subpart. Fire pump engines with a displacement of less than 30 liters per cylinder must comply with the emission standards in Table 4 of Subpart IIII. The emergency generator engine is subject to the Tier 3 emission standards for new nonroad CI engines described in [40 CFR Part 1039, Appendix I](#), for all pollutants and the smoke standards specified in [40 CFR §1039.105](#) beginning in model year 2007. The applicable standards are listed below:

Table VIII.1. Table 4 to 40 CFR Part 60, Subpart IIII Emission Standards

| Rated Engine Power | Starting Model Year | Units | NO _x + NMHC | CO | PM |
|--------------------------|---------------------|---------|------------------------|-----|------|
| 450≤kW<560 600≤HP<750 | 2009 | g/kW-hr | 4.0 | 3.5 | 0.20 |
| | | g/hp-hr | 3.0 | 2.6 | 0.15 |

Table VIII.2. Tier 3 Emission Standards from Appendix I of 40 CFR Part 1039

| Rated Engine Power | Starting Model Year | Units | NO _x + NMHC | CO | PM |
|--------------------|---------------------|---------|------------------------|-----|------|
| 130≤kW<560 | 2006 | g/kW-hr | 4.0 | 3.5 | 0.20 |

Table VIII.3. Smoke / Opacity Limits

| Acceleration | Lugging | Peak |
|--------------|---------|------|
| 20% | 15% | 50% |

Stationary CI ICE subject to this subpart with a displacement of less than 30 liters per cylinder must use ultra-low sulfur diesel fuel that meets the requirements of [40 CFR §1090.305](#). The permit requires that the permittee comply with all applicable requirements of this subpart.

Subpart JJJJ, Stationary Spark Ignition Internal Combustion Engines (SI-ICE). This subpart promulgates emission standards for all new SI engines ordered after June 12, 2006, and all SI engines modified or reconstructed after June 12, 2006, regardless of size. There are no SI engines at this facility.

Subparts OOOO, OOOOa, OOOOb, Crude Oil and Natural Gas Facilities. These subparts affect various source types located in the crude oil and natural gas source category. This facility is considered part of the crude oil transmission and storage segment and is not part of the affected source category.

NESHAP, 40 CFR Part 61 [Not Applicable]
 There are no emissions of any of the regulated pollutants: arsenic, asbestos, benzene, beryllium, coke oven emissions, mercury, radionuclides, or vinyl chloride except for trace amounts of benzene.

Subpart J (Equipment Leaks of Benzene) concerns only process streams which contain more than 10% benzene by weight. Benzene is expected to only be present only in trace amounts in any product stream at this site.

Subpart BB (Benzene Transfer Operations) affects transfer and loading operations with 70% or more by weight benzene. Benzene is expected to only be present only in trace amounts in any product stream at this site.

NESHAP, 40 CFR Part 63

[Subpart ZZZZ is Applicable]

Subpart R, Gasoline Distribution Facilities (Bulk Gasoline Terminals and Pipeline Breakout Stations). This subpart only applies to gasoline facilities which are major sources of HAPs. The facility is not a major source of HAPs. This facility does not store gasoline. Therefore, this facility is not subject to this subpart.

Subpart EEEE, Organic Liquids Distribution (Non-Gasoline). This subpart affects organic liquid distribution (OLD) operations only at major sources of HAP emissions with an organic liquid throughput greater than 7.29 million gallons per year (173,571 bbl/yr). This facility is not a major source of HAPs. Therefore, this facility is not subject to this subpart.

Subpart ZZZZ, Reciprocating Internal Combustion Engines (RICE). This subpart affects any existing, new, or reconstructed stationary RICE located at a major or area source of HAP emissions. Owners and operators of the following new or reconstructed RICE must meet the requirements of Subpart ZZZZ by complying with either 40 CFR Part 60 Subpart IIII (for CI engines) or 40 CFR Part 60 Subpart JJJJ (for SI engines):

- 1) Stationary RICE located at an area source;
- 2) The following Stationary RICE located at a major source of HAP emissions:
 - i) 2SLB and 4SRB stationary RICE with a site rating of ≤ 500 brake HP;
 - ii) 4SLB stationary RICE with a site rating of < 250 brake HP;
 - iii) Stationary RICE with a site rating of ≤ 500 brake HP which combust landfill or digester gas equivalent to 10% or more of the gross heat input on an annual basis;
 - iv) Emergency or limited use stationary RICE with a site rating of ≤ 500 brake HP; and
 - v) CI stationary RICE with a site rating of ≤ 500 brake HP.

No further requirements apply for engines subject to NSPS under this part. Based on emission calculations, this facility is a minor source of HAP. A stationary RICE located at an area source of HAP emissions is new if construction commenced on or after June 12, 2006. Based on emission calculations discussed previously, the facility is an area source of HAP emissions. The stationary engines were manufactured after the applicability date of this subpart and will comply with this subpart by complying with the applicable requirements of 40 CFR Part 60, Subpart IIII.

Subpart BBBBBB, Gasoline Distribution Bulk Terminals, Bulk Plants, and Pipeline Facilities. This subpart affects area sources that are bulk gasoline terminals that are not subject to the control requirements of 40 CFR Part 63, Subpart R or 40 CFR Part 63, Subpart CC, pipeline breakout stations that are not subject to the control requirements of 40 CFR Part 63 Subpart R, pipeline pumping stations, and bulk gasoline plants. The facility does not handle gasoline and is therefore not subject to this subpart.

Subpart CCCCCC, Gasoline Dispensing Facilities. This subpart establishes emission limitations and management practices for HAP emitted from the loading of gasoline storage tanks at gasoline dispensing facilities (GDF) located at an area source. The facility does not handle gasoline and is therefore not subject to this subpart.

Compliance Assurance Monitoring (CAM), 40 CFR Part 64 [Not Applicable]
Compliance Assurance Monitoring (CAM), as published in the Federal Register on October 22, 1997, applies to any pollutant-specific emission unit at a major source that is required to obtain a Title V permit, if it meets all of the following criteria:

1. It is subject to an emission limit or standard for an applicable regulated air pollutant,
2. It uses a control device to achieve compliance with the applicable emission limit or standard, and
3. It has potential emissions, prior to the control device, of the applicable regulated air pollutant equal to or greater than major source thresholds (e.g., 100 TPY).

There are no individual emission units at this facility that meet all of the above criteria. Although the facility is a major source required to obtain a Part 70 permit, the storage tanks will not be equipped with any control devices and are therefore not subject to CAM monitoring requirements. Control devices do not include passive control measures such as seals, lids or roofs.

Chemical Accident Prevention Provisions, 40 CFR Part 68 [Not Applicable]
The definition of a stationary source does not apply to transportation, including storage incident to transportation, of any regulated substance or any other extremely hazardous substance under the provisions of this part. Naturally occurring hydrocarbon mixtures, prior to entry into a natural gas processing plant or a petroleum refining process unit, including: condensate, crude oil, field gas, and produced water, are exempt for the purpose of determining whether more than a threshold quantity of a regulated substance is present at the stationary source. More information on this federal program is available on the web page: www.epa.gov/rmp.

Stratospheric Ozone Protection, 40 CFR Part 82 [Subpart A and F are Applicable]
These standards require phase out of Class I & II substances, reductions of emissions of Class I & II substances to the lowest achievable level in all use sectors, and banning use of nonessential products containing ozone-depleting substances (Subparts A & C); control servicing of motor vehicle air conditioners (Subpart B); require Federal agencies to adopt procurement regulations which meet phase out requirements and which maximize the substitution of safe alternatives to Class I and Class II substances (Subpart D); require warning labels on products made with or containing Class I or II substances (Subpart E); maximize the use of recycling and recovery upon disposal (Subpart F); require producers to identify substitutes for ozone-depleting compounds under the Significant New Alternatives Program (Subpart G); and reduce the emissions of halons (Subpart H).

Subpart A identifies ozone-depleting substances and divides them into two classes. Class I controlled substances are divided into seven groups; the chemicals typically used by the manufacturing industry include carbon tetrachloride (Class I, Group IV) and methyl chloroform (Class I, Group V). A complete phase-out of production of Class I substances is required by January 1, 2000 (January 1, 2002, for methyl chloroform). Class II chemicals, which are hydrochlorofluorocarbons (HCFCs), are generally seen as interim substitutes for Class I CFCs. Class II substances consist of 33 HCFCs. A complete phase-out of Class II substances, scheduled in phases starting by 2002, is required by January 1, 2030.

Subpart F requires that any persons servicing, maintaining, or repairing appliances except for motor vehicle air conditioners; persons disposing of appliances, including motor vehicle air conditioners; refrigerant reclaimers, appliance owners, and manufacturers of appliances and recycling and recovery equipment comply with the standards for recycling and emissions reduction.

The Standard Conditions of the permit address the requirements specified at §82.156 for persons opening appliances for maintenance, service, repair, or disposal; §82.158 for equipment used during the maintenance, service, repair, or disposal of appliances; §82.161 for certification by an approved technician certification program of persons performing maintenance, service, repair, or disposal of appliances; §82.166 for recordkeeping; § 82.158 for leak repair requirements; and §82.166 for refrigerant purchase records for appliances normally containing 50 or more pounds of refrigerant.

This facility does not utilize any Class I & II substances in the manufacturing process.

SECTION IX. COMPLIANCE

The Specific Conditions of this permit contain various testing, monitoring, recordkeeping, and reporting requirements in order to document on-going compliance with emission limits. The specific methods used to document compliance were based on the type of emission unit, the type of process equipment, the specific pollutants emitted, and the amount of permitted emissions taking into account other regulatory requirements that an emission unit may be subject to.

On December 6, 2021, a voluntary self-disclosure was received which stated five (5) above ground diesel storage tanks and butane offloading equipment were constructed at the facility without first obtaining a construction permit. The facility originally believed these emissions sources could be considered Insignificant Activities or Trivial Activities under OAC 252:100-8 which could be constructed at the facility without first obtaining a construction permit. However, since these activities were constructed during the same construction phase as the equipment authorized under the previously issued PSD construction permits, the diesel tanks and butane offloading equipment should have been included in a construction permit and subject to PSD BACT review. Enforcement Case No. 10280 was opened as a result of the self-disclosure. The enforcement case required the facility to submit a PSD construction permit to modify the previous construction permit to include the diesel storage tanks and butane offloading equipment. This memorandum includes a review of BACT for the diesel storage tanks and butane offloading equipment and an updated air quality impacts analysis. Specific conditions have been added to the permit which require compliance with BACT emission limits, control requirements, equipment design requirements, and operating requirements.

SECTION X. TIER CLASSIFICATION, PUBLIC AND EPA REVIEW

This application has been determined to be a **Tier II** based on the request for a major source construction permit for a Part 70 facility which is not currently operating under a Part 70 operating permit per OAC 252:100-8-4(a)(1)(A), and where the application is required to undergo the significant modification procedures per OAC 252:100-8-7.2(b)(2)(A). The fee for a construction

permit for a Part 70 facility is \$5,000. A payment of \$5,000 was received on May 31, 2022. Since the facility has not been issued Part 70 operating permit, this application will be processed through the “traditional NSR process” which requires a public review opportunity for a period of 30 days. EPA will have an opportunity to review the draft construction permit during this public review period.

The applicant published a “Notice of Filing a Tier II Permit Application” on August 10, 2022, in the *Cushing Citizen*, a twice weekly newspaper printed and published in the City of Cushing, Payne County, in the State of Oklahoma, and having general circulation therein. The “Notice of Filing a Tier II Permit Application” stated that the application was available for public review at the Cushing city Library, 215 N. Steele Avenue, Cushing, OK 74023, and at the Air Quality Division main office.

The applicant will publish the “Notice of Tier II Draft Permit” as a legal notice in a newspaper of general circulation in the area where the source is located. The “Notice of Tier II Draft Permit” will state that the draft permit will be available for public review at a location in the county where the facility is located, and that the draft permit will also be available for public review at the Air Quality Division main office and Regional Office in Tulsa. The draft permit will be available for a 30-day public review period.

This facility is not located within 50 miles of the Oklahoma border and any other state. Tribal Nations will be notified of the draft permit.

The applicant has submitted an affidavit that they are not seeking a permit for land use or for any operation upon land owned by others without their knowledge. The affidavit certifies that the applicant (or applicant business) owns the land involved in this permit action.

The information on all permit actions is available for review by the public in the Air Quality section of the DEQ web page at <https://www.deq.ok.gov>.

SECTION XI. SUMMARY

The applicant has demonstrated the ability to comply with the requirements of the applicable Air Quality rules and regulations. Ambient air quality standards are not threatened at this site. There are not active Air Quality compliance or enforcement issues that would prevent issuance of this permit. Issuance of the permit is recommended, contingent upon public and EPA reviews.

**PERMIT TO CONSTRUCT
AIR POLLUTION CONTROL FACILITY
SPECIFIC CONDITIONS**

**Keyera Energy, Inc.
Wildhorse Terminal**

**Permit No. 2016-1066-C (M-2) (PSD)
AQD Facility ID No. 16676**

The permittee is authorized to construct in conformity with the specifications submitted to Air Quality on March 27, 2022, and supplemental information submitted thereafter. The Evaluation Memorandum, dated January 3, 2025, is attached to this permit to explain the derivation of applicable permit requirements and estimates of emissions; however, it does not contain operating limitations or permit requirements. Commencing construction and continuing operations under this permit constitutes acceptance of consent to, the conditions contained herein:

1. Points of emissions limitations for each point: [OAC 252:100-8-6(a)(1)]

a. EUG 1A: External Floating Roof Tanks

| EU ID# | Contents | Roof Type ⁽¹⁾ | Capacity (bbl) |
|---------------|-----------------|---------------------------------|-----------------------|
| T-204 | Crude Oil | EFR | 250,000 |
| T-211 | Crude Oil | EFR | 250,000 |
| T-212 | Crude Oil | EFR | 250,000 |
| T-205 | Crude Oil | EFR | 350,000 |
| T-213 | Crude Oil | EFR | 350,000 |
| T-214 | Crude Oil | EFR | 350,000 |
| T-215 | Crude Oil | EFR | 350,000 |
| T-216 | Crude Oil | EFR | 350,000 |
| T-201 | Crude Oil | EFR | 500,000 |
| T-202 | Crude Oil | EFR | 500,000 |
| T-203 | Crude Oil | EFR | 500,000 |
| T-206 | Crude Oil | EFR | 500,000 |

⁽¹⁾ EFR = External Floating Roof.

- i. Each tank shall be equipped with an external floating roof which meets the requirements of 40 CFR §60.112b(a)(2).
- ii. Each external floating roof shall be equipped with a primary mechanical shoe seal and a secondary seal.
- iii. Each tank bottom shall be drain-dry by design with a slope which drains the liquid contents to the sump or sumps when liquid levels fall below the pipe outlet.
- iv. Emissions of VOC and HAP from withdrawal and standing losses shall be calculated monthly using the applicable methodology as prescribed in the most recent version of AP-42, Section 7.1, and shall be based on actual tank contents.

b. EUG 1B: Internal Floating Roof Tanks

| EU ID# | Contents | Roof Type ⁽¹⁾ | Capacity (bbl) |
|--------|-----------|--------------------------|----------------|
| T-221 | Crude Oil | IFR | 20,000 |

⁽¹⁾ IFR = Internal Floating Roof.

- i. Each tank shall be equipped with a fixed roof in combination with an internal floating roof which meets the requirements of 40 CFR §60.112b(a)(1).
- ii. Each internal floating roof shall be equipped with a primary mechanical shoe seal.
- iii. Each tank bottom shall be drain-dry by design with a slope which drains the liquid contents to the sump or sumps when liquid levels fall below the pipe outlet.
- iv. Emissions of VOC and HAP from withdrawal and standing losses shall be calculated monthly using the applicable methodology as prescribed in the most recent version of AP-42, Section 7.1, and shall be based on actual tank contents.

c. EUG 1C: Fuel Storage Tanks

| EU ID# | Contents | Roof Type ⁽¹⁾ | Capacity (bbl) |
|--------|----------|--------------------------|----------------|
| AST-1 | Diesel | VFR | 2,500 |
| AST-2 | Diesel | VFR | 830 |
| AST-3 | Diesel | VFR | 250 |

⁽¹⁾ VFR = Vertical Fixed Roof.

- i. Emissions of VOC and HAP from withdrawal and standing losses shall be calculated monthly using the applicable methodology as prescribed in the most recent version of AP-42, Section 7.1, and shall be based on actual tank contents.
- ii. The emissions from tank cleaning events shall be included when demonstrate compliance with the facility-wide emission limits.
- iii. The tanks listed under this EUG shall be designed and operated with a submerged fill pipes. [OAC 252:100-8-6(a)(1)]

d. EUG 1D. Butane Bullet Tanks

| EU ID# | Equipment | Capacity (gal) | Max Pressure (psig) | Max Temp. (°F) |
|--------|--------------------------------|----------------|---------------------|----------------|
| V-111 | Butane Pressurized Bullet Tank | 120,000 | 150 | 120 |
| V-112 | Butane Pressurized Bullet Tank | 120,000 | 150 | 120 |
| V-113 | Butane Pressurized Bullet Tank | 120,000 | 150 | 120 |
| V-114 | Butane Pressurized Bullet Tank | 120,000 | 150 | 120 |
| V-115 | Butane Pressurized Bullet Tank | 120,000 | 150 | 120 |
| V-116 | Butane Pressurized Bullet Tank | 120,000 | 150 | 120 |

- i. The six (6) butane bullet tanks shall be designed as pressure vessels capable of maintaining working pressures that prevent the loss of VOC to the atmosphere.
[OAC 252:100-37-15(a)]

e. EUG 2: Roof Landings

- i. In any continuous 12-month period, facility-wide VOC emissions from roof landings shall not exceed 64.31 TPY.
- ii. The emissions from roof landing events shall be included when demonstrating compliance with the facility-wide emission limits.
- iii. Emissions of VOC and HAP from standing idle and filling losses shall be calculated monthly using the applicable methodology as prescribed in the most recent version of AP-42, Section 7.1, and shall be based on actual tank contents.

f. EUG 3: Tank Cleanings

- i. In any continuous 12-month period, facility-wide VOC emissions from tank cleanings shall not exceed 26.28 TPY.
- ii. The emissions from tank cleaning events shall be included when demonstrate compliance with the facility-wide emission limits.
- iii. Emissions of VOC and HAP from vapor space purge losses associated with the first air change following commencement of forced ventilation shall be calculated monthly using the applicable methodology as prescribed in the most recent version of AP-42, Section 7.1, and shall be based on actual tank contents.
- iv. Emissions of VOC and HAP from continued forced ventilation (i.e., sludge removal) losses shall be calculated monthly using Equation 25 (the air driven loss method) of the American Petroleum Institute's (API) Technical Report, "Evaporative Loss from the Cleaning of Storage Tanks" (November 2007) and shall be based on actual tank contents.

g. EUG 4: Fugitive Equipment Leaks

- i. Fugitive equipment items are not limited in number and have no individual VOC or HAP emissions limitations. The emissions from fugitive equipment leaks shall be included when demonstrating compliance with the facility-wide emission limits.
- ii. The facility shall maintain an updated list of all fugitive emission components (including component type and service type), which shall be updated as a result of any physical change or modification of the facility.
- iii. The facility shall prepare, implement, and maintain a Spill Prevention, Control, and Countermeasure (SPCC) Plan as required by 40 CFR Part 112. This plan requires regular inspection of all aboveground valves, piping, and appurtenances. Records of quarterly inspections and any identified visual leaks shall be maintained. Visual leaks shall be repaired as soon as practical, and records of corrective actions shall be maintained. The SPCC inspection requirement also applies to pigging equipment, sump tanks, lab solvent containers and tanks, and the butane offloading which are otherwise classified as Insignificant Activities.

h. EUG 5: Limited-Use Engines

- i. The facility is authorized to operate the limited-use engines as listed below. GEN-1 shall be certified to meet the applicable Tier 3 emissions standards of Appendix I to 40 CFR Part 1039, and FP-2 shall be certified to meet the applicable requirements of Table 4 of 40 CFR Part 60, Subpart IIII, which are summarized in the following table.

| EU ID | Name / Model | Rating (hp) | NMHC+NO_x in g/kW-hr (g/hp-hr) | CO in g/kW-hr (g/hp-hr) | PM in g/kW-hr (g/hp-hr) |
|--------------|--|--------------------|---|--------------------------------|--------------------------------|
| GEN-1 | Caterpillar C13 Emergency Generator Engine | 620 | 4.0 | 3.5 | 0.20 |

| EU ID | Name / Model | Rating (hp) | NMHC+NO_x in g/kW-hr (g/hp-hr) | CO in g/kW-hr (g/hp-hr) | PM in g/kW-hr (g/hp-hr) |
|--------------|-------------------------------------|--------------------|---|--------------------------------|--------------------------------|
| FP-2 | Clark C18H0 UFAD68 Fire Pump Engine | 687 | 4.0 (3.0) | 3.5 (2.6) | 0.20 (1.5) |

- ii. Each of the emergency generator engines shall have a permanent identification plate attached that shows the make, model number, and serial number. [OAC 252:100-43]

i. EUG 6: Butane Offloading Skid

- i. The butane offloading skid equipment is not limited to individual VOC or HAP emissions limitations. The emissions from butane offloading skid equipment shall be included when demonstrating compliance with the facility-wide emission limits.
- ii. All loading lines shall be equipped with fittings that make vapor-tight connections and which close automatically when disconnected.
- iii. Contractors (e.g., transport drivers, truck operators, etc.) shall visually monitor for leaks or releases during butane offloading operations and shall immediately report any leaks or releases identified to the facility operators.
- iv. Facility operators shall conduct daily visual inspections to identify signs of leaks or releases and shall report any leaks or releases identified.
- v. Each leak or release shall be documented and shall include, but is not limited to, the date and time when the leak or release was identified, a description of the leak or release, and any corrective actions required. Corrective actions shall be conducted as soon as practicable and shall be documented. Each corrective action shall be documented and shall include, but is not limited to, the date and time of the corrective action and a description of the corrective action taken.
- vi. Perform annual hydrostatic testing of butane offloading transfer hoses to ensure hoses and connections meet industry pressure rating specifications.
- vii. Install and maintain a gas detection system to monitor for releases from the butane offloading area.

- viii. Facility employees and contractors (e.g., transport drivers, truck operators, etc.) shall complete training and refresher every three (3) years. Records of training shall include when training as given and identify individuals that have completed the training.

j. Facility-Wide Emission Limits

- i. Facility-wide VOC emissions from all sources (e.g., tanks, fugitive equipment leaks, and other VOC emissions sources) are limited to not more than **181.14 tons** in any 12-month rolling period.
 - ii. Facility-wide emissions of Hazardous Air Pollutants (HAP) from all sources (tanks, fugitives, and any other HAP emission source) are limited to not more than **9.9 tons** of any single HAP and **24.9 tons** of any combination of HAPs in any continuous 12-month period.
 - iii. Emissions and throughputs may be freely exchanged between all floating roof tanks covered by this permit so long as the total emission limits of Specific Conditions No. 1.i.i and 1.i.ii are not exceeded.
 - iv. Compliance shall be demonstrated by:
 - A. A rolling 12-month total of VOC emissions calculated monthly no later than 45 days after the end of each month.
 - B. Records of material stored and throughput for each tank.
 - C. Calculations of emissions from roof landing events.
 - D. Calculations of emissions from tank cleaning events.
 - E. Inclusion of emission estimates for fugitive HAP sources and any other identified sources of HAP emissions.
2. Each tank in EUG 1A and EUG 1B is subject to 40 CFR Part 60, Subpart Kb, Standards of Performance for Volatile Organic Liquid Storage Vessels, and shall comply with all applicable requirements for external or internal floating roof tanks which shall include, but are not limited to, the following requirements: [40 CFR §§ 60.110b through 60.116b]
- a. § 60.110b Applicability and designation of affected facility.
 - b. § 60.111b Definitions.
 - c. § 60.112b Standard for volatile organic compounds (VOC).
 - d. § 60.113b Testing and procedures.
 - e. § 60.114b Alternative means of emission limitation.
 - f. § 60.115b Reporting and recordkeeping requirements.
 - g. § 60.116b Monitoring of operations.
3. Any tank in EUG 1A and EUG 1B meeting the definition of modification under §60.110c is subject to 40 CFR Part 60, Subpart Kc, Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After October 4, 2023, and shall comply with all applicable requirements for external or internal floating roof tanks which shall include, but are not limited to, the following requirements: [40 CFR §§ 60.110c through 60.116c]

- a. § 60.110c Applicability and designation of affected facility.
 - b. § 60.111c Definitions.
 - c. § 60.112c Standard for volatile organic compounds (VOC).
 - d. § 60.113c Testing, monitoring, and inspection procedures.
 - e. § 60.114c Alternative means of emission limitation.
 - f. § 60.115c Recordkeeping requirements.
 - g. § 60.116c Reporting requirements.
4. For each stationary engine in EUG 5, the permittee shall comply with all applicable requirements of 40 CFR Part 60, Subpart IIII, Standards of Performance for Stationary Compression Ignition Internal Combustion Engines and shall comply with all applicable requirements including but not limited to the following:

[40 CFR §§ 60.4200 through 60.4219]

What This Subpart Covers

- a. § 60.4200 Am I subject to this subpart?

Emission Standards for Manufacturers

- b. § 60.4201 What emission standards must I meet for non-emergency engines if I am a stationary CI internal combustion engine manufacturer?
- c. § 60.4202 What emission standards must I meet for emergency engines if I am a stationary CI internal combustion engine manufacturer?
- d. § 60.4203 How long must my engines meet the emission standards if I am a manufacturer of stationary CI internal combustion engines?

Emission Standards for Owners and Operators

- e. § 60.4204 What emission standards must I meet for non-emergency engines if I am an owner or operator of a stationary CI internal combustion engine?
- f. § 60.4205 What emission standards must I meet for emergency engines if I am an owner or operator of a stationary CI internal combustion engine?
- g. § 60.4206 How long must I meet the emission standards if I am an owner or operator of a stationary CI internal combustion engine?

Fuel Requirements for Owners and Operators

- h. § 60.4207 What fuel requirements must I meet if I am an owner or operator of a stationary CI internal combustion engine subject to this subpart?

Other Requirements for Owners and Operators

- i. § 60.4208 What is the deadline for importing or installing stationary CI ICE produced in previous model years?
- j. § 60.4209 What are the monitoring requirements if I am an owner or operator of a stationary CI internal combustion engine?

Compliance Requirements

- k. § 60.4210 What are my compliance requirements if I am a stationary CI internal combustion engine manufacturer?
- l. § 60.4211 What are my compliance requirements if I am an owner or operator of a stationary CI internal combustion engine?

Testing Requirements for Owners and Operators

- m. § 60.4212 What test methods and other procedures must I use if I am an owner or operator of a stationary CI internal combustion engine with a displacement of less than 30 liters per cylinder?
- n. § 60.4213 What test methods and other procedures must I use if I am an owner or operator of a stationary CI internal combustion engine with a displacement of greater than or equal to 30 liters per cylinder?

Notification, Reports, and Records for Owners and Operators

- o. § 60.4214 What are my notification, reporting, and recordkeeping requirements if I am an owner or operator of a stationary CI internal combustion engine?

General Provisions

- p. § 60.4218 What General Provisions and confidential information provisions apply to me?

Definitions

- q. § 60.4219 What definitions apply to this subpart?

- 5. The owner/operator shall comply with all applicable requirements of the 40 CFR Part 63, Subpart ZZZZ, Stationary Reciprocating Internal Combustion Engines, for each affected facility including but not limited to: [40 CFR §§ 63.6580 through 63.6675]

What This Subpart Covers

- a. § 63.6580 What is the purpose of subpart ZZZZ?
- b. § 63.6585 Am I subject to this subpart?
- c. § 63.6590 What parts of my plant does this subpart cover?
- d. § 63.6595 When do I have to comply with this subpart?

Emission and Operating Limitations

- e. § 63.6600 What emission limitations and operating limitations must I meet if I own or operate a stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions?
- f. § 63.6601 What emission limitations must I meet if I own or operate a new or reconstructed 4SLB stationary RICE with a site rating of greater than or equal to 250 brake HP and less than or equal to 500 brake HP located at a major source of HAP emissions?
- g. § 63.6602 What emission limitations and other requirements must I meet if I own or operate an existing stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions?
- h. § 63.6603 What emission limitations, operating limitations, and other requirements must I meet if I own or operate an existing stationary RICE located at an area source of HAP emissions?
- i. § 63.6604 What fuel requirements must I meet if I own or operate a stationary CI RICE?

General Compliance Requirements

- j. § 63.6605 What are my general requirements for complying with this subpart?

Testing and Initial Compliance Requirements

- k. § 63.6610 By what date must I conduct the initial performance tests or other initial compliance demonstrations if I own or operate a stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions?

- l. § 63.6611 By what date must I conduct the initial performance tests or other initial compliance demonstrations if I own or operate a new or reconstructed 4SLB SI stationary RICE with a site rating of greater than or equal to 250 and less than or equal to 500 brake HP located at a major source of HAP emissions?
 - m. § 63.6612 By what date must I conduct the initial performance tests or other initial compliance demonstrations if I own or operate an existing stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions or an existing stationary RICE located at an area source of HAP emissions?
 - n. § 63.6615 When must I conduct subsequent performance tests?
 - o. § 63.6620 What performance tests and other procedures must I use?
 - p. § 63.6625 What are my monitoring, installation, collection, operation, and maintenance requirements?
 - q. § 63.6630 How do I demonstrate initial compliance with the emission limitations, operating limitations, and other requirements?
Continuous Compliance Requirements
 - r. § 63.6635 How do I monitor and collect data to demonstrate continuous compliance?
 - s. § 63.6640 How do I demonstrate continuous compliance with the emission limitations, operating limitations, and other requirements?
Notifications, Reports, and Records
 - t. § 63.6645 What notifications must I submit and when?
 - u. § 63.6650 What reports must I submit and when?
 - v. § 63.6655 What records must I keep?
 - w. § 63.6660 In what form and how long must I keep my records?
Other Requirements and Information
 - x. § 63.6665 What parts of the General Provisions apply to me?
 - y. § 63.6670 Who implements and enforces this subpart?
 - z. § 63.6675 What definitions apply to this subpart?
6. Upon issuance of an operating permit, the permittee shall be authorized to operate this facility continuously (24 hours per day, every day of the year). [OAC 252:100-8-6(a)]
 7. Each tank to which these specific conditions apply shall have a permanent means of identification which distinguishes it from other equipment. [OAC 252:100-8-5(e)(3)(B)]
 8. Crude oil stored at the facility shall be limited to a maximum true vapor pressure, as stored, of less than 11.1 psia. Compliance shall be demonstrated using one of the methods allowed under the definition of “maximum true vapor pressure” as defined under 40 CFR §60.111b. [OAC 252:100-8-6(a)]
 9. The facility shall not handle crude oil with an average sulfur content >5 wt%. Records of classification and sulfur content shall be kept each month for each tank of crude oil classification and sulfur content. [OAC 252:100-8-6(a)(1) & (3)]
 10. The 4,000-gallon sump tank (T-S1) and 500-gallon sump tank (T-S2) shall each be operated with submerged fill pipes. The 500-gallon lab solvent container (T-L1) and 700-gallon solvent

tank (T-L2) shall each be designed with a closed top (e.g., covered by a gasketed lid or cap when not in use) and operated with a submerged fill pipe. [OAC 252:100-8-6(a)(1)]

11. This facility is considered an existing Prevention of Significant Deterioration (PSD) facility. As such, the facility is subject to the provisions of OAC 252:100-8-36.2(c) for any project as defined therein. [OAC 252:100-8-36.2(c)]
12. The permittee shall maintain records of operations as listed below. These records shall be retained on-site for at least five years from the date of recording, inspection, testing, or repair, and shall be made available to regulatory personnel upon request. [OAC 252:100-8-6(a)(3)(B)]
 - a. Throughputs for each tank in Specific Condition No. 1 (monthly and 12-month rolling totals) calculated no later than 45 days after the end of each month. Throughputs shall be either the (1) the actual measured total volumetric throughput for each tank, or (2) volumetric throughput calculated by multiplying the sum of all decreases in liquid level (in feet) measured and recorded using an electronic measurement and recording system by the area of the tank.
 - b. Records of emissions calculations to show compliance with VOC and HAP emission limits in Specific Condition No. 1.
 - c. Records identifying the number of tank roof landings and tank cleanings for each tank, monthly.
 - d. Type of liquid material, maximum true vapor pressure, and period of storage for each tank.
 - e. Records of crude oil classification (“sour” or “sweet”) and sulfur content of crude oil in each tank (monthly).
 - f. Records required by 40 CFR Part 60, Subparts Kb, Kc, and IIII.
 - g. Records required by 40 CFR Part 63, Subpart ZZZZ.
 - h. Records documenting compliance with the facility Spill Prevention, Control, and Countermeasure (SPCC) Plan as required under Specific Conditions No. 1.g.iii.
 - i. Records required by Specific Conditions No. 1.i.iii through 1.i.viii for butane offloading.
 - j. Records required by Specific Condition No. 11 to demonstrate compliance with OAC 252:100-8-36.2(c).
13. To the extent this permit requires the permittee to record and/or maintain records, the same may be conducted in hardcopy or electronically as long as such records can be provided to DEQ personnel within a reasonable time following a request for the same. [OAC 252:100-8-6(a)(7)(E)]
14. The Permit Shield (Standard Conditions, Section VI) is extended to the following requirements that have been determined to be inapplicable to this facility. [OAC 252:100-8-6(d)(2)]
 - a. OAC 252:100-7 Permits for Minor Facilities
 - b. OAC 252:100-11 Alternative Emissions Reduction
 - c. OAC 252:100-39 Nonattainment Areas

15. The permittee shall apply for a modified operating permit within 180 days of commencement of operation of any new equipment authorized by this construction permit, incorporating the various changes. [OAC 252:100-8-4(b)(5)(A)]

**MAJOR SOURCE AIR QUALITY PERMIT
STANDARD CONDITIONS
(June 21, 2016)**

SECTION I. DUTY TO COMPLY

A. This is a permit to operate / construct this specific facility in accordance with the federal Clean Air Act (42 U.S.C. 7401, et al.) and under the authority of the Oklahoma Clean Air Act and the rules promulgated there under. [Oklahoma Clean Air Act, 27A O.S. § 2-5-112]

B. The issuing Authority for the permit is the Air Quality Division (AQD) of the Oklahoma Department of Environmental Quality (DEQ). The permit does not relieve the holder of the obligation to comply with other applicable federal, state, or local statutes, regulations, rules, or ordinances. [Oklahoma Clean Air Act, 27A O.S. § 2-5-112]

C. The permittee shall comply with all conditions of this permit. Any permit noncompliance shall constitute a violation of the Oklahoma Clean Air Act and shall be grounds for enforcement action, permit termination, revocation and reissuance, or modification, or for denial of a permit renewal application. All terms and conditions are enforceable by the DEQ, by the Environmental Protection Agency (EPA), and by citizens under section 304 of the Federal Clean Air Act (excluding state-only requirements). This permit is valid for operations only at the specific location listed.

[40 C.F.R. §70.6(b), OAC 252:100-8-1.3 and OAC 252:100-8-6(a)(7)(A) and (b)(1)]

D. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit. However, nothing in this paragraph shall be construed as precluding consideration of a need to halt or reduce activity as a mitigating factor in assessing penalties for noncompliance if the health, safety, or environmental impacts of halting or reducing operations would be more serious than the impacts of continuing operations. [OAC 252:100-8-6(a)(7)(B)]

SECTION II. REPORTING OF DEVIATIONS FROM PERMIT TERMS

A. Any exceedance resulting from an emergency and/or posing an imminent and substantial danger to public health, safety, or the environment shall be reported in accordance with Section XIV (Emergencies). [OAC 252:100-8-6(a)(3)(C)(iii)(I) & (II)]

B. Deviations that result in emissions exceeding those allowed in this permit shall be reported consistent with the requirements of OAC 252:100-9, Excess Emission Reporting Requirements. [OAC 252:100-8-6(a)(3)(C)(iv)]

C. Every written report submitted under this section shall be certified as required by Section III (Monitoring, Testing, Recordkeeping & Reporting), Paragraph F. [OAC 252:100-8-6(a)(3)(C)(iv)]

SECTION III. MONITORING, TESTING, RECORDKEEPING & REPORTING

A. The permittee shall keep records as specified in this permit. These records, including monitoring data and necessary support information, shall be retained on-site or at a nearby field office for a period of at least five years from the date of the monitoring sample, measurement, report, or application, and shall be made available for inspection by regulatory personnel upon request. Support information includes all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit. Where appropriate, the permit may specify that records may be maintained in computerized form.

[OAC 252:100-8-6 (a)(3)(B)(ii), OAC 252:100-8-6(c)(1), and OAC 252:100-8-6(c)(2)(B)]

B. Records of required monitoring shall include:

- (1) the date, place and time of sampling or measurement;
- (2) the date or dates analyses were performed;
- (3) the company or entity which performed the analyses;
- (4) the analytical techniques or methods used;
- (5) the results of such analyses; and
- (6) the operating conditions existing at the time of sampling or measurement.

[OAC 252:100-8-6(a)(3)(B)(i)]

C. No later than 30 days after each six (6) month period, after the date of the issuance of the original Part 70 operating permit or alternative date as specifically identified in a subsequent Part 70 operating permit, the permittee shall submit to AQD a report of the results of any required monitoring. All instances of deviations from permit requirements since the previous report shall be clearly identified in the report. Submission of these periodic reports will satisfy any reporting requirement of Paragraph E below that is duplicative of the periodic reports, if so noted on the submitted report.

[OAC 252:100-8-6(a)(3)(C)(i) and (ii)]

D. If any testing shows emissions in excess of limitations specified in this permit, the owner or operator shall comply with the provisions of Section II (Reporting Of Deviations From Permit Terms) of these standard conditions.

[OAC 252:100-8-6(a)(3)(C)(iii)]

E. In addition to any monitoring, recordkeeping or reporting requirement specified in this permit, monitoring and reporting may be required under the provisions of OAC 252:100-43, Testing, Monitoring, and Recordkeeping, or as required by any provision of the Federal Clean Air Act or Oklahoma Clean Air Act.

[OAC 252:100-43]

F. Any Annual Certification of Compliance, Semi Annual Monitoring and Deviation Report, Excess Emission Report, and Annual Emission Inventory submitted in accordance with this permit shall be certified by a responsible official. This certification shall be signed by a responsible official, and shall contain the following language: "I certify, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete."

[OAC 252:100-8-5(f), OAC 252:100-8-6(a)(3)(C)(iv), OAC 252:100-8-6(c)(1), OAC 252:100-9-7(e), and OAC 252:100-5-2.1(f)]

G. Any owner or operator subject to the provisions of New Source Performance Standards (“NSPS”) under 40 CFR Part 60 or National Emission Standards for Hazardous Air Pollutants (“NESHAPs”) under 40 CFR Parts 61 and 63 shall maintain a file of all measurements and other information required by the applicable general provisions and subpart(s). These records shall be maintained in a permanent file suitable for inspection, shall be retained for a period of at least five years as required by Paragraph A of this Section, and shall include records of the occurrence and duration of any start-up, shutdown, or malfunction in the operation of an affected facility, any malfunction of the air pollution control equipment; and any periods during which a continuous monitoring system or monitoring device is inoperative.

[40 C.F.R. §§60.7 and 63.10, 40 CFR Parts 61, Subpart A, and OAC 252:100, Appendix Q]

H. The permittee of a facility that is operating subject to a schedule of compliance shall submit to the DEQ a progress report at least semi-annually. The progress reports shall contain dates for achieving the activities, milestones or compliance required in the schedule of compliance and the dates when such activities, milestones or compliance was achieved. The progress reports shall also contain an explanation of why any dates in the schedule of compliance were not or will not be met, and any preventive or corrective measures adopted. [OAC 252:100-8-6(c)(4)]

I. All testing must be conducted under the direction of qualified personnel by methods approved by the Division Director. All tests shall be made and the results calculated in accordance with standard test procedures. The use of alternative test procedures must be approved by EPA. When a portable analyzer is used to measure emissions it shall be setup, calibrated, and operated in accordance with the manufacturer’s instructions and in accordance with a protocol meeting the requirements of the “AQD Portable Analyzer Guidance” document or an equivalent method approved by Air Quality. [OAC 252:100-8-6(a)(3)(A)(iv), and OAC 252:100-43]

J. The reporting of total particulate matter emissions as required in Part 7 of OAC 252:100-8 (Permits for Part 70 Sources), OAC 252:100-19 (Control of Emission of Particulate Matter), and OAC 252:100-5 (Emission Inventory), shall be conducted in accordance with applicable testing or calculation procedures, modified to include back-half condensables, for the concentration of particulate matter less than 10 microns in diameter (PM₁₀). NSPS may allow reporting of only particulate matter emissions caught in the filter (obtained using Reference Method 5).

K. The permittee shall submit to the AQD a copy of all reports submitted to the EPA as required by 40 C.F.R. Part 60, 61, and 63, for all equipment constructed or operated under this permit subject to such standards. [OAC 252:100-8-6(c)(1) and OAC 252:100, Appendix Q]

SECTION IV. COMPLIANCE CERTIFICATIONS

A. No later than 30 days after each anniversary date of the issuance of the original Part 70 operating permit or alternative date as specifically identified in a subsequent Part 70 operating permit, the permittee shall submit to the AQD, with a copy to the US EPA, Region 6, a certification of compliance with the terms and conditions of this permit and of any other applicable requirements which have become effective since the issuance of this permit.

[OAC 252:100-8-6(c)(5)(A), and (D)]

B. The compliance certification shall describe the operating permit term or condition that is the basis of the certification; the current compliance status; whether compliance was continuous or intermittent; the methods used for determining compliance, currently and over the reporting period. The compliance certification shall also include such other facts as the permitting authority may require to determine the compliance status of the source.

[OAC 252:100-8-6(c)(5)(C)(i)-(v)]

C. The compliance certification shall contain a certification by a responsible official as to the results of the required monitoring. This certification shall be signed by a responsible official, and shall contain the following language: "I certify, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete."

[OAC 252:100-8-5(f) and OAC 252:100-8-6(c)(1)]

D. Any facility reporting noncompliance shall submit a schedule of compliance for emissions units or stationary sources that are not in compliance with all applicable requirements. This schedule shall include a schedule of remedial measures, including an enforceable sequence of actions with milestones, leading to compliance with any applicable requirements for which the emissions unit or stationary source is in noncompliance. This compliance schedule shall resemble and be at least as stringent as that contained in any judicial consent decree or administrative order to which the emissions unit or stationary source is subject. Any such schedule of compliance shall be supplemental to, and shall not sanction noncompliance with, the applicable requirements on which it is based, except that a compliance plan shall not be required for any noncompliance condition which is corrected within 24 hours of discovery.

[OAC 252:100-8-5(e)(8)(B) and OAC 252:100-8-6(c)(3)]

SECTION V. REQUIREMENTS THAT BECOME APPLICABLE DURING THE PERMIT TERM

The permittee shall comply with any additional requirements that become effective during the permit term and that are applicable to the facility. Compliance with all new requirements shall be certified in the next annual certification.

[OAC 252:100-8-6(c)(6)]

SECTION VI. PERMIT SHIELD

A. Compliance with the terms and conditions of this permit (including terms and conditions established for alternate operating scenarios, emissions trading, and emissions averaging, but excluding terms and conditions for which the permit shield is expressly prohibited under OAC 252:100-8) shall be deemed compliance with the applicable requirements identified and included in this permit.

[OAC 252:100-8-6(d)(1)]

B. Those requirements that are applicable are listed in the Standard Conditions and the Specific Conditions of this permit. Those requirements that the applicant requested be determined as not applicable are summarized in the Specific Conditions of this permit.

[OAC 252:100-8-6(d)(2)]

SECTION VII. ANNUAL EMISSIONS INVENTORY & FEE PAYMENT

The permittee shall file with the AQD an annual emission inventory and shall pay annual fees based on emissions inventories. The methods used to calculate emissions for inventory purposes shall be based on the best available information accepted by AQD.

[OAC 252:100-5-2.1, OAC 252:100-5-2.2, and OAC 252:100-8-6(a)(8)]

SECTION VIII. TERM OF PERMIT

A. Unless specified otherwise, the term of an operating permit shall be five years from the date of issuance. [OAC 252:100-8-6(a)(2)(A)]

B. A source's right to operate shall terminate upon the expiration of its permit unless a timely and complete renewal application has been submitted at least 180 days before the date of expiration. [OAC 252:100-8-7.1(d)(1)]

C. A duly issued construction permit or authorization to construct or modify will terminate and become null and void (unless extended as provided in OAC 252:100-8-1.4(b)) if the construction is not commenced within 18 months after the date the permit or authorization was issued, or if work is suspended for more than 18 months after it is commenced. [OAC 252:100-8-1.4(a)]

D. The recipient of a construction permit shall apply for a permit to operate (or modified operating permit) within 180 days following the first day of operation. [OAC 252:100-8-4(b)(5)]

SECTION IX. SEVERABILITY

The provisions of this permit are severable and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

[OAC 252:100-8-6 (a)(6)]

SECTION X. PROPERTY RIGHTS

A. This permit does not convey any property rights of any sort, or any exclusive privilege.

[OAC 252:100-8-6(a)(7)(D)]

B. This permit shall not be considered in any manner affecting the title of the premises upon which the equipment is located and does not release the permittee from any liability for damage to persons or property caused by or resulting from the maintenance or operation of the equipment for which the permit is issued. [OAC 252:100-8-6(c)(6)]

SECTION XI. DUTY TO PROVIDE INFORMATION

A. The permittee shall furnish to the DEQ, upon receipt of a written request and within sixty (60) days of the request unless the DEQ specifies another time period, any information that the DEQ may request to determine whether cause exists for modifying, reopening, revoking, reissuing,

terminating the permit or to determine compliance with the permit. Upon request, the permittee shall also furnish to the DEQ copies of records required to be kept by the permit.

[OAC 252:100-8-6(a)(7)(E)]

B. The permittee may make a claim of confidentiality for any information or records submitted pursuant to 27A O.S. § 2-5-105(18). Confidential information shall be clearly labeled as such and shall be separable from the main body of the document such as in an attachment.

[OAC 252:100-8-6(a)(7)(E)]

C. Notification to the AQD of the sale or transfer of ownership of this facility is required and shall be made in writing within thirty (30) days after such sale or transfer.

[Oklahoma Clean Air Act, 27A O.S. § 2-5-112(G)]

SECTION XII. REOPENING, MODIFICATION & REVOCATION

A. The permit may be modified, revoked, reopened and reissued, or terminated for cause. Except as provided for minor permit modifications, the filing of a request by the permittee for a permit modification, revocation and reissuance, termination, notification of planned changes, or anticipated noncompliance does not stay any permit condition.

[OAC 252:100-8-6(a)(7)(C) and OAC 252:100-8-7.2(b)]

B. The DEQ will reopen and revise or revoke this permit prior to the expiration date in the following circumstances:

[OAC 252:100-8-7.3 and OAC 252:100-8-7.4(a)(2)]

- (1) Additional requirements under the Clean Air Act become applicable to a major source category three or more years prior to the expiration date of this permit. No such reopening is required if the effective date of the requirement is later than the expiration date of this permit.
- (2) The DEQ or the EPA determines that this permit contains a material mistake or that the permit must be revised or revoked to assure compliance with the applicable requirements.
- (3) The DEQ or the EPA determines that inaccurate information was used in establishing the emission standards, limitations, or other conditions of this permit. The DEQ may revoke and not reissue this permit if it determines that the permittee has submitted false or misleading information to the DEQ.
- (4) DEQ determines that the permit should be amended under the discretionary reopening provisions of OAC 252:100-8-7.3(b).

C. The permit may be reopened for cause by EPA, pursuant to the provisions of OAC 100-8-7.3(d).

[OAC 100-8-7.3(d)]

D. The permittee shall notify AQD before making changes other than those described in Section XVIII (Operational Flexibility), those qualifying for administrative permit amendments, or those defined as an Insignificant Activity (Section XVI) or Trivial Activity (Section XVII). The notification should include any changes which may alter the status of a “grandfathered source,” as defined under AQD rules. Such changes may require a permit modification.

[OAC 252:100-8-7.2(b) and OAC 252:100-5-1.1]

E. Activities that will result in air emissions that exceed the trivial/insignificant levels and that are not specifically approved by this permit are prohibited. [OAC 252:100-8-6(c)(6)]

SECTION XIII. INSPECTION & ENTRY

A. Upon presentation of credentials and other documents as may be required by law, the permittee shall allow authorized regulatory officials to perform the following (subject to the permittee's right to seek confidential treatment pursuant to 27A O.S. Supp. 1998, § 2-5-105(17) for confidential information submitted to or obtained by the DEQ under this section):

- (1) enter upon the permittee's premises during reasonable/normal working hours where a source is located or emissions-related activity is conducted, or where records must be kept under the conditions of the permit;
- (2) have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit;
- (3) inspect, at reasonable times and using reasonable safety practices, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit; and
- (4) as authorized by the Oklahoma Clean Air Act, sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the permit.

[OAC 252:100-8-6(c)(2)]

SECTION XIV. EMERGENCIES

A. Any exceedance resulting from an emergency shall be reported to AQD promptly but no later than 4:30 p.m. on the next working day after the permittee first becomes aware of the exceedance. This notice shall contain a description of the emergency, the probable cause of the exceedance, any steps taken to mitigate emissions, and corrective actions taken.

[OAC 252:100-8-6 (a)(3)(C)(iii)(I) and (IV)]

B. Any exceedance that poses an imminent and substantial danger to public health, safety, or the environment shall be reported to AQD as soon as is practicable; but under no circumstance shall notification be more than 24 hours after the exceedance. [OAC 252:100-8-6(a)(3)(C)(iii)(II)]

C. An "emergency" means any situation arising from sudden and reasonably unforeseeable events beyond the control of the source, including acts of God, which situation requires immediate corrective action to restore normal operation, and that causes the source to exceed a technology-based emission limitation under this permit, due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventive maintenance, careless or improper operation, or operator error. [OAC 252:100-8-2]

D. The affirmative defense of emergency shall be demonstrated through properly signed, contemporaneous operating logs or other relevant evidence that: [OAC 252:100-8-6 (e)(2)]

- (1) an emergency occurred and the permittee can identify the cause or causes of the emergency;

- (2) the permitted facility was at the time being properly operated;
- (3) during the period of the emergency the permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards or other requirements in this permit.

E. In any enforcement proceeding, the permittee seeking to establish the occurrence of an emergency shall have the burden of proof. [OAC 252:100-8-6(e)(3)]

F. Every written report or document submitted under this section shall be certified as required by Section III (Monitoring, Testing, Recordkeeping & Reporting), Paragraph F. [OAC 252:100-8-6(a)(3)(C)(iv)]

SECTION XV. RISK MANAGEMENT PLAN

The permittee, if subject to the provision of Section 112(r) of the Clean Air Act, shall develop and register with the appropriate agency a risk management plan by June 20, 1999, or the applicable effective date. [OAC 252:100-8-6(a)(4)]

SECTION XVI. INSIGNIFICANT ACTIVITIES

Except as otherwise prohibited or limited by this permit, the permittee is hereby authorized to operate individual emissions units that are either on the list in Appendix I to OAC Title 252, Chapter 100, or whose actual calendar year emissions do not exceed any of the limits below. Any activity to which a State or Federal applicable requirement applies is not insignificant even if it meets the criteria below or is included on the insignificant activities list.

- (1) 5 tons per year of any one criteria pollutant.
- (2) 2 tons per year for any one hazardous air pollutant (HAP) or 5 tons per year for an aggregate of two or more HAP's, or 20 percent of any threshold less than 10 tons per year for single HAP that the EPA may establish by rule.

[OAC 252:100-8-2 and OAC 252:100, Appendix I]

SECTION XVII. TRIVIAL ACTIVITIES

Except as otherwise prohibited or limited by this permit, the permittee is hereby authorized to operate any individual or combination of air emissions units that are considered inconsequential and are on the list in Appendix J. Any activity to which a State or Federal applicable requirement applies is not trivial even if included on the trivial activities list.

[OAC 252:100-8-2 and OAC 252:100, Appendix J]

SECTION XVIII. OPERATIONAL FLEXIBILITY

A. A facility may implement any operating scenario allowed for in its Part 70 permit without the need for any permit revision or any notification to the DEQ (unless specified otherwise in the permit). When an operating scenario is changed, the permittee shall record in a log at the facility the scenario under which it is operating. [OAC 252:100-8-6(a)(10) and (f)(1)]

B. The permittee may make changes within the facility that:

- (1) result in no net emissions increases,
- (2) are not modifications under any provision of Title I of the federal Clean Air Act, and
- (3) do not cause any hourly or annual permitted emission rate of any existing emissions unit to be exceeded;

provided that the facility provides the EPA and the DEQ with written notification as required below in advance of the proposed changes, which shall be a minimum of seven (7) days, or twenty four (24) hours for emergencies as defined in OAC 252:100-8-6 (e). The permittee, the DEQ, and the EPA shall attach each such notice to their copy of the permit. For each such change, the written notification required above shall include a brief description of the change within the permitted facility, the date on which the change will occur, any change in emissions, and any permit term or condition that is no longer applicable as a result of the change. The permit shield provided by this permit does not apply to any change made pursuant to this paragraph. [OAC 252:100-8-6(f)(2)]

SECTION XIX. OTHER APPLICABLE & STATE-ONLY REQUIREMENTS

A. The following applicable requirements and state-only requirements apply to the facility unless elsewhere covered by a more restrictive requirement:

- (1) Open burning of refuse and other combustible material is prohibited except as authorized in the specific examples and under the conditions listed in the Open Burning Subchapter. [OAC 252:100-13]
- (2) No particulate emissions from any fuel-burning equipment with a rated heat input of 10 MMBTUH or less shall exceed 0.6 lb/MMBTU. [OAC 252:100-19]
- (3) For all emissions units not subject to an opacity limit promulgated under 40 C.F.R., Part 60, NSPS, no discharge of greater than 20% opacity is allowed except for: [OAC 252:100-25]
 - (a) Short-term occurrences which consist of not more than one six-minute period in any consecutive 60 minutes, not to exceed three such periods in any consecutive 24 hours. In no case shall the average of any six-minute period exceed 60% opacity;
 - (b) Smoke resulting from fires covered by the exceptions outlined in OAC 252:100-13-7;
 - (c) An emission, where the presence of uncombined water is the only reason for failure to meet the requirements of OAC 252:100-25-3(a); or
 - (d) Smoke generated due to a malfunction in a facility, when the source of the fuel producing the smoke is not under the direct and immediate control of the facility and the immediate constriction of the fuel flow at the facility would produce a hazard to life and/or property.
- (4) No visible fugitive dust emissions shall be discharged beyond the property line on which the emissions originate in such a manner as to damage or to interfere with the use of

adjacent properties, or cause air quality standards to be exceeded, or interfere with the maintenance of air quality standards. [OAC 252:100-29]

- (5) No sulfur oxide emissions from new gas-fired fuel-burning equipment shall exceed 0.2 lb/MMBTU. No existing source shall exceed the listed ambient air standards for sulfur dioxide. [OAC 252:100-31]
- (6) Volatile Organic Compound (VOC) storage tanks built after December 28, 1974, and with a capacity of 400 gallons or more storing a liquid with a vapor pressure of 1.5 psia or greater under actual conditions shall be equipped with a permanent submerged fill pipe or with a vapor-recovery system. [OAC 252:100-37-15(b)]
- (7) All fuel-burning equipment shall at all times be properly operated and maintained in a manner that will minimize emissions of VOCs. [OAC 252:100-37-36]

SECTION XX. STRATOSPHERIC OZONE PROTECTION

A. The permittee shall comply with the following standards for production and consumption of ozone-depleting substances: [40 CFR 82, Subpart A]

- (1) Persons producing, importing, or placing an order for production or importation of certain class I and class II substances, HCFC-22, or HCFC-141b shall be subject to the requirements of §82.4;
- (2) Producers, importers, exporters, purchasers, and persons who transform or destroy certain class I and class II substances, HCFC-22, or HCFC-141b are subject to the recordkeeping requirements at §82.13; and
- (3) Class I substances (listed at Appendix A to Subpart A) include certain CFCs, Halons, HBFCs, carbon tetrachloride, trichloroethane (methyl chloroform), and bromomethane (Methyl Bromide). Class II substances (listed at Appendix B to Subpart A) include HCFCs.

B. If the permittee performs a service on motor (fleet) vehicles when this service involves an ozone-depleting substance refrigerant (or regulated substitute substance) in the motor vehicle air conditioner (MVAC), the permittee is subject to all applicable requirements. Note: The term “motor vehicle” as used in Subpart B does not include a vehicle in which final assembly of the vehicle has not been completed. The term “MVAC” as used in Subpart B does not include the air-tight sealed refrigeration system used as refrigerated cargo, or the system used on passenger buses using HCFC-22 refrigerant. [40 CFR 82, Subpart B]

C. The permittee shall comply with the following standards for recycling and emissions reduction except as provided for MVACs in Subpart B: [40 CFR 82, Subpart F]

- (1) Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to § 82.156;
- (2) Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to § 82.158;

- (3) Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to § 82.161;
- (4) Persons disposing of small appliances, MVACs, and MVAC-like appliances must comply with record-keeping requirements pursuant to § 82.166;
- (5) Persons owning commercial or industrial process refrigeration equipment must comply with leak repair requirements pursuant to § 82.158; and
- (6) Owners/operators of appliances normally containing 50 or more pounds of refrigerant must keep records of refrigerant purchased and added to such appliances pursuant to § 82.166.

SECTION XXI. TITLE V APPROVAL LANGUAGE

A. DEQ wishes to reduce the time and work associated with permit review and, wherever it is not inconsistent with Federal requirements, to provide for incorporation of requirements established through construction permitting into the Source's Title V permit without causing redundant review. Requirements from construction permits may be incorporated into the Title V permit through the administrative amendment process set forth in OAC 252:100-8-7.2(a) only if the following procedures are followed:

- (1) The construction permit goes out for a 30-day public notice and comment using the procedures set forth in 40 C.F.R. § 70.7(h)(1). This public notice shall include notice to the public that this permit is subject to EPA review, EPA objection, and petition to EPA, as provided by 40 C.F.R. § 70.8; that the requirements of the construction permit will be incorporated into the Title V permit through the administrative amendment process; that the public will not receive another opportunity to provide comments when the requirements are incorporated into the Title V permit; and that EPA review, EPA objection, and petitions to EPA will not be available to the public when requirements from the construction permit are incorporated into the Title V permit.
- (2) A copy of the construction permit application is sent to EPA, as provided by 40 CFR § 70.8(a)(1).
- (3) A copy of the draft construction permit is sent to any affected State, as provided by 40 C.F.R. § 70.8(b).
- (4) A copy of the proposed construction permit is sent to EPA for a 45-day review period as provided by 40 C.F.R. § 70.8(a) and (c).
- (5) The DEQ complies with 40 C.F.R. § 70.8(c) upon the written receipt within the 45-day comment period of any EPA objection to the construction permit. The DEQ shall not issue the permit until EPA's objections are resolved to the satisfaction of EPA.
- (6) The DEQ complies with 40 C.F.R. § 70.8(d).
- (7) A copy of the final construction permit is sent to EPA as provided by 40 CFR § 70.8(a).
- (8) The DEQ shall not issue the proposed construction permit until any affected State and EPA have had an opportunity to review the proposed permit, as provided by these permit conditions.
- (9) Any requirements of the construction permit may be reopened for cause after incorporation into the Title V permit by the administrative amendment process, by DEQ as provided in OAC 252:100-8-7.3(a), (b), and (c), and by EPA as provided in 40 C.F.R. § 70.7(f) and (g).

- (10) The DEQ shall not issue the administrative permit amendment if performance tests fail to demonstrate that the source is operating in substantial compliance with all permit requirements.

B. To the extent that these conditions are not followed, the Title V permit must go through the Title V review process.

SECTION XXII. CREDIBLE EVIDENCE

For the purpose of submitting compliance certifications or establishing whether or not a person has violated or is in violation of any provision of the Oklahoma implementation plan, nothing shall preclude the use, including the exclusive use, of any credible evidence or information, relevant to whether a source would have been in compliance with applicable requirements if the appropriate performance or compliance test or procedure had been performed.

[OAC 252:100-43-6]



NSR CONSTRUCTION PERMIT

AIR QUALITY DIVISION
STATE OF OKLAHOMA
DEPARTMENT OF ENVIRONMENTAL QUALITY
707 NORTH ROBINSON, SUITE 4100
P.O. BOX 1677
OKLAHOMA CITY, OKLAHOMA 73101-1677

Permit No. 2016-1066-C (M-2) (PSD)

Keyera Energy, Inc.,

having complied with the requirements of the law, is hereby granted permission to construct the Wildhorse Terminal at Section 22, Township 17N, Range 5E, Lincoln County, Oklahoma, subject to the Standard Conditions dated June 21, 2016, and the Specific Conditions both of which are attached.

In the absence of construction commencement, this permit shall expire 18 months from the issuance date, as authorized under Section VIII of the Standard Conditions.

DRAFT

Kendal Stegmann, Division Director
AIR QUALITY DIVISION

Date

Department of Environmental Quality (DEQ)
Air Quality Division (AQD)
Acronym List
11-21-2024

| | | | |
|----------------|---|------------------------|--|
| ACFM | Actual Cubic Feet per Minute | GACT | Generally Achievable Control Technology |
| AD | Applicability Determination | GAL | Gallon (gal) |
| AFRC | Air-to-Fuel Ratio Controller | GDF | Gasoline Dispensing Facility |
| API | American Petroleum Institute | GEP | Good Engineering Practice |
| ASTM | American Society for Testing and Materials | GHG | Greenhouse Gases |
| AVO | Audio, Visual, or Olfactory | GR | Grain(s) (gr) |
| BACT | Best Available Control Technology | H₂CO | Formaldehyde |
| BAE | Baseline Actual Emissions | H₂S | Hydrogen Sulfide |
| BBL | Barrel(s) | HAP | Hazardous Air Pollutants |
| BHP | Brake Horsepower (bhp) | HC | Hydrocarbon |
| BTEX | Benzene, Toluene, Ethylbenzene, Xylene | HCFC | Hydrochlorofluorocarbon |
| BTU | British thermal unit (Btu) | HFR | Horizontal Fixed Roof |
| C&E | Compliance and Enforcement | HON | Hazardous Organic NESHAP |
| CAA | Clean Air Act | HP | Horsepower (hp) |
| CAM | Compliance Assurance Monitoring | HR | Hour (hr) |
| CAS | Chemical Abstract Service | I&M | Inspection and Maintenance |
| CAAA | Clean Air Act Amendments | IBR | Incorporation by Reference |
| CC | Catalytic Converter | ICE | Internal Combustion Engine |
| CCR | Continuous Catalyst Regeneration | LAER | Lowest Achievable Emission Rate |
| CD | Consent Decree | LB | Pound(s) [Mass] (lb, lbs, lbm) |
| CEM | Continuous Emission Monitor | LB/HR | Pound(s) per Hour (lb/hr) |
| CFC | Chlorofluorocarbon | LDAR | Leak Detection and Repair |
| CFR | Code of Federal Regulations | LNG | Liquefied Natural Gas |
| CI | Compression Ignition | LT | Long Ton(s) (metric) |
| CNG | Compressed Natural Gas | LPE | Legally and Practicably Enforceable |
| CO | Carbon Monoxide or Consent Order | M | Thousand (Roman Numeral) |
| COA | Capable of Accommodating | MAAC | Maximum Acceptable Ambient Concentration |
| COM | Continuous Opacity Monitor | MACT | Maximum Achievable Control Technology |
| D | Day | MM | Prefix used for Million (Thousand-Thousand) |
| DEF | Diesel Exhaust Fluid | MMBTU | Million British Thermal Units (MMBtu) |
| DG | Demand Growth | MMBTUH | Million British Thermal Units per Hour (MMBtu/hr) |
| DSCF | Dry Standard (At Standard Conditions) Cubic Foot (Feet) | MMSCF | Million Standard Cubic Feet (MMscf) |
| EGU | Electric Generating Unit | MMSCFD | Million Standard Cubic Feet per Day |
| EI | Emissions Inventory | MSDS | Material Safety Data Sheet |
| EPA | Environmental Protection Agency | MWC | Municipal Waste Combustor |
| ESP | Electrostatic Precipitator | MWe | Megawatt Electrical |
| EUG | Emissions Unit Group | NA | Nonattainment |
| EUSGU | Electric Utility Steam Generating Unit | NAAQS | National Ambient Air Quality Standards |
| FCE | Full Compliance Evaluation | NAICS | North American Industry Classification System |
| FCCU | Fluid Catalytic Cracking Unit | NESHAP | National Emission Standards for Hazardous Air Pollutants |
| FEL | Federally Enforceable Limit(s) | | |
| FIP | Federal Implementation Plan | | |
| FR | Federal Register | | |

| | | | |
|-------------------------|--|-------------------------|--|
| NH₃ | Ammonia | RFG | Refinery Fuel Gas |
| NMHC | Non-methane Hydrocarbon | RICE | Reciprocating Internal Combustion Engine |
| NGL | Natural Gas Liquids | RO | Responsible Official |
| NO₂ | Nitrogen Dioxide | ROAT | Regional Office at Tulsa |
| NO_x | Nitrogen Oxides | RVP | Reid Vapor Pressure |
| NOI | Notice of Intent | | |
| NSCR | Non-Selective Catalytic Reduction | SCC | Source Classification Code |
| NSPS | New Source Performance Standards | SCF | Standard Cubic Foot |
| NSR | New Source Review | SCFD | Standard Cubic Feet per Day |
| | | SCFM | Standard Cubic Feet per Minute |
| O₃ | Ozone | SCR | Selective Catalytic Reduction |
| O&G | Oil and Gas | SER | Significant Emission Rate |
| O&M | Operation and Maintenance | SI | Spark Ignition |
| O&NG | Oil and Natural Gas | SIC | Standard Industrial Classification |
| OAC | Oklahoma Administrative Code | SIP | State Implementation Plan |
| OC | Oxidation Catalyst | SINCR | Selective Non-Catalytic Reduction |
| OGI | Optical Gas Imaging | SO₂ | Sulfur Dioxide |
| | | SO_x | Sulfur Oxides |
| PAH | Polycyclic Aromatic Hydrocarbons | SOP | Standard Operating Procedure |
| PAE | Projected Actual Emissions | SRU | Sulfur Recovery Unit |
| PAL | Plant-wide Applicability Limit | | |
| Pb | Lead | T | Tons |
| PBR | Permit by Rule | TAC | Toxic Air Contaminant |
| PCB | Polychlorinated Biphenyls | TEG | Triethylene Glycol |
| PCE | Partial Compliance Evaluation | THC | Total Hydrocarbons |
| PEA | Portable Emissions Analyzer | TPY | Tons per Year |
| PFAS | Per- and Polyfluoroalkyl Substance | TRS | Total Reduced Sulfur |
| PM | Particulate Matter | TSP | Total Suspended Particulates |
| PM_{2.5} | Particulate Matter with an Aerodynamic Diameter <= 2.5 Micrometers | TV | Title V of the Federal Clean Air Act |
| PM₁₀ | Particulate Matter with an Aerodynamic Diameter <= 10 Micrometers | µg/m³ | Micrograms per Cubic Meter |
| POM | Particulate Organic Matter or Polycyclic Organic Matter | US EPA | U. S. Environmental Protection Agency |
| ppb | Parts per Billion | VFR | Vertical Fixed Roof |
| ppm | Parts per Million | VMT | Vehicle Miles Traveled |
| ppmv | Parts per Million Volume | VOC | Volatile Organic Compound |
| ppmvd | Parts per Million Dry Volume | VOL | Volatile Organic Liquid |
| PSD | Prevention of Significant Deterioration | VRT | Vapor Recovery Tower |
| psi | Pounds per Square Inch | VRU | Vapor Recovery Unit |
| psia | Pounds per Square Inch Absolute | | |
| psig | Pounds per Square Inch Gage | YR | Year |
| | | | |
| RACT | Reasonably Available Control Technology | 2SLB | 2-Stroke Lean Burn |
| RATA | Relative Accuracy Test Audit | 4SLB | 4-Stroke Lean Burn |
| RAP | Regulated Air Pollutant or Reclaimed Asphalt Pavement | 4SRB | 4-Stroke Rich Burn |

Keyera Energy, Inc.
Attn: Mr. Michael Fuentes
10613 West Sam Houston Pkwy. N, Suite 160
Houston, TX 77064

SUBJECT: Permit No. **2016-1066-C (M-2) PSD**
Keyera Energy, Inc.
Wildhorse Terminal
AQD Facility ID No. 16676
Section 22, Township 17N, Range 5E, Lincoln County, Oklahoma

Dear Mr. Fuentes:

Enclosed is the permit authorizing construction of the referenced facility. Please note that this permit is issued subject to the certain standards and specific conditions, which are attached. These conditions must be carefully followed since they define the limits of the permit and will be confirmed by periodic inspections.

Also note that you are required to annually submit an emissions inventory for this facility. An emissions inventory must be completed through DEQ's electronic reporting system by April 1st of every year. Any questions concerning the submittal process should be referred to the Emissions Inventory Staff at (405) 702-4100.

Thank you for your cooperation. If you have any questions, please refer to the permit number above and contact me or Joseph Wills, the permit writer, at Joseph.Wills@deq.ok.gov or (405) 702-4100.

Sincerely,

DRAFT

Phillip Fielder, P.E.
Chief Engineer
AIR QUALITY DIVISION

Enclosures

Keyera Energy, Inc.
Attn: Mr. Michael Fuentes
10613 West Sam Houston Pkwy. N, Suite 160
Houston, TX 77064

SUBJECT: Permit No. **2016-1066-C (M-2) PSD**
Keyera Energy, Inc.
Wildhorse Terminal
AQD Facility ID No. 16676
Section 22, Township 17N, Range 5E, Lincoln County, Oklahoma

Dear Mr. Fuentes:

Air Quality has received the permit application for the referenced facility and completed initial review. This application has been determined to be a Tier II application. In accordance with 27A O.S. 2-14-301 and 302 and OAC 252:4-7-13(c), the enclosed draft permit is now ready for public review. The requirements for public review of the application and draft permit include the following steps, which **you** must accomplish:

1. Publish at least one legal notice (one day) for the Notice of Tier II Draft Permit in at least one newspaper of general circulation within the county where the facility is located (Instructions enclosed);
2. Submit sample notice and provide date of publication to **AQD 5 days prior to notice publishing**;
3. Provide for public review, for a period of 30 days following the date of the newspaper announcement, a copy of the application and draft permit at a convenient location (preferentially at a public location) within the county of the facility;
4. Send AQD a signed affidavit of publication for the notice(s) from Item #1 above within 20 days of publication of the draft permit. Any additional comments or requested changes you have for the draft permit or the application should be submitted within 30 days of publication.

Thank you for your cooperation. If you have any questions, please refer to the permit number above and contact me or the permit writer at (405) 702-4100.

Sincerely,

Phillip Fielder, P.E.
Chief Engineer
AIR QUALITY DIVISION

NOTICE OF DRAFT PERMIT TIER II or TIER III AIR QUALITY PERMIT APPLICATION

APPLICANT RESPONSIBILITIES

Permit applicants are required to give public notice that a Tier II or Tier III draft permit has been prepared by DEQ. The notice must be published in one newspaper local to the site or facility. Note that if either the applicant or the public requests a public meeting, this must be arranged by the DEQ.

1. Complete the public notice using the samples provided by AQD below. Please use the version applicable to the requested permit action;
Version 1 – Traditional NSR process for a construction permit
Version 2 – Enhanced NSR process for a construction permit
Version 3 – initial Title V (Part 70 Source) operating permit, Title V operating permit renewal, Significant Modification to a Title V operating permit, and any Title V operating permit modification incorporating a construction permit that followed Traditional NSR process
2. Determine appropriate newspaper local to facility for publishing;
3. Submit sample notice and provide date of publication to AQD 5 days prior to notice publishing;
4. Upon publication, a signed affidavit of publication must be obtained from the newspaper and sent to AQD.

REQUIRED CONTENT (27A O.S. § 2-14-302 and OAC 252:4-7-13(c))

1. A statement that a Tier II or Tier III draft permit has been prepared by DEQ;
2. Name and address of the applicant;
3. Name, address, driving directions, legal description and county of the site or facility;
4. The type of permit or permit action being sought;
5. A description of activities to be regulated, including an estimate of emissions from the facility;
6. Location(s) where the application and draft permit may be reviewed (a location in the county where the site/facility is located must be included);
7. Name, address, and telephone number of the applicant and DEQ contacts;
8. Any additional information required by DEQ rules or deemed relevant by applicant;
9. A 30-day opportunity to request a formal public meeting on the draft permit.

SAMPLE NOTICE (*Italicized print is to be filled in by the applicant.*):

Version 1 – For those using the Traditional NSR Process for a construction permit application review

DEQ NOTICE OF TIER ...II or III... DRAFT PERMIT

A Tier ...II or III... application for an air quality *...type of permit or permit action being sought (e.g., construction permit for a new major facility or construction permit for a modification at an existing major facility)...* has been filed with the Oklahoma Department of Environmental Quality (DEQ) by applicant, *...name and address.*

The applicant requests approval to *...brief description of purpose of application...* at the *...site/facility name ... [proposed to be] located at ...physical address (if any), driving directions, and legal description including county....*

In response to the application, DEQ has prepared a draft construction permit [modification] (Permit Number: *...xxxx-xxxx-x...*), which may be reviewed at *...locations (one must be in the county where the site/facility is located)...* or at the Air Quality Division's main office (see address below). The draft permit is also available for review under Permits for Public Review on the DEQ Web Page: <http://www.deq.ok.gov/>

This draft permit would authorize the facility to emit the following regulated pollutants: (*list each pollutant and amounts in tons per year (TPY)*). [For facility modifications only, either add the phrase: **, which represents (*identify the emissions change involved in the modification*)., or add the sentence: **The modification will not result in a change in emissions.**] [For PSD permits only, add: **The project will consume the following increment levels: (*list the amount of increment consumption for each pollutant in ug/m³*).**]**

The public comment period ends 30 days after the date of publication of this notice. Any person may submit written comments concerning the draft permit to the Air Quality Division contact listed below or as directed through the corresponding online notice. [Modifications only, add: **Only those issues relevant to the proposed modification(s) are open for comment.] A public meeting on the draft permit [modification] may also be requested in writing at the same address. Note that all public meetings are to be arranged and conducted by DEQ staff.**

Information on all permit actions including draft permits, proposed permits, final issued permits and applicable review timelines are available in the Air Quality section of the DEQ Web page: <http://www.deq.ok.gov/>.

For additional information, contact *...names, addresses and telephone numbers of contact persons for the applicant*, or contact DEQ at: Chief Engineer, Air Quality Division, 707 N. Robinson, Suite 4100, P.O. Box 1677, Oklahoma City, OK, 73101-1677. Phone No. (405) 702-4100.