



October 13, 2023

Mr. Matthew Jalali
Alon Bakersfield Refining
6451 Rosedale Hwy
Bakersfield, CA 93308

Re: Proposed ATC / Certificate of Conformity (Significant Mod)
Facility Number: S-34
Project Number: S-1230708

Dear Mr. Jalali:

Enclosed for your review is the District's analysis of an application for Authority to Construct for the facility identified above. You requested that a Certificate of Conformity with the procedural requirements of 40 CFR Part 70 be issued with this project. This project is for the installation of a new railcar organic liquid loading operation.

The notice of preliminary decision for this project has been posted on the District's website (www.valleyair.org). After addressing all comments made during the 30-day public notice and the 45-day EPA comment periods, the District intends to issue the Authority to Construct with a Certificate of Conformity. Please submit your comments within the 30-day public comment period, as specified in the enclosed public notice. Prior to operating with modifications authorized by the Authority to Construct, the facility must submit an application to modify the Title V permit as an administrative amendment, in accordance with District Rule 2520, Section 11.5.

If you have any questions, please contact Mr. Errol Villegas, Permit Services Manager, at (559) 230-5900.

Thank you for your cooperation in this matter.

Sincerely,



Brian Clements
Director of Permit Services

Enclosures

cc: Courtney Graham, CARB (w/enclosure) via email
cc: Gerardo Rios, EPA (w/enclosure) via EPS

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San Joaquin Valley Air Pollution Control District

Authority to Construct Application Review

Railcar Organic Liquid Loading

Facility Name:	Alon Bakersfield Refining	Date:	October 13, 2023
Mailing Address:	6451 Rosedale Hwy Bakersfield, CA 93308	Engineer:	Jesse A. Garcia
		Lead Engineer:	Derek Fukuda
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Application #:	S-34-53-0		
Project #:	S-1230708		
Deemed Complete:	March 27, 2023		

I. Proposal

Alon Bakersfield Refining (Alon) has requested an Authority to Construct (ATC) permit for a new organic liquid (naphtha) truck-to-railcar transloading operation that will consist of a loading rack that is served by a vapor balance system.

Alon produces renewable naphtha as a co-product of renewable diesel. Alon has received ATC S-33-451-0 to load the renewable naphtha onto tanker trucks for delivery to customers and ATC S-33-439-1 to load renewable naphtha onto railcars. To provide the flexibility to deliver the various organic liquid products (e.g. renewable naphtha, propane, butane, and diesel) by railcar while the modifications authorized by S-33-439-1 are completed, Alon is proposing to construct a transloading operation at the facility that will allow the tanker trucks to load railcars.

Alon has received ATC S-34-52-0 for a similar operation to be used for the transfer of renewable diesel. The proposal in this project is separate from the operation authorized under ATC S-34-52-0 and will be issued a new ATC (S-34-53-0).

Note that facilities S-33 (Areas 1 & 2), S-34 (Area 3), and S-3303 (Shipping Terminal) are part of the same stationary source.

Alon received their Title V Permit on January 31, 2003. This modification can be classified as a Title V significant modification pursuant to Rule 2520, and can be processed with a Certificate of Conformity (COC). Since the facility has specifically requested that this project be processed in that manner, the 45-day EPA comment period will be satisfied prior to the issuance of the Authority to Construct. Alon must apply to administratively amend their Title V permit.

II. Applicable Rules

Rule 2201	New and Modified Stationary Source Review Rule (8/15/19)
Rule 2410	Prevention of Significant Deterioration (6/16/11)
Rule 2520	Federally Mandated Operating Permits (8/15/19)
Rule 4001	New Source Performance Standards (4/14/99)
Rule 4002	National Emissions Standards for Hazardous Air Pollutants (5/20/04)
Rule 4101	Visible Emissions (2/17/05)
Rule 4102	Nuisance (12/17/92)
Rule 4455	Components at Petroleum Refineries, Gas Liquids, Processing Facilities, and Chemical Plants (6/15/23)
Rule 4624	Transfer of Organic Liquids (6/15/23)
CH&SC 41700	Health Risk Assessment
CH&SC 42301.6	School Notice

Public Resources Code 21000-21177: California Environmental Quality Act (CEQA)
California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387: CEQA Guidelines

III. Project Location

The facility is located at Area 3 (S-34) at 3663 Gibson Street in Bakersfield, CA. The equipment is not located within 1,000 feet of the outer boundary of a K-12 school. Therefore, the public notification requirement of California Health and Safety Code 42301.6 is not applicable to this project.

IV. Process Description

Tanker trucks will be loaded at the existing truck loading operations permitted under S-33-451-0 which is served by a vapor control system.

The tanker trucks will then be driven to an existing rail spur in Area 3 of the facility (S-34), which is located approximately 1¼ miles northeast of the S-33 facility. Railcars will be loaded from the tanker trucks via a loading rack using bottom loading or top loading with drop tubes which will be served by a vapor balance system. See process flow diagram in Appendix B.

V. Equipment Listing

S-34-53-0: ORGANIC LIQUID TRANSLOADING OPERATION FROM TRUCK TO RAILCAR
SERVED BY VAPOR BALANCE SYSTEM

VI. Emission Control Technology Evaluation

VOC emissions from railcar loading of organic liquids result from the vapors that are displaced from the railcars and from the losses from the disconnections of the loading lines.

Railcar loading will be done through a bottom loading or top loading system that uses submerged pipes. The railcar vent will be vapor balanced to the tanker truck to minimize the release of vapors during the transloading process by transferring vapors in the railcar vessel being filled back to the truck tanker vessel. The couplers used to connect the loading operation will be dry-break couplers to minimize dripping losses.

The permittee has committed to using trucks for transloading that are tested annually pursuant to EPA Method 27, which is the same test method required for gasoline trucks used at a loading rack subject to NSPS Subpart XX (Standards of Performance for Bulk Gasoline Terminals). Pursuant to AP-42 Chapter 5.2 (Transportation and Marketing of Petroleum Liquids), a collection efficiency of 98.7 percent should be assumed for trucks passing the NSPS-level annual test, so the applicant's proposed 98.7% collection efficiency used for the calculations is conservative.

The following condition will be added to the proposed ATC to support this assumption:

- No delivery vessel shall be used or operated unless it is vapor tight. The test method to determine vapor tightness of delivery vessels owned or operated by this facility shall be EPA Method 27. [District Rule 2201]

VII. General Calculations

A. Assumptions

- There are only potential VOC emissions from this operation, which will be from: (a) the fugitive emissions from the components, (b) loading losses from the loading of liquids, and (c) emissions resulting from spillage during disconnections.
- Capacity of each tanker truck: 7,224 gallons (172 bbl) (Applicant)
- Maximum tanker trucks unloaded per day: 21 trucks/day (Applicant)
- Maximum throughput:
 - 3,612 bbl/day (21 trucks/day x 172 bbl/truck) = 151,704 gallons/day (Applicant)
 - 440,664 bbl/yr = 18,507,888 gallons/yr (Applicant)
- There are two liquid line disconnects per loading event (one at the railcar and one at the truck) (Applicant)
- Liquid line disconnections will be limited to 42 per day (21 trucks/day x 2 disconnections/truck) and 5,124 per year (2,562 trucks/year x 2 disconnects/truck) (Applicant)
- Maximum TVP of naphtha: 2.8 psia at 68 F (based on lab analysis of RVP)
- Density of naphtha: 5.68 lb/gallon (based on lab analysis of API gravity)
- Molecular weight of naphtha: 80 lb/lb-mole for jet naphtha per AP-42 Table 7.1-2
- Temperature of bulk liquid loaded = 527.67 R (equivalent to 68 F which is the average temperature of Bakersfield)
- Railcar loading uses bottom loading system or top-loading with drop tubes (Applicant)
- Liquid drainage per disconnect: 3.2 mL (dry break connectors) (Applicant)
- There is no liquid drainage from vapor balance line disconnects

- Vapor balance control efficiency: 98.7% per AP-42 Chapter 5.2-5 for trucks passing the NSPS-level annual test and proposed by applicant¹
- To streamline emission calculations, PM_{2.5} emissions are assumed to be equal to PM₁₀ emissions.

B. Emission Factors

Loading Emissions:

The loading loss emission factor is calculated using Equation 1 from AP-42, Chapter 5.2 (Transportation and Marketing of Petroleum Liquids).

Uncontrolled emissions from loading organic liquid can be estimated using the following expression:

$$\begin{aligned} L_L &= \text{Loading losses, lb/1000 gallons of liquid loaded} \\ &= 12.46 \cdot \text{SPM}/T \end{aligned} \quad (\text{Equation 1})$$

Where,

$$\begin{aligned} S &= \text{Saturation factor} = 1.0 \text{ for submerged loading, vapor balance (Table 5.2-1)} \\ P &= \text{True vapor pressure of liquid loaded} = 2.8 \text{ psia (see Assumptions)} \\ M &= \text{Molecular weight of vapors} = 5.68 \text{ lb/gallon (see Assumptions)} \\ T &= \text{Temperature of bulk liquid loaded} = 527.67 \text{ R (see Assumptions)} \end{aligned}$$

$$\begin{aligned} L_L &= \text{Loading losses, lb/1000 gallons of liquid loaded} \\ &= 12.46 \cdot \text{SPM}/T \\ &= 12.46 (1.0)(2.80 \text{ psia})(80 \text{ lb/lb-mole})/527.67 \text{ R} \\ &= 5.2955 \text{ lb-VOC/1,000 gal} \end{aligned}$$

Emissions from controlled loading operations can be calculated by multiplying the uncontrolled emission rate calculated in Equation 1 by an overall reduction efficiency term:

$$\text{Controlled Loading Losses} = (L_L)(1 - \text{eff}/100)$$

$$\text{eff} = \text{Overall reduction efficiency, 98.7\% (see Assumptions)}$$

$$\begin{aligned} \text{Controlled Loading Losses} &= (L_L)(1 - \text{eff}/100) \\ &= (5.2955 \text{ lb-VOC/1,000 gal})(1 - 0.987) \\ &= 0.0688 \text{ lb-VOC/1,000 gal} \end{aligned}$$

¹ AP-42, Chapter 5.2, Page 6 documents that the appropriate collection efficiency for trucks that pass the NSPS-level annual test is 98.7 percent.

Disconnection Emissions:

The disconnect loss emission factor is equal to the volume of liquid spilled per disconnect (3.2 mL/disconnect) times the density of the naphtha.

Fugitive Emission:

Potential fugitive VOC emissions for the fugitive components associated with this application are calculated using *California Implementation Guidelines for Estimating Mass Emissions of fugitive Hydrocarbon Leaks at Petroleum Facilities*, CAPCOA/CARB, February 1999. The correlation equation emission factors for refineries and marketing terminals as defined in Table IV-3a of CAPCOA guideline document are used.

The correlation equation method requires data from Method 21 leak monitoring inspections on these components, to establish the % Default Zero, % Pegged, and % within Correlation range. The screening range concentrations applied for each component type are based on Rule 4455 leak threshold for minor leaks. Because Rule 4624 prohibits major leaks, the % Pegged is set to zero for the transfer racks and their components.

In the CAPCOA Correlation Equation Method, VOC emissions from fugitive components are calculated as follows:

If the screening value is less than 10,000 ppmv, then

$$\text{Emissions (lb/yr)} = \text{CF1} \times \text{SV}^{\text{CF2}} \times (2.20462 \text{ lb/1 kg}) \times (8760 \text{ hr/yr}), \text{ where}$$

- CF1 = Correlation factor 1 for specific component type
- SV = Measured screening value, ppmv VOC
- CF2 = Correlation factor 2 for specific component type

If the screening value is 10,000 ppmv or more, then the CAPCOA supplies a “pegged value” emission rate to use for each component type; however, as discussed above, because Rule 4624 prohibits major leaks, the pegged value is set to zero. Total emissions are determined by summing the emissions from each component.

TABLE IV-3a: CAPCOA-Revised 1995 EPA Correlation Equations and Factors for Refineries and Marketing Terminals ^a

Equipment Type	Service	Default Zero Factor ^b (kg/hr)	Correlation Equation ^c (kg/hr)
Valves	All	0.0000078	$2.27 \times 10^{-6} * (SV)^{0.747}$
Pump Seals	All	0.000019	$5.07 \times 10^{-5} * (SV)^{0.622}$
Others ^d	All	0.000004	$8.69 \times 10^{-6} * (SV)^{0.642}$
Connectors	All	0.0000075	$1.53 \times 10^{-6} * (SV)^{0.736}$
Flanges	All	0.00000031	$4.53 \times 10^{-6} * (SV)^{0.706}$
Open-Ended Lines	All	0.000002	$1.90 \times 10^{-6} * (SV)^{0.724}$

^a Source: SBCAPCD Report, dated May 1, 1997, entitled Review of the 1995 Protocol: The Correlation Equation Approach To Quantifying Fugitive Hydrocarbon Emissions At Petroleum Industry Facilities. Technical corrections and adjustments were made to the refineries and marketing terminals bagged data, obtained by use of the blow through method, to account for the hydrocarbon leak flow rate.

^b The default zero factors apply only when the screening value (SV), corrected for background, equals 0.0 ppmv (i.e., the screening value is indistinguishable from background reading). The default zero factors were based on the combined 1993 refinery and marketing terminal data only; default zero data were not collected from oil and gas production facilities.

^c The correlation equations apply for actual screening values, corrected for background, between background and 9,999 ppmv and can be used for screening values up to 99,999 ppmv at the discretion of the local district.

^d The “other” component type includes instruments, loading arms, pressure relief valves, vents, compressor seals, dump lever arms, diaphragms, drains, hatches, meters, and polished rods stuffing boxes. This “others” component type should be applied for any component type other than connectors, flanges, open-ended lines, pumps, or valves. H.

C. Calculations

1. Pre-Project Potential to Emit (PE1)

Since this is a new emissions unit, PE1 = 0 for all pollutants.

2. Post-Project Potential to Emit (PE2)

The PE for the new emissions unit consists of the following: (a) fugitive VOC emissions from the components (which are calculated in the fugitive VOC emission calculations in Appendix F); (b) VOC emissions from the disconnection losses; and (c) VOC emissions from loading (i.e. loading losses). Emissions are calculated below:

PE VOC fugitive components

= 0.21 lb-VOC/day and 76.5 lb-VOC/yr (See fugitive emission calculations in Appendix E)

PE VOC disconnections

$$= (42 \text{ disconnects/day})(3.2 \text{ mL/disconnect limit})(5.68 \text{ lb/gallon density of naphtha})(1 \text{ gallon}/3,785 \text{ mL})$$

$$= 0.20 \text{ lb-VOC/day}$$

$$= (5,124 \text{ disconnects/dyear})(3.2 \text{ mL/disconnect limit})(5.68 \text{ lb/gallon density of naphtha})(1 \text{ gallon}/3,785 \text{ mL})$$

$$= 24.6 \text{ lb-VOC/yr}$$

PE VOC loading emissions

$$= L_L (1 - \text{eff}/100) \times \text{Throughput}$$

$$= (5.2955 \text{ lb-VOC}/1,000 \text{ gal})(1 - 0.987) \times \text{Throughput}$$

$$= (0.0688 \text{ lb-VOC}/1,000 \text{ gal})(151,704 \text{ gal/day}) = 10.44 \text{ lb-VOC/day}$$

$$= (0.0688 \text{ lb-VOC}/1,000 \text{ gal})(18,507,888 \text{ gal/yr}) = 1,273.3 \text{ lb-VOC/yr}$$

$$\text{PE VOC total (lb/day)} = 0.21 \text{ lb/day fugitives} + 0.20 \text{ lb/day disconnections} + 10.44 \text{ lb/day loading}$$

$$= 10.9 \text{ lb-VOC/day}$$

$$\text{PE VOC total (lb/yr)} = 76.5 \text{ lb/yr fugitives} + 24.6 \text{ lb/yr disconnections} + 1,273.3 \text{ lb/yr loading}$$

$$= 1,374 \text{ lb-VOC/yr}$$

The post-project potential to emit for all the permit unit in this project are summarized in the table below.

PE2		
Pollutant	Daily Emissions (lb/day)	Annual Emissions (lb/year)
NO _x	0	0
SO _x	0	0
PM ₁₀	0	0
CO	0	0
VOC	10.9	1,374

3. Pre-Project Stationary Source Potential to Emit (SSPE1)

Pursuant to District Rule 2201, the SSPE1 is the Potential to Emit (PE) from all units with valid Authorities to Construct (ATC) or Permits to Operate (PTO) at the Stationary Source and the quantity of Emission Reduction Credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions (AER) that have occurred at the source, and which have not been used on-site.

Facility emissions are already above the Offset and Major Source Thresholds for VOC emissions; therefore, SSPE1 calculations are not necessary.

4. Post-Project Stationary Source Potential to Emit (SSPE2)

Pursuant to District Rule 2201, the SSPE2 is the PE from all units with valid ATCs or PTOs at the Stationary Source and the quantity of ERCs which have been banked since September 19, 1991 for AER that have occurred at the source, and which have not been used on-site.

Since facility emissions are already above the Offset and Major Source Thresholds for VOC emissions, SSPE2 calculations are not necessary.

5. Major Source Determination

Rule 2201 Major Source Determination:

Pursuant to District Rule 2201, a Major Source is a stationary source with a SSPE2 equal to or exceeding one or more of the following threshold values. For the purposes of determining major source status the following shall not be included:

- any ERCs associated with the stationary source
- Emissions from non-road IC engines (i.e. IC engines at a particular site at the facility for less than 12 months), pursuant to the Clean Air Act, Title 3, Section 302, US Codes 7602(j) and (z)
- Fugitive emissions, except for the specific source categories specified in 40 CFR 70.2

This source is an existing Major Source for VOC emissions and will remain a Major Source for VOC. No change in other pollutants are proposed or expected as a result of this project.

Rule 2410 Major Source Determination:

The facility (a petroleum refinery) or the equipment evaluated under this project is listed as one of the categories specified in 40 CFR 52.21 (b)(1)(iii). Therefore the PSD Major Source threshold is 100 tpy for any regulated NSR pollutant. Since this project only involves VOC emissions, the table below only compares the VOC values.

PSD Major Source Determination (tons/year)	
	VOC
Estimated Facility PE before Project Increase	> 100 ²
PSD Major Source Thresholds	100
PSD Major Source?	Yes

As shown above, the facility is an existing PSD major source for at least one pollutant.

6. Baseline Emissions (BE)

The BE calculation (in lb/year) is performed pollutant-by-pollutant for each unit within the project to calculate the QNEC, and if applicable, to determine the amount of offsets required.

Pursuant to District Rule 2201, BE = PE1 for:

- Any unit located at a non-Major Source,
- Any Highly-Utilized Emissions Unit, located at a Major Source,
- Any Fully-Offset Emissions Unit, located at a Major Source, or
- Any Clean Emissions Unit, located at a Major Source.

otherwise,

BE = Historic Actual Emissions (HAE), calculated pursuant to District Rule 2201.

Since the operation is new emissions unit, BE = PE1 = 0 for all pollutants.

7. SB 288 Major Modification

40 CFR Part 51.165 defines a SB 288 Major Modification as any physical change in or change in the method of operation of a major stationary source that would result in a significant net emissions increase of any pollutant subject to regulation under the Act.

Since this facility is a major source for VOC, the project's PE2 is compared to the SB 288 Major Modification Thresholds in the following table in order to determine if further SB 288 Major Modification calculation is required.

Petroleum refineries fall within the 28 source categories that are required to include fugitive emissions in the SB 288 Major Modification determination. Therefore, fugitive emissions are included in the SB 288 Major Modification determination for this project.

² See SSPE Calculations in Appendix F of project S-1213457, finalized on January 31, 2023.

As calculated in the Calculation section above:

SB 288 Major Modification Thresholds			
Pollutant	Project PE2 (lb/year)	Threshold (lb/year)	SB 288 Major Modification Calculation Required?
NO _x	0	50,000	No
SO _x	0	80,000	No
PM ₁₀	0	30,000	No
VOC	1,374	50,000	No

Since none of the SB 288 Major Modification Thresholds are surpassed with this project, this project does not constitute an SB 288 Major Modification and no further discussion is required.

8. Federal Major Modification / New Major Source

Federal Major Modification

District Rule 2201 states that a Federal Major Modification is the same as a “Major Modification” as defined in 40 CFR 51.165 and part D of Title I of the CAA.

As defined in 40 CFR 51.165, Section (a)(1)(v) and part D of Title I of the CAA, a Federal Major Modification is any physical change in or change in the method of operation of a major stationary source that would result in a significant net emissions increase of any pollutant subject to regulation under the Act. The significant net emission increase threshold for each criteria pollutant is included in Rule 2201.

The determination of Federal Major Modification is based on a two-step test. For the first step, only the emission *increases* are counted. In step 1, emission decreases can not cancel out the increases. Step 2 allows consideration of the project’s net emissions increase as described in 40 CFR 51.165 and the Federal Clean Air Act Section 182 (e), as applicable.

Petroleum refineries fall within the 28 source categories that are required to include fugitive emissions in the Federal Major Modification determination. Therefore, fugitive emissions are included in the Federal Major Modification determination for this project.

Step 1: Project Emissions Increase

For new emissions units, the increase in emissions is equal to the PE2 for each new unit included in this project:

Emission Increase = PE2

Project Emissions Increase

The project's combined total emission increases are calculated summarized in the following table and are compared to the Federal Major Modification Thresholds in the following table.

Federal Major Modification Thresholds for Emission Increases			
Pollutant	Total Emissions Increases (lb/yr)	Thresholds (lb/yr)	Federal Major Modification?
NO _x *	0	0	No
VOC*	1,374	0	Yes
PM ₁₀	0	30,000	No
PM _{2.5}	0	20,000	No
SO _x	0	80,000	No

*If there is any emission increases in NO_x or VOC, this project is a Federal Major Modification and no further analysis is required.

Since there is an increase in VOC emissions, this project constitutes a Federal Major Modification. Consequently, as discussed below in the offset section of this evaluation, pursuant to Section 7.4.2.1 of District Rule 2201, VOC Emission Reduction Credits (ERCs) used to satisfy the offset quantity required under District Rule 2201 must surplus at the time of use (ATC issuance).

Separately, Federal Offset Quantity is calculated below.

New Major Source

As demonstrated above, this facility is not becoming a Major Source as a result of this project, therefore, this facility is not a New Major Source pursuant to 40 CFR 51.165 a(1)(iv)(A)(3).

Federal Offset Quantity Calculation

The Federal Offset Quantity (FOQ) is only calculated for the pollutants for which a project is a Federal Major Modification or a New Major Source as determined above.

Pursuant to 40 CFR 51.165(a)(3)(ii)(J), the federal offset quantity is the sum of the annual emission changes for all new and modified emission units in a project calculated as the potential to emit after the modification (PE2) minus the actual emissions (AE) for each emission unit times the applicable federal offset ratio.

$$\text{FOQ} = \sum (\text{PE2} - \text{AE}) \times \text{Federal offset ratio}$$

Actual Emissions

As described in 40 CFR 51.165(a)(1)(xii), actual emissions (AE), as of a particular date, shall equal the average rate, in tons per year, at which the unit actually emitted the pollutant during a consecutive 24-month period which precedes the particular date and which is representative of normal source operation. The reviewing authority shall allow the use of a different time period upon a determination that it is more representative of normal source operation.

Since this is a new unit, AE = 0

Federal Offset Ratio

According the CAA 182(e), the federal offset ratio for VOC and NOx is 1.5 to 1 (due to the District extreme non-attainment status for ozone).

Federal Offset Quantity (FOQ)

Since this project only includes a new unit,

FOQ = PE2 x Federal offset ratio

VOC		Federal Offset Ratio	1.5
Permit No.	Post-Project Potential to Emit (PE2) (lb/year)	Actual Emissions (lb/year)	Emissions Change (lb/yr)
S-34-53-0	1,374	0	1,374
$\sum(PE2 - AE) \text{ (lb/year):}$			1,374
Federal Offset Quantity (lb/year): $\sum(PE2 - AE) \times 1.5$			2,061
Federal Offset Quantity (tons/year): $\sum(PE2 - AE) \times 1.5 \div 2,000$			1.0

9. Rule 2410 – Prevention of Significant Deterioration (PSD) Applicability Determination

Rule 2410 applies to any pollutant regulated under the Clean Air Act, except those for which the District has been classified nonattainment. The pollutants which must be addressed in the PSD applicability determination for sources located in the SJV and which are emitted in this project are: (See 52.21 (b) (23) definition of significant)

This project only involves VOC emissions. The District has been classified nonattainment for VOC. Therefore, Rule 2410 does not apply to this project.

10. Quarterly Net Emissions Change (QNEC)

The QNEC is calculated solely to establish emissions that are used to complete the District's PAS emissions profile screen. Detailed QNEC calculations are included in Appendix G.

11. PM2.5 Federal Offset Sanctions

As of June 27, 2023, the District is in nonattainment new source review (NNSR) offset sanctions pursuant to CAA 179(a) for PM2.5. Therefore, any New Major Source or Federal Major Modification for PM2.5 (including increases of its precursors NO_x, VOC, and SO_x), must supply any required federal offsets at a 2:1 ratio.

For the purposes of determining major source status the following shall not be included:

- any ERCs associated with the stationary source
- Emissions from non-road IC engines (i.e. IC engines at a particular site at the facility for less than 12 months), pursuant to the Clean Air Act, Title 3, Section 302, US Codes 7602(j) and (z)
- Fugitive emissions, except for the specific source categories specified in 40 CFR 70.2

PM2.5 Federal Major Source Determination (lb/year)				
	NO _x *	SO _x *	PM _{2.5}	VOC*
SSPE1	N/A	N/A	N/A	>140,000 ⁺
SSPE2	N/A	N/A	N/A	>140,000 ⁺
PM2.5 Federal Major Source Threshold**	140,000	140,000	140,000	140,000
Pre or Post-Project PM2.5 Federal Major Source?	No	No	No	Yes

* PM2.5 Precursors

** Pursuant to 40 CFR 51.165(a)(1)(iv)(A)

⁺ Pursuant to Appendix F of project S-1213457, finalized on January 31, 2023.

As shown in the table above, this facility is an existing PM2.5 federal Major Source for VOC.

Pursuant to 40 CFR 51.165 and the Federal Clean Air Act Section 182(e), the determination of Federal Major Modification is based on a two-step test. For the first step, only the emission *increases* are counted. In step 1, emission decreases cannot cancel out the increases. Step 2 allows consideration of the project's net emissions increase (NEI). As a worst-case scenario, only increases from this project will be compared to the significance thresholds in the following table:

PM2.5 Federal Major Modification Source Determination (lb/year)				
	NO_x*	SO_x*	PM_{2.5}	VOC*
Emission Increases (only)	0	0	0	1,374
Significance Threshold for PM2.5**	80,000	80,000	20,000	80,000
PM2.5 Federal Major Modification?	No	No	No	No

* PM2.5 Precursors

** Pursuant to 40 CFR 51.165(a)(1)(x)(A)

As seen in the tables above, this facility is an existing Major Source for VOC and the emission increases from this project are less than the significance thresholds for PM2.5, NO_x, SO_x, and VOC. Therefore, this project is not a federal major modification for PM2.5 and 2:1 offsets are not required.

VIII. Compliance Determination

Rule 2201 New and Modified Stationary Source Review Rule

A. Best Available Control Technology (BACT)

1. BACT Applicability

Pursuant to District Rule 2201, Section 4.1, BACT requirements are triggered on a pollutant-by-pollutant basis and on an emissions unit-by-emissions unit basis. Unless specifically exempted by Rule 2201, BACT shall be required for the following actions*:

- Any new emissions unit with a potential to emit exceeding two pounds per day,
- The relocation from one Stationary Source to another of an existing emissions unit with a potential to emit exceeding two pounds per day,
- Modifications to an existing emissions unit with a valid Permit to Operate resulting in an Adjusted Increase in Permitted Emissions (AIPE) exceeding two pounds per day, and/or
- Any new or modified emissions unit, in a stationary source project, which results in an SB 288 Major Modification or a Federal Major Modification, as defined by the rule.

*Except for CO emissions from a new or modified emissions unit at a Stationary Source with an SSPE2 of less than 200,000 pounds per year of CO.

a. New emissions units – PE > 2 lb/day

As seen in Section VII.C.2 above, the applicant is proposing to install a new emission unit with a PE greater than 2 lb/day for VOC. Therefore BACT for new units with a PE > 2 lb/day purposes is triggered.

b. Relocation of emissions units – PE > 2 lb/day

As discussed in Section I above, there are no emissions units being relocated from one stationary source to another; therefore BACT is not triggered.

c. Modification of emissions units – AIPE > 2 lb/day

As discussed in Section I above, there are no modified emissions units associated with this project. Therefore BACT is not triggered.

d. SB 288/Federal Major Modification

As discussed in Section VII.C.8 above, this project constitutes a Federal Major Modification for VOC emissions. Therefore BACT is triggered for VOC for all emissions units in the project for which there is an emission increase.

2. BACT Guideline

As determined above, BACT is triggered for the new naphtha transfer operation. BACT Guideline 7.1.10 is applicable to organic liquid loading racks; however, the requirements of that guideline were solely based upon loading racks located at gasoline bulk terminals. Transloading of organic liquids from one delivery vehicle to another are very different from the loading of organic liquids into delivery vehicles at gasoline bulk terminals as follows:

1. It isn't possible to use a vapor balance system at gasoline bulk terminals since bulk terminals generally transfer organic liquids from floating roof tanks that don't have a vapor space that is required for a balance system. In contrast, transloading operations from one vehicle to another are nearly always equipped with a vapor balance system.
2. Transloading operations typically have portable pumps that are moved around the site to facilitate loading of organic materials from one vehicle to another. In contrast, gasoline bulk plants have stationary terminals for loading delivery vehicles. As a result, it is far easier to connect vapor recovery systems to a loading rack at a gasoline bulk terminal than it is at a transloading operation
3. Transloading operations typically occur at small facilities located next to railroad tracks, with little room for installing a vapor control system and external control device. Alternatively, gasoline bulk terminals are much larger with more room for installing external control systems.

The requirements BACT Guideline 7.1.10 was intended for loading racks at gasoline bulk terminals, which are inherently different than transloading operations as described above. Therefore, BACT Guideline 7.1.10 is not applicable to the proposed transloading operations.

BACT Guideline 4.11.6 is applicable to transloading of non-petroleum organic materials from railcars to trucks; however, this guideline has been rescinded. Therefore, the guideline will be updated in this permitting action. Furthermore, the scope of the guideline

will be altered to cover all transloading operations, including transloading of petroleum based organic liquids. A copy of the analysis to update the guideline is included in Appendix C.

3. Top-Down BACT Analysis

Per Permit Services Policies and Procedures for BACT, a Top-Down BACT analysis shall be performed as a part of the application review for each application subject to the BACT requirements pursuant to the District's NSR Rule.

Pursuant to the attached Top-Down BACT Analysis (see Appendix D), BACT has been satisfied with the following:

VOC: Submerged loading (bottom loading or the use of a submerged fill pipe) with a balance vapor recovery system, vapor-tight delivery vehicles, and the use of dry break couplers

The applicant is proposing this level of control; therefore, BACT requirements for VOC are satisfied. In addition to the equipment description requiring a vapor balance system, the following conditions will be added as a mechanism to ensure compliance with the requirements of BACT:

- No delivery vessel shall be used or operated unless it is vapor tight. The test method to determine vapor tightness of delivery vessels owned or operated by this facility shall be EPA Method 27. [District Rule 2201]
- All delivery trucks shall be loaded at a loading rack equipped with vapor recovery. [District Rules 2201 and 4624]
- Operation shall include truck unloading and railcar loading operation with disconnect, dry-break couplers, top loading with drop tubes, or bottom loading. [District Rules 2201 and 4624]

B. Offsets

1. Offset Applicability

Pursuant to District Rule 2201, Section 4.5, offset requirements shall be triggered on a pollutant by pollutant basis and shall be required if the SSPE2 equals or exceeds the offset threshold levels in Table 4-1 of Rule 2201.

The SSPE2 is compared to the offset thresholds in the following table. Since this project only involves VOC emissions, the table below only compares the VOC values. Since this project only involves VOC emissions, the table below only compares the VOC values.

Offset Determination (lb/year)	
	VOC
SSPE2	> 20,000
Offset Thresholds	20,000
Offsets Triggered?	Yes

2. Quantity of District Offsets Required

District Offset Quantities Calculation

As demonstrated above, the facility has an SSPE1 for VOC greater than the offset thresholds. Therefore offset calculations will be required for this project.

The quantity of offsets in pounds per year for VOC is calculated as follows for sources with an SSPE1 greater than the offset threshold levels before implementing the project being evaluated.

Offsets Required (lb/year) = $(\Sigma[PE2 - BE] + ICCE) \times DOR$, for all new or modified emissions units in the project,

Where,

PE2 = Post-Project Potential to Emit, (lb/year)

BE = Baseline Emissions, (lb/year)

ICCE = Increase in Cargo Carrier Emissions, (lb/year)

DOR = Distance Offset Ratio, determined pursuant to Section 4.8

BE = PE1 for:

- Any unit located at a non-Major Source,
- Any Highly-Utilized Emissions Unit, located at a Major Source,
- Any Fully-Offset Emissions Unit, located at a Major Source, or
- Any Clean Emissions Unit, Located at a Major Source.

otherwise,

BE = HAE

As calculated in Section VII.C.6 above, the BE from the unit is equal to 0-lb-VOC/yr since it is new.

Also, there is only one emissions unit associated with this project and there are no increases in cargo carrier emissions.

Since this project is a Federal Major Modification, pursuant to Section 4.8.1, the offset ratio is 1.5:1, the amount of VOC ERCs that need to be withdrawn is:

$$\begin{aligned}\text{Offsets Required (lb/year)} &= ([1,374 - 0] + 0) \times \text{DOR} \\ &= 1,374 \times \text{DOR} \\ &= 2,061 \text{ lb-VOC/year}\end{aligned}$$

Calculating the appropriate quarterly emissions to be offset is as follows:

$$\begin{aligned}\text{Quarterly offsets required (lb/qtr)} &= (2,061 \text{ lb-VOC/year}) \div (4 \text{ quarters/year}) \\ &= 515.25 \text{ lb-VOC/qtr}\end{aligned}$$

District and Federal Offset Quantities

As discussed above, District offsets are triggered and required for VOC under NSR. In addition, as demonstrated above, this project does trigger Federal Major Modification requirements for VOC emissions.

Since District offsets and federal offsets are required, the facility must provide offset amounts equal to the greatest value between the District offset quantity and the federal offset quantity.

Comparison of District vs Federal VOC Offset Quantity (lb/yr)			
	DOQ	FOQ	FOQ ≥ DOQ
VOC	2,061	2,061	Yes

As demonstrated above, the federal offset quantity required is equal to the District offset quantity. Therefore, pursuant to Section 7.4.1.2 of District Rule 2201, the facility must comply with the required federal offset quantities. In addition, emission reduction credits used to satisfy federal offset quantities for VOC must be creditable and surplus at the time of use (ATC issuance).

Surplus at the Time Of Use Emission Reduction Credits

The applicant has stated that the facility plans to use ERC certificate S-5178-1 to satisfy the federal offset quantities for VOC required for this project. Pursuant to the ERC surplus analysis in Appendix H, the District has verified that the credits from the ERC certificate provided by the applicant are sufficient to satisfy the federal offset quantities for VOC required for this project.

Required District and Federal Offset Quantities Summary

The applicant has proposed to use the following emission reduction certificates:

	<u>1st Quarter</u>	<u>2nd Quarter</u>	<u>3rd Quarter</u>	<u>4th Quarter</u>
ERC #S-5178-1	29,099	29,898	30,307	30,215

As discussed above, the facility has sufficient credits to fully offset the quarterly VOC emissions increases associated with this project.

Proposed Rule 2201 Offset Permit Conditions

The following permit conditions will be added to the Authority to Construct:

- {GC# 4447 - edited} Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 515 lb, 2nd quarter - 515 lb, 3rd quarter - 515 lb, and fourth quarter - 516 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 8/15/19) for the ERC specified below. VOC ERCs used to satisfy the offset quantity required under District Rule 2201 must be surplus at the time of issuance of this ATC and the total quantity of ERCs surrendered shall be calculated based on the ERC surplus value percent discount of each ERC certificate used. [District Rule 2201]
- {GC# 1983} ERC Certificate Number S-5178-1 (or a certificate split from this certificate) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201]

3. ERC Withdrawal Calculations

The applicant must identify the ERC Certificate(s) to be used to offset the increase of VOC emissions for the project. As indicated in the previous section, the applicant is proposing to use ERC certificate S-5178-1 to mitigate the increases of VOC emissions associated with this project. See Appendix I for detailed ERC Withdrawal Calculations.

C. Public Notification

1. Applicability

Pursuant to District Rule 2201, Section 5.4, public noticing is required for:

- a. New Major Sources, Federal Major Modifications, and SB 288 Major Modifications,
- b. Any new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any one pollutant,
- c. Any project which results in the offset thresholds being surpassed,
- d. Any project with an SSIPE of greater than 20,000 lb/year for any pollutant, and/or
- e. Any project which results in a Title V significant permit modification

a. New Major Sources, Federal Major Modifications, and SB 288 Major Modifications

As demonstrated in Section VII.C.7 of this evaluation, this project is a Federal Major Modification. Therefore, public noticing is required for this project for Federal Major Modification purposes.

b. PE > 100 lb/day

Applications which include a new emissions unit with a PE greater than 100 pounds during any one day for any pollutant will trigger public noticing requirements. As seen in Section VII.C.2 above, this project does not include a new emissions unit which has daily emissions greater than 100 lb/day for any pollutant, therefore public noticing for PE > 100 lb/day purposes is not required.

c. Offset Threshold

Public notification is required if the pre-project Stationary Source Potential to Emit (SSPE1) is increased to a level exceeding the offset threshold levels. The following table compares the SSPE1 with the SSPE2 in order to determine if any offset thresholds have been surpassed with this project. Since this project only involves VOC emissions, the table below only compares the VOC values.

Offset Thresholds				
Pollutant	SSPE1 (lb/year)	SSPE2 (lb/year)	Offset Threshold	Public Notice Required?
VOC	> 20,000	> 20,000	20,000 lb/year	No

As demonstrated above, there were no thresholds surpassed with this project; therefore public noticing is not required for offset purposes.

d. SSIPE > 20,000 lb/year

Public notification is required for any permitting action that results in a SSIPE of more than 20,000 lb/year of any affected pollutant. According to District policy, the SSIPE = SSPE2 – SSPE1. The SSIPE is compared to the SSIPE Public Notice thresholds in the following table. Since this project only involves VOC emissions, the table below only compares the VOC values.

SSIPE Public Notice Thresholds					
Pollutant	SSPE2 (lb/year)	SSPE1 (lb/year)	SSIPE (lb/year)	SSIPE Public Notice Threshold	Public Notice Required?
VOC	>20,000	>20,000	1,374	20,000 lb/year	No

As demonstrated above, the SSIPEs for all pollutants were less than 20,000 lb/year; therefore public noticing for SSIPE purposes is not required.

e. Title V Significant Permit Modification

As shown in the Discussion of Rule 2520 below, this project constitutes a Title V significant modification. Therefore, public noticing for Title V significant modifications is required for this project.

2. Public Notice Action

As discussed above, public noticing is required for this project for triggering a Federal Major Modification and a Title V significant modification. Therefore, public notice documents will be submitted to the California Air Resources Board (CARB) and a public notice will be electronically published on the District's website prior to the issuance of the ATC for this equipment.

D. Daily Emission Limits (DELs)

DELs and other enforceable conditions are required by Rule 2201 to restrict a unit's maximum daily emissions, to a level at or below the emissions associated with the maximum design capacity. The DEL must be contained in the latest ATC and contained in or enforced by the latest PTO and enforceable, in a practicable manner, on a daily basis. DELs are also required to enforce the applicability of BACT.

Proposed Rule 2201 (DEL) Conditions:

- No more than 151,704 gallons (3,612 barrels) of organic liquid shall be transferred in any one day. No more than 18,507,888 gallons (440,664 barrels) of organic liquid shall be transferred per year. [District Rule 2201]
- The number of disconnections shall not exceed either of the following limits: 42 liquid line disconnections/day and 5,124 liquid line disconnections/year. [District Rule 2201]
- The transfer and vapor collection equipment shall be designed, installed, maintained and operated such that there are no leaks or excess organic liquid drainage at disconnections. A leak shall be defined as the dripping of organic compounds at a rate of more than three drops per minute or the detection of organic compounds, in excess of 1,000 ppm as methane measured at the surface of the component interface from the potential source in accordance with EPA Method 21. Excess liquid drainage shall be defined as exceeding 3.2 mL, per average of 3 consecutive disconnects. If 3 disconnects cannot be achieved during the inspection period, then an average of all disconnects during the inspection period will be used to show compliance. [District Rules 2201 and 4624, 5.6]
- Operation shall include truck unloading and railcar loading operation with disconnect, dry-break couplers, top loading drop tubes (equivalent to bottom loading) or bottom loading. [District Rules 2201 and 4624]
- Organic liquid transfer shall be with vapor control such that VOC emissions do not exceed 0.0688 lb per 1000 gallons of liquid loaded. [District Rules 2201 and 4624, 5.1]

- All delivery trucks shall be loaded at a loading rack equipped with vapor recovery. [District Rules 2201 and 4624]
- Vapor recovery hoses shall be connected to the railcar's tank whenever organic liquid is being transferred into the railcar. [District Rule 2201] Y
- Railcars shall be bottom loaded and all vapors displaced from the railcar during loading shall be returned to the delivery truck through a balanced vapor recovery system. [District Rules 2201 and 4624]
- No delivery vessel shall be used or operated unless it is vapor tight. The test method to determine vapor tightness of delivery vessels owned or operated by this facility shall be EPA Method 27. [District Rule 2201]
- True vapor pressure (TVP) of all transferred organic liquid shall be less than 2.8 psia. [District Rule 2201]
- Permit holder shall maintain accurate component count and resultant emissions according to CAPCOA's "California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities," Table IV-3a (Feb 1999), Correlation Equations Method. Permit holder shall update such records when new components are approved and installed. Components shall be screened and leak rate shall be measured in accordance with the frequency of inspection specified in Rule 4455 as applicable. [District Rule 2201]
- VOC emissions from fugitive components associated with this emissions unit shall not exceed 0.21 lb/day. VOC emissions from disconnects shall not exceed 0.20 lb/day. VOC emissions from railcar loading shall not exceed 10.44 lb/day. [District Rule 2201]
- A component shall be considered leaking if one or more of the conditions specified in Sections 5.1.4.1 through 5.1.4.4 of Rule 4455 exist at the facility. [District Rules 2201 and 4455]

E. Compliance Assurance

1. Source Testing

Pursuant to District Policy APR 1705, source testing is not required to demonstrate compliance with Rule 2201.

2. Monitoring

Method 21 monitoring is performed as required by District Rule 4455 for the fugitive components associated with these modifications.

3. Recordkeeping

Recordkeeping is required to demonstrate compliance with the offset, public notification and daily emission limit requirements of Rule 2201. The permittee is required to maintain records of fugitive component inspections as well as records associated with disconnection and throughput of the loading of railcars.

- Permittee shall maintain accurate records of the following: the number of railcars loaded per day, the number of disconnects per day, liquid types, liquid throughput, the quantity of excess liquid collected each week, and the calculated average liquid loss per disconnect. [District Rules 1070 and 4624]
- All records required by this permit shall be maintained for a period of five years and shall be made readily available for District inspection upon request. [District Rules 1070 and 4624]

4. Reporting

No reporting is required to demonstrate compliance with Rule 2201.

F. Ambient Air Quality Analysis (AAQA)

Section 4.14 of District Rule 2201 requires that an AAQA be conducted for the purpose of determining whether a new or modified Stationary Source will cause or make worse a violation of an air quality standard. An AAQA was not performed, because the District does not have approved thresholds for the assessed criteria pollutant (VOC).

G. Compliance Certification

Section 4.15.2 of this Rule requires the owner of a New Major Source or a source undergoing a Federal Major Modification to demonstrate to the satisfaction of the District that all other Major Sources owned by such person and operating in California are in compliance or are on a schedule for compliance with all applicable emission limitations and standards. As discussed in Section VIII above, this facility is a new major source and this project does constitute a Federal Major Modification, therefore this requirement is applicable. Alon Bakersfield Refining's compliance certification is included in Appendix J.

H. Alternate Siting Analysis

The current project occurs at an existing facility. The applicant proposes to install a transportable loading rack.

Since the project will provide railcar loading capacity to be used at the same location, the existing site will result in the least possible impact from the project. Alternative sites would involve the relocation and/or construction of various support structures on a much greater scale, and would therefore result in a much greater impact.

Rule 2410 Prevention of Significant Deterioration

As shown in Section VII.C.9 above, this project does not result in a new PSD major source or PSD major modification. No further discussion is required.

Rule 2520 Federally Mandated Operating Permits

This facility is subject to this Rule, and has received their Title V Operating Permit. A significant permit modification is defined as a “permit amendment that does not qualify as a minor permit modification or administrative amendment.”

Minor permit modifications are not significant modifications or major modifications. The project is a federal major modification. As a result, the proposed project constitutes a Significant Modification to the Title V Permit.

As discussed above, the facility has applied for a Certificate of Conformity (COC); therefore, the facility must apply to modify their Title V permit with an administrative amendment, prior to operating with the proposed modifications. Continued compliance with this rule is expected. The facility shall not implement the changes requested until the final permit is issued. The following conditions will be included as a mechanism to ensure compliance:

- {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201]
- {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4]

Rule 4001 New Source Performance Standards (NSPS)

This rule incorporates NSPS from Part 60, Chapter 1, Title 40, Code of Federal Regulations (CFR); and applies to all new sources of air pollution and modifications of existing sources of air pollution listed in 40 CFR Part 60.

40 CFR Part 60, Subpart VVa (Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006) applies to components that are part of a process unit that commenced construction, reconstruction, or modification after November 7, 2006 and that produces one of the chemicals listed in 40 CFR 60.489. Naphtha is not listed in 40 CFR 60.489, and therefore, the transfer operation in this project is not subject to this subpart.

40 CFR Part 60, Subpart GGGa (Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries for which Construction, Reconstruction, or Modification Commenced After November 7, 2006) applies to components that are part of a process unit that commenced construction, reconstruction, or modification after November 7, 2006. Components include compressors, and the group of the following: valves, pumps, pressure relief devices, sampling connection systems, open-ended valves or lines, and flanges or other connectors in VOC service. Subpart GGGa does not apply to the transfer operation as it does not support petroleum refining operations; it supports the facility’s renewable fuels production process.

Rule 4002 National Emission Standards for Hazardous Air Pollutants (NESHAPs)

This rule incorporates NESHAPs from Part 61, Chapter I, Subchapter C, Title 40, CFR and the NESHAPs from Part 63, Chapter I, Subchapter C, Title 40, CFR; and applies to all sources of hazardous air pollution listed in 40 CFR Part 61 or 40 CFR Part 63. Since this facility is not a major source of HAP, no subparts apply.

Rule 4101 Visible Emissions

Rule 4101 states that no person shall discharge into the atmosphere emissions of any air contaminant aggregating more than 3 minutes in any hour which is as dark as or darker than Ringelmann 1 (or 20% opacity). Provided the equipment is properly maintained and operated, compliance with visible emissions limits is expected.

The following existing condition on the facility-wide permit S-34-0-03 is included as a mechanism to ensure compliance:

- {4383} No air contaminants shall be discharged into the atmosphere for a period or periods aggregating more than 3 minutes in any one hour which is as dark or darker than Ringelmann #1 or equivalent to 20% opacity and greater, unless specifically exempted by District Rule 4101 (02/17/05). If the equipment or operation is subject to a more stringent visible emission standard as prescribed in a permit condition, the more stringent visible emission limit shall supersede this condition. [District Rule 4101, and County Rules 401 (in all eight counties in the San Joaquin Valley)]

Rule 4102 Nuisance

Rule 4102 prohibits discharge of air contaminants which could cause injury, detriment, nuisance or annoyance to the public. Public nuisance conditions are not expected as a result of these operations, provided the equipment is well maintained. Therefore, compliance with this rule is expected.

The following existing condition on the facility-wide permit S-34-0-3 is included as a mechanism to ensure compliance:

- No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

California Health & Safety Code 41700 (Health Risk Assessment)

District Policy APR 1905 – *Risk Management Policy for Permitting New and Modified Sources* specifies that for an increase in emissions associated with a proposed new source or modification, the District perform an analysis to determine the possible impact to the nearest resident or worksite.

District policy APR 1905 also specifies that the increase in emissions associated with a proposed new source or modification of an existing source shall not result in an increase in cancer risk greater than the District's significance level (20 in a million) and shall not result in acute and/or chronic risk indices greater than 1.

According to the Technical Services Memo for this project, the total facility prioritization score including this project was greater than one. Therefore, an HRA was required to determine the short-term acute and long-term chronic exposure from this project.

The resulting prioritization score, acute hazard index, chronic hazard index, and cancer risk for this project is shown below.

Health Risk Assessment Summary	
	Worst Case Potential
Prioritization Score	>1
Cancer Risk	N/A*
Acute Hazard Index	N/A*
Chronic Hazard Index	0.00
T-BACT Required?	No

* An Ambient Air Quality Analysis (AAQA) was not performed, because the District does not have approved thresholds for the assessed criteria pollutant (VOC)

Discussion of T-BACT

BACT for toxic emission control (T-BACT) is required if the cancer risk exceeds one in one million. As demonstrated above, T-BACT is not required for this project because the HRA indicates that the risk is not above the District's thresholds for triggering T-BACT requirements; therefore, compliance with the District's Risk Management Policy is expected.

In accordance with District policy APR 1905, no further analysis is required, and compliance with District Rule 4102 requirements is expected.

See Appendix D: Health Risk Assessment Summary

Rule 4455 Components at Petroleum Refineries, Gas Liquids Processing Facilities, and Chemical Plants

The purpose of this rule is to limit VOC emissions from leaking components at petroleum refineries, gas liquids processing facilities, and chemical plants. This rule shall apply to components containing or contacting VOC at petroleum refineries, gas liquids processing facilities, and chemical plants.

The operator has successfully implemented an operator management plan for the refinery for the current roster of components in VOC service. As required by this rule, the operator

management plan submitted by the permittee was reviewed and approved by the District. The essential requirement of the rule is that an operator not use any component that leaks in excess of the applicable leak criteria established by the rule, with the exception that leaking components may be used provided that they are identified with a tag for repair, are repaired, or are awaiting re-inspection after being repaired, within the applicable time period specified in this rule. Minor and major gas and liquid leaks are defined and leak standards are established for the following component types: flanges, valves, threaded connections, pumps, compressor, pressure relief devices, pipes and other. The rule establishes inspection, re-inspection and maintenance requirements for components.

Therefore, the following conditions will be added to the ATC:

- A component shall be considered in violation if one or more of the conditions specified in Sections 5.1.4.1 through 5.1.4.4 of Rule 4455 exist at the facility. [District Rules 2201 and 4455]
- In accordance with the approved Operator Management Plan (OMP), the operator shall meet all applicable operating, inspection and re-inspection, maintenance, process pressure relief device (PRD), component identification, recordkeeping and notification requirements of Rule 4455 for all components containing or contacting VOC at this facility, except for those components specifically exempted in Sections 4.1 and 4.2. [District Rule 4455]

Therefore, compliance with this rule is expected.

Rule 4624 Transfer of Organic Liquids

The purpose of this rule is to limit VOC emissions from the transfer of organic liquids. This rule applies to organic liquid transfer facilities as defined in this rule. "Organic liquid" is defined in Section 3.23 as any liquid which contains VOCs and has a true vapor pressure (TVP) of 1.5 psia or greater at the storage container's maximum organic liquid storage temperature.

The applicant indicates that the organic liquid loading/unloading rack is a Class 1 organic liquid transfer facility under the rule, which is defined in Section 3.8 as any location transferring 20,000 gallons or more on any one day of organic liquids with a TVP of 1.5 psia or greater to or from tank trucks, trailers, or railroad tank cars.

Section 5.1 limits Class 1 organic liquid transfer facility to VOC emission from the transfer operation to 0.08 pounds per 1,000 gallons of organic liquid transferred and use one of the following systems:

- 5.1.1 An organic liquid loading operation shall be bottom loaded.
- 5.1.2 The VOC from the transfer operation shall be routed to:
 - 5.1.2.1 A vapor collection and control system;
 - 5.1.2.2 A fixed roof container that meets the control requirements specified in Rule 4623 (Storage of Organic Liquids);
 - 5.1.2.3 A floating roof container that meets the control requirements specified in Rule 4623 (Storage of Organic Liquids); or

- 5.1.2.4 A pressure vessel equipped with an APCO-approved vapor recovery system that meets the control requirements specified in Rule 4623 (Storage of Organic Liquids); or
- 5.1.2.5 A closed VOC emission control system.

Note that the applicant is proposing the use of a vapor control system and top loading drop tubes, which has been determined to be equivalent to bottom loading, as the discharge opening into a container is completely submerged below the level of the organic liquid in the container or actual bottom loading.

The following conditions will be placed on the permit to ensure compliance with this section:

- Operation shall include truck unloading and railcar loading operation with disconnect, dry-break couplers, top loading drop tubes (equivalent to bottom loading) or bottom loading. [District Rules 2201 and 4624]
- All delivery trucks shall be loaded at a loading rack equipped with vapor recovery. [District Rules 2201 and 4624]
- Organic liquid transfer shall be with vapor control such that VOC emissions do not exceed 0.0688 lb per 1000 gallons of liquid loaded. [District Rules 2201 and 4624, 5.1]

Section 5.2 only applies to Class 2 organic liquid transfer facilities.

Section 5.3 imposes leak inspection requirements of Section 5.9 for operations utilizing a closed VOC emission control system or utilizing a container that meets the control requirements for Rule 4623 to meet the emission control requirements of this rule. Since the fugitive components of this operation are subject to the requirements of Rule 4455, pursuant to Section 4.4.2 of Rule 4624, the requirements of Section 5.9 shall not apply to these equipment or components.

Section 5.4 requires the vapor collection and control system shall operate such that the pressure in the delivery tank being loaded does not exceed 18 inches water column pressure and six (6) inches water column vacuum. This section shall not apply to the transfer of liquefied petroleum gas.

Compliance with this section is ensured with the following condition:

- The vapor collection and control system shall operate such that the pressure in the delivery tank being loaded does not exceed 18 inches water column pressure and 6 inches water column vacuum. This requirement shall not apply to the transfer of liquid petroleum gas. [District Rule 4624, 5.4]

Section 5.5 states that all delivery tanks which previously contained organic liquids with a TVP of 1.5 psia or greater at the storage container's maximum organic liquid storage temperature shall be filled only at transfer facilities satisfying Sections 5.1, 5.2, or 5.4, as applicable.

Compliance with this section is ensured with the following condition:

- All delivery tanks which previously contained organic liquids, including gasoline, with a TVP greater than 1.5 psia at loading conditions shall be filled only at Class 1 loading facilities using bottom loading equipment with a vapor collection and control system operating such that VOC emissions do not exceed 0.08 lb/1000 gallons loaded. [District Rule 4624, 5.5]

Section 5.6 states that the transfer rack and vapor collection equipment shall be designed, installed, maintained and operated such that there are no leaks and no excess organic liquid drainage³ at disconnections.

Compliance with this section is ensured with the following condition:

- The transfer and vapor collection equipment shall be designed, installed, maintained and operated such that there are no leaks or excess organic liquid drainage at disconnections. A leak shall be defined as the dripping of organic compounds at a rate of more than three drops per minute or the detection of organic compounds, in excess of 1,000 ppm as methane measured at the surface of the component interface from the potential source in accordance with EPA Method 21. Excess liquid drainage shall be defined as exceeding 3.2 mL, per average of 3 consecutive disconnects. [District Rules 2201 and 4624, 5.6]

Section 5.7 states that the construction of any new top loading facility or the reconstruction, as defined in 40 CFR 60.15, or the expansion of any existing top loading facility with top loading equipment shall not be allowed. This project is not constructing a new top loading facility or reconstructing, or expansion of an existing top loading facility.

Section 5.8 does not apply as it applies to facilities handling exclusively handling liquefied petroleum gas.

Section 5.9 does not apply since it is subject to Rule 4455 (Components at Petroleum Refineries, Gas Liquids Processing Facilities, and Chemical Plants). Section 4.4 states that the requirements of Section 5.9 do not apply to equipment or components subject to Rule 4455

Section 6.1 list the recordkeeping requirements. The following are the applicable requirements:

- 6.1.1 Does not apply as it applies to operators claiming exemption under Section 4.1 (i.e. the transfer of less than 4,000 gallons of organic liquids in any one day).
- 6.1.2 Applies to operators claiming exemption under Section 4.3 (i.e. transfer of organic liquids with TVP less than 1.5 psia at the storage container's maximum organic liquid storage temperature).
- 6.1.3 An operator subject to any part of Section 5.0 shall keep records of daily liquid throughput and the results of any required leak inspections.
- 6.1.4 Records required under Sections 6.1.1, 6.1.2, 6.1.3 shall be retained for a minimum of five years and shall be made readily available to the APCO, ARB, or EPA during normal business hours and submitted upon request to the APCO, ARB, or EPA.

³ Section 3.13 defines "Excess Organic Liquid Drainage" as more than 10 milliliters liquid drainage. However, the applicant proposed a limit of 3.2 mL. Therefore, the limit will be 3.2 mL liquid drainage for disconnect operations, which shall be determined by computing the average drainage from three consecutive disconnects at any one permit unit.

Compliance with this section is ensured with the following conditions:

- Permittee shall maintain accurate records of the following: the number of railcars loaded per day, the number of disconnects per day, liquid types, liquid throughput, the quantity of excess liquid collected each week, and the calculated average liquid loss per disconnect. [District Rules 1070 and 4624]
- All records required by this permit shall be maintained for a period of five years and shall be made readily available for District inspection upon request. [District Rules 1070 and 4624]

Section 6.2 lists compliance testing requirements.

Section 6.2.1 requires Class 1 or Class 2 operator to perform an initial source test of the VOC emission control system. However, Section 6.2.1.2 states that the source testing requirements of Section 6.2.1 shall not apply to any Class 1 or Class 2 organic liquid transfer facility equipped with a closed VOC control system. Because the facility will control emissions with a closed VOC control system, source testing is not required.

Section 6.2.2 requires the operator of any Class 1 or Class 2 organic liquid transfer facility to perform the source test specified in Section 6.3.2 once every 60 months, but no more than 30 days before or after initial source test anniversary date. As discussed in Section 6.2.1, source testing is not required; therefore, the source testing requirements of Section 6.2.2 and the test methods of 6.3 are not applicable and no further discussion is required.

Therefore, compliance with this rule is expected.

California Health & Safety Code 42301.6 (School Notice)

The District has verified that this site is not located within 1,000 feet of a school. Therefore, pursuant to California Health and Safety Code 42301.6, a school notice is not required.

California Environmental Quality Act (CEQA)

CEQA requires each public agency to adopt objectives, criteria, and specific procedures consistent with CEQA Statutes and the CEQA Guidelines for administering its responsibilities under CEQA, including the orderly evaluation of projects and preparation of environmental documents. The District adopted its *Environmental Review Guidelines* (ERG) in 2001. The basic purposes of CEQA are to:

- Inform governmental decision-makers and the public about the potential, significant environmental effects of proposed activities;
- Identify the ways that environmental damage can be avoided or significantly reduced;
- Prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible; and

- Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

Greenhouse Gas (GHG) Significance Determination

It is determined that another agency has prepared an environmental review document for the project. The District is a Responsible Agency for the project because of its discretionary approval power over the project via its Permits Rule (Rule 2010) and New Source Review Rule (Rule 2201), (CEQA Guidelines §15381). As a Responsible Agency, the District is limited to mitigating or avoiding impacts for which it has statutory authority. The District does not have statutory authority for regulating greenhouse gas emissions. The District has determined that the applicant is responsible for implementing greenhouse gas mitigation measures, if any, imposed by the Lead Agency.

District CEQA Findings

The County of Kern (County) is the public agency having principal responsibility for approving the project proposed by Alon Bakersfield Refining (i.e., Modification No. 2 to Precise Plan (PD) 62, Map 102, PD 21, Map 102-14, PD 18, Map 102-15, and PD 1, Map 102-23) (Project) that covers this ATC project # S-1230708 for Alon Bakersfield Refining Facility ID S-34.

As such, the County served as the Lead Agency for the Project. The County determined the Project to be exempt from CEQA according to CEQA Statute §21080(b)(1) “Division Application to Discretionary Projects, Non-application, Negative Declarations, Environmental Impact Report Preparation” and CEQA Guidelines §15268 “Ministerial”. Consistent with CEQA Guidelines §15062, a Notice of Exemption was prepared and adopted by the County.

Pursuant to CEQA Guidelines §15250, the District is a Responsible Agency for the Project via its Permits Rule (Rule 2010) and New Source Review Rule (Rule 2201), (CEQA Guidelines §15381). The District’s engineering evaluation of the ATC project demonstrates that compliance with District rules and permit conditions would reduce Stationary Source emissions from the ATC project to levels below the District’s thresholds of significance for criteria pollutants. Thus, the District concludes that through a combination of project design elements and permit conditions, project specific stationary source emissions will be reduced to less than significant levels. The District does not have authority over any of the other project impacts and has, therefore, determined that no additional findings are required (CEQA Guidelines §15096(h)).

Indemnification Agreement/Letter of Credit Determination

According to District Policy APR 2010 (CEQA Implementation Policy), when the District is the Lead or Responsible Agency for CEQA purposes, an indemnification agreement and/or a letter of credit may be required. The decision to require an indemnity agreement and/or a letter of credit is based on a case-by-case analysis of a particular project’s potential for litigation risk, which in turn may be based on a project’s potential to generate

public concern, its potential for significant impacts, and the project proponent's ability to pay for the costs of litigation without a letter of credit, among other factors.

The criteria pollutant emissions and toxic air contaminant emissions associated with the proposed project are not significant, and there is minimal potential for public concern for this particular type of facility/operation. Therefore, an Indemnification Agreement and/or a Letter of Credit will not be required for this project in the absence of expressed public concern.

IX. Recommendation

Compliance with all applicable rules and regulations is expected. Pending a successful NSR Public Noticing period, issue ATC S-34-53-0 subject to the permit conditions on the attached draft ATC in Appendix A.

X. Billing Information

Annual Permit Fees			
Permit Number	Fee Schedule	Fee Description	Annual Fee
S-34-53-0	3020-01-B	< 50 electrical hp	\$143

Appendices

- A: Draft ATC
- B: Process Flow Diagram
- C: BACT Analysis and Updated BACT Guideline
- D: HRA Summary
- E: Fugitive Emission Calculations
- F: Quarterly Net Emissions Change
- G: ERC Surplus Analysis
- H: ERC Withdrawal Calculations
- I: Compliance Certification

APPENDIX A

Draft ATC

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: S-34-53-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: ALON BAKERSFIELD REFINING

MAILING ADDRESS: P O BOX 152 (AREA 3)
BAKERSFIELD, CA 93302-0152

LOCATION: 3663 GIBSON ST (AREA 3)
BAKERSFIELD, CA 93302

EQUIPMENT DESCRIPTION:

ORGANIC LIQUID TRANSLOADING OPERATION FROM TRUCK TO RAILCAR SERVED BY VAPOR BALANCE SYSTEM

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 515 lb, 2nd quarter - 515 lb, 3rd quarter - 515 lb, and fourth quarter - 516 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 8/15/19) for the ERC specified below. VOC ERCs used to satisfy the offset quantity required under District Rule 2201 must be surplus at the time of issuance of this ATC and the total quantity of ERCs surrendered shall be calculated based on the ERC surplus value percent discount of each ERC certificate used. [District Rule 2201] Federally Enforceable Through Title V Permit
4. ERC Certificate Number S-5178-1 (or a certificate split from this certificate) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (661) 392-5500 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Samir Sheikh, Executive Director / APCO

Brian Clements, Director of Permit Services

S-34-53-0 : Oct 13 2023 9:23PM -- GARCIAJ : Joint Inspection NOT Required

5. No more than 151,704 gallons (3,612 barrels) of organic liquid shall be transferred in any one day. No more than 18,507,888 gallons (440,664 barrels) of organic liquid shall be transferred per year. [District Rule 2201] Federally Enforceable Through Title V Permit
6. The number of disconnections shall not exceed either of the following limits: 42 liquid line disconnections/day and 5,124 liquid line disconnections/year. [District Rule 2201] Federally Enforceable Through Title V Permit
7. Vapor recovery hoses shall be connected to the railcar's tank whenever organic liquid is being transferred into the railcar. [District Rule 2201] Federally Enforceable Through Title V Permit
8. Railcars shall be bottom loaded and all vapors displaced from the railcar during loading shall be returned to the delivery truck through a balanced vapor recovery system. [District Rule 2201] Federally Enforceable Through Title V Permit
9. No delivery vessel shall be used or operated unless it is vapor tight. The test method to determine vapor tightness of delivery vessels owned or operated by this facility shall be EPA Method 27. [District Rule 2201] Federally Enforceable Through Title V Permit
10. All delivery trucks shall be loaded at a loading rack equipped with vapor recovery. [District Rules 2201 and 4624] Federally Enforceable Through Title V Permit
11. The transfer and vapor collection equipment shall be designed, installed, maintained and operated such that there are no leaks or excess organic liquid drainage at disconnections. A leak shall be defined as the dripping of organic compounds at a rate of more than three drops per minute or the detection of organic compounds, in excess of 1,000 ppm as methane measured at the surface of the component interface from the potential source in accordance with EPA Method 21. Excess liquid drainage shall be defined as exceeding 3.2 mL, per average of 3 consecutive disconnects. If 3 disconnects cannot be achieved during the inspection period, then an average of all disconnects during the inspection period will be used to show compliance. [District Rules 2201 and 4624, 5.6] Federally Enforceable Through Title V Permit
12. Operation shall include truck unloading and railcar loading operation with disconnect, dry-break couplers, top loading with drop tubes, or bottom loading. [District Rules 2201 and 4624] Federally Enforceable Through Title V Permit
13. Organic liquid transfer shall be with vapor control such that VOC emissions do not exceed 0.0688 lb per 1000 gallons of liquid loaded. [District Rules 2201 and 4624, 5.1] Federally Enforceable Through Title V Permit
14. True vapor pressure (TVP) of all transferred organic liquid shall be less than 2.8 psia. [District Rule 2201] Federally Enforceable Through Title V Permit
15. Permit holder shall maintain accurate component count and resultant emissions according to CAPCOA's "California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities," Table IV-3a (Feb 1999), Correlation Equations Method. Permit holder shall update such records when new components are approved and installed. Components shall be screened and leak rate shall be measured in accordance with the frequency of inspection specified in Rule 4455 as applicable. [District Rule 2201] Federally Enforceable Through Title V Permit
16. VOC emissions from fugitive components associated with this emissions unit shall not exceed 0.21 lb/day. VOC emissions from disconnects shall not exceed 0.20 lb/day. VOC emissions from railcar loading shall not exceed 10.44 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit
17. In accordance with the approved Operator Management Plan (OMP), the operator shall meet all applicable operating, inspection and re-inspection, maintenance, process pressure relief device (PRD), component identification, recordkeeping and notification requirements of Rule 4455 for all components containing or contacting VOC at the this facility, except for those components specifically exempted in Sections 4.1 and 4.2. [District Rule 4455] Federally Enforceable Through Title V Permit
18. The vapor collection and control system shall operate such that the pressure in the delivery tank being loaded does not exceed 18 inches water column pressure and 6 inches water column vacuum. This requirement shall not apply to the transfer of liquid petroleum gas. [District Rule 4624, 5.4]

DRAFT

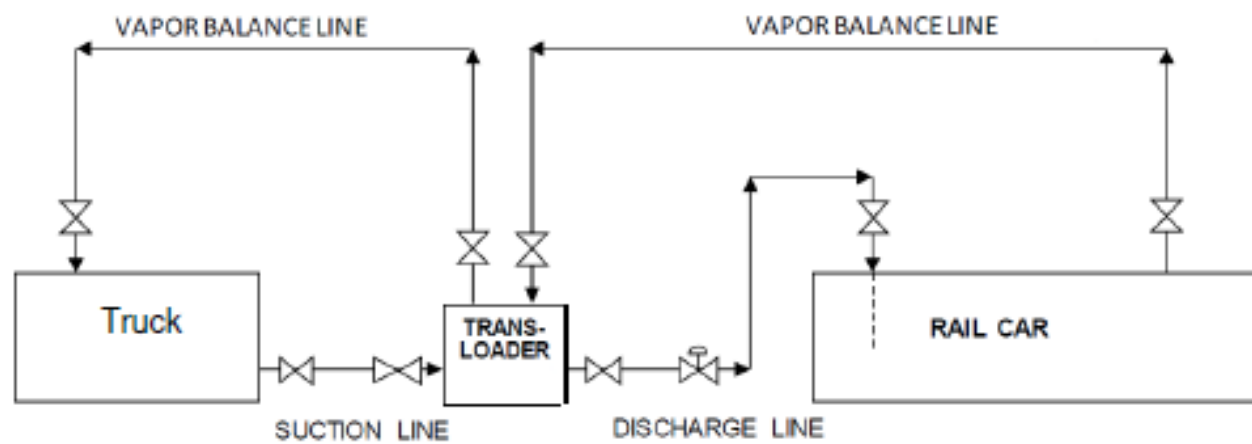
CONDITIONS CONTINUE ON NEXT PAGE

19. All delivery tanks which previously contained organic liquids, including gasoline, with a TVP greater than 1.5 psia at loading conditions shall be filled only at Class 1 loading facilities using bottom loading equipment with a vapor collection and control system operating such that VOC emissions do not exceed 0.08 lb/1000 gallons loaded. [District Rule 4624, 5.5] Federally Enforceable Through Title V Permit
20. A component shall be considered in violation if one or more of the conditions specified in Sections 5.1.4.1 through 5.1.4.4 of Rule 4455 exist at the facility. [District Rules 2201 and 4455] Federally Enforceable Through Title V Permit
21. Permittee shall maintain accurate records of number of railcars loaded/unloaded per day, of the number of disconnects per day, liquid types, liquid throughput, the quantity of excess liquid collected each week, and the calculated average liquid loss per disconnect. [District Rules 1070 and 4624] Federally Enforceable Through Title V Permit
22. The permittee shall keep records of daily liquid throughput and maintain an inspection log containing at least the following: A) dates of leak and drainage inspections, B) leak determination method, C) findings, D) corrective action (date each leak or excess drainage condition repaired), and E) inspector name and signature. [District Rule 2201] Federally Enforceable Through Title V Permit
23. All records required by this permit shall be maintained for a period of five years and shall be made readily available for District inspection upon request. [District Rules 1070 and 4624] Federally Enforceable Through Title V Permit

DRAFT

APPENDIX B

Process Flow Diagram



APPENDIX C
BACT Analysis and Updated BACT Guideline

Best Available Control Technology Analysis

District BACT Guideline 4.11.6

Transloading of Organic and/or Non-organic Liquids into Delivery Vehicles

Prepared by:

Jesse A. Garcia, Senior Air Quality Engineer

Reviewed by:

Errol Villegas, Permit Services Manager

I. Introduction

Alon Bakersfield Refining (Alon) has requested an Authority to Construct (ATC) permit for a new organic liquid (naphtha) truck-to-railcar transloading operation that will consist of a loading rack that is served by a vapor balance system.

Alon produces renewable naphtha as a co-product of renewable diesel. Alon has received ATC S-33-451-0 to load the renewable naphtha onto tanker trucks for delivery to customers and ATC S-33-439-1 to load renewable naphtha onto railcars. To provide the flexibility to deliver the various organic liquid products (e.g. renewable naphtha, propane, butane, and diesel) by railcar while the modifications authorized by S-33-439-1 are completed, Alon is proposing to construct a transloading operation at the facility that will allow the tanker trucks to load railcars.

II. Background

The objective is to update the Best Available Control Technology (BACT) guideline 4.11.6, which covers Railcar Unloading - Transfer of Non-petroleum Organic Liquids into Delivery Vehicles. This guideline was last updated on July 11, 1996 and was rescinded in 2022.

The BACT clearinghouse currently includes a guideline that addresses organic liquid loading racks (Guideline 7.1.10); however, the requirements for that guideline were entirely based upon a survey of organic liquid loading racks located at gasoline bulk plants and did not include an analysis of BACT controls for organic liquid transloading operations, where organic liquids are transferred from one delivery vehicle to another. Since gasoline bulk plants typically transfer organic liquids from floating roof tanks into delivery vehicles, displaced vapors cannot be routed back to the floating roof tanks and must be controlled by an external control device. In contrast, the most common method of control used for transloading operations is to route displaced vapors back to the original delivery vehicle whose contents are being emptied. In fact, it would be very difficult to run vapor recovery lines to transloaders, as these operations are generally transportable, unlike loading racks at gasoline bulk plants that are stationary.

Furthermore, BACT Guideline 7.1.10 for organic liquid loading racks established a VOC emission limit of 0.015 lb/1000 gallons of organic liquids loaded. This emission factor was based solely on testing conducted on organic liquid transfer operations at gasoline bulk terminals. Gasoline bulk terminals only transfer a limited number of products, such as gasoline, diesel, renewable diesel, ethanol, aviation fuel, and jet fuel. On the other hand, transloading operations transfer a wide variety of organic and non-organic liquid materials, many of which have vapor pressures much larger than gasoline. Since vapor pressure correlates with emissions, an emission limit based on testing at gasoline bulk terminals is not appropriate for transloading operations, where a wider variety of chemicals are

transloaded, including organic liquids with vapor pressures much higher than gasoline.

As described above, transloading operations are distinctly different than the loading racks at bulk plants and will be considered to be a separate class of source for BACT; therefore, the scope of BACT Guideline 4.11.6 will be revised to clarify that Guideline 4.11.6 addresses BACT for transloading operations that transfer organic and/or non-organic liquids from one delivery vehicle to another.

This update is necessary to incorporate the most stringent emission control standards that have been achieved in practice. Furthermore, the update to this BACT guideline will bring consistency in implementing the BACT standard throughout the regional offices of the District for new and modified operations triggering BACT. The discussion in this document will be limited to the following items:

- Source of emissions
- Top-Down BACT Analysis
- Recommendation

III. Source of emissions

Organic and/or non-organic liquids are pumped from one delivery vehicle to another using a pump in a process commonly referred to as transloading. As the delivery vehicle tanks are loaded with the organic liquids, the existing vapors in the delivery vehicles are displaced and may be released into the atmosphere. For transloading operations, a balance vapor control system is usually used, where the vapors in the railcar are routed back to the delivery vehicle, preventing their release into the atmosphere. Another source of emissions is liquid leaks that may occur during the disconnection of hoses from the railcars or the delivery vehicles.

IV. Top-Down BACT Analysis

BACT analysis for VOC Emissions

Step 1 - Identify All Possible VOC Control Technologies for landfill

The following BACT clearinghouse references were reviewed to determine whether any organic liquid transfer operations have been required to employ VOC controls:

- EPA RACT/BACT/LAER clearinghouse
- CARB BACT clearinghouse
- South Coast AQMD (SCAQMD) BACT clearinghouse
- Bay Area AQMD (BAAQMD) BACT clearinghouse
- Sacramento Metro AQMD (SMAQMD) BACT clearinghouse

- San Joaquin Valley APCD (SJVAPCD) BACT clearinghouse

The EPA RACT/BACT/LAER and CARB BACT clearinghouses were searched; however, no guidelines were identified that would apply to organic liquid transfer operations from delivery vehicles to railcars.

A search of South Coast AQMD BACT Clearinghouse identified the following requirements:

South Coast BACT Requirements for Non-Major Polluting Facilities	
Category	BACT Requirement for VOCs
Liquid and Transfer Handling – Tank Trunk and Rail Car Bulk Loading, Class A (Rule 462)	Compliance with Rule 462 (0.08 lb/1000 Gals) Achieved in Practice

A search of the Bay Area AQMD BACT Clearinghouse identified the following requirements:

BAAQMD Guideline 109-1	
Category	BACT Requirement for VOCs
Liquid Transfer & Handling – Tank Truck & Rail Car Bulk Loading (All Except Gasoline Bulk Terminals)	Submerged fill-pipe and vapor collection system vented to a thermal incinerator with a destruction efficiency $\geq 98.5\%$ Achieved in Practice

BAAQMD's clearinghouse also includes BAAQMD Guideline 109-2; however, that guideline is specifically applicable to loading racks at bulk gasoline terminals. Therefore, that guideline won't be considered in determining BACT for transloading operations.

Sacramento Metropolitan AQMD's BACT Clearinghouse does not include a BACT guideline for organic liquid transfer operations.

The SJVAPCD clearinghouse includes a rescinded BACT guideline for Railcar Unloading - Transfer of Non-petroleum Organic Liquids into Delivery Vehicles. The requirements are shown in the table below:

SJVAPCD BACT Guideline 4.11.6 (7/11/96)	
Category	BACT Requirement for VOCs
Railcar Unloading – Transfer of Organic Liquid into Delivery Vehicles	<ol style="list-style-type: none"> 1. Bottom loading with a vapor recovery system (Achieved in Practice) 2. Bottom loading with vapor collection system vented to a refrigerated vapor condenser system OR Bottom loading with vapor collection system vented to

	<p>a thermal incinerator (Technologically Feasible)</p> <p>3. Bottom loading with vapor collection system vented to a carbon adsorption system (Technologically Feasible)</p>
--	---

A review of District rules revealed the following requirements:

Rule	Requirements for VOCs
<p>South Coast Rule 462</p> <p>Organic Liquid Loading</p>	<p>Displaced vapors vented to a vapor recovery or disposal system that reduces emissions of VOC to 0.08 lb or less per thousand gallons of organic liquid transferred, and bottom loading only when transferring gasoline into a delivery vehicle.</p>
<p>BAAQMD Regulation 8 Rule 6</p> <p>Organic Liquid Bulk Terminals and Bulk Plants</p>	<p>Use of a vapor recovery/vapor control system such that reduces VOC emissions to 0.17 lb or less per thousand gallons of organic liquid transferred, and use of a submerged fill pipe (bottom loading).</p>
<p>SMAQMD Rule 447</p> <p>Organic Liquid Loading</p>	<p>Displaced vapors vented to a vapor recovery or disposal system that reduces emissions of VOC to 0.08 lb or less per thousand gallons of organic liquid transferred,</p>
<p>SJVAPCD Rule 4624</p> <p>Transfer of Organic Liquid</p>	<p>Bottom loading, and use of a vapor control system that reduces emissions of VOC to 0.08 lb or less per thousand gallons of organic liquid transferred</p>

A review of District permits for organic liquid transloading operations revealed the following operations:

Facility Permit	VOC Control System
<p>West Coast Transloading</p> <p>N-9370-1-6, '-2-6, '-3-6, '-4-5</p>	<p>Closed Loop Transfer System (balance vapor control system) and no spillage during disconnection of the transfer equipment</p>
<p>Chemical Transfer CO, Inc.</p> <p>N-2518-3-0</p>	<p>Closed Loop Transfer System (balance vapor control system) and no spillage during disconnection of the transfer equipment</p>

Savage Services Corporation ATC N-9934-6-0, '-7-0, '-8-0, '-9-0, '-10-0, '-11-0, and '-12-0	Balance Vapor Control System (Closed Loop Transfer System), bottom loading, and use of dry break couplers
Ascent Aviation Group Inc. S-9594-1-0	Balance Vapor Control System (Closed Loop Transfer System), bottom loading, and use of dry break couplers

The following control options were identified based on the above information:

Option 1: Balance Vapor Control System, Submerged Loading, and Use of Dry Break Couplers

Submerged loading consists of two different types; submerged fill pipe method and the bottom loading method. In the submerged fill pipe method, the fill pipe extends almost to the bottom of the cargo tank. In the bottom loading method, a permanent fill pipe is attached to the cargo tank bottom. During most of submerged loading by both methods, the fill pipe opening is below the liquid surface level. Liquid turbulence is controlled significantly during submerged loading, resulting in much lower vapor generation than encountered during splash loading. As such, AP-42 makes no distinction between the two types of submerged loading; therefore, they will be considered equivalent emission control techniques.

This option has been utilized at several facilities within the SJVAPCD and was identified as BACT in several guidelines listed above. Trucks within the valley are generally required to pass an NSPS level annual test. For balance vapor systems filling trucks of this nature, a control efficiency of 98.7% (a 1.3% leak rate) is assumed pursuant to AP-42 Section 5.2.

Option 2: Vapor Collection System Served by a Refrigerated Condenser, Submerged Loading, and Use of Dry Break Couplers

This option is identified in the rescinded SJVAPCD BACT. Refrigerated condensers can generally achieve a total control efficiency of up to 95%.

Option 3: Vapor Collection System Served by a Thermal Oxidizer, Submerged Loading, and Use of Dry Break Couplers

This control option is identified in the BAAQMD BACT Guideline 109-1 and in the rescinded SJVAPCD BACT Guideline. Pursuant to the BAAQMD BACT Guideline, an overall control efficiency of 98.5% or more can be achieved using this technology.

Option 4: Vapor Collection System Served by a Carbon Adsorption System, Bottom Loading, and Use of Dry Break Couplers

This option is identified in the rescinded SJVAPCD BACT. Carbon Adsorption systems can generally achieve a total control efficiency of up to 95%.

Step 2 - Eliminate Technologically Infeasible Options

All of the items listed in step 1 are technologically feasible. Therefore, none can be eliminated.

Step 3 - Rank Remaining Control Technologies by Control effectiveness

Rank	Capture and Control Efficiency	Status
1. Submerged loading with a balance vapor control system, vapor-tight delivery vehicles, and dry break couplers	98.7%	Achieved in Practice
2. Submerged loading with a vapor capture system vented to a thermal oxidizer, and dry break couplers	98.5%	Achieved in Practice
3. Submerged loading with a vapor capture system vented to a refrigerated condenser or vented to a carbon adsorption system, and dry break couplers	95%	Technologically Feasible

Step 4 - Cost Effectiveness Analysis

Pursuant to District Policy APR 1305, *Best Available Control Technology (BACT)*, Section IX.D, a cost effectiveness analysis is not required since the applicant is proposing the most effective control technology in the ranking list from Step 3.

Step 5 - Select BACT

The applicant has proposed the most effective control option of submerged loading with a balance vapor control system, vapor-tight delivery vehicles, and dry break couplers; therefore, BACT is satisfied.

Attachments

Attachment A: Draft BACT Guideline 4.11.6

Attachment B: Rescinded BACT Guideline 4.11.6

Attachment A
Draft BACT Guideline 4.11.6

**San Joaquin Valley
Unified Air Pollution Control District**

Best Available Control Technology (BACT) Guideline 4.11.6*

Emissions Unit: Transloading of Organic and/or Non-Organic Liquids into Delivery Vehicles
Equipment Rating: All **Last Update:** TBD

Pollutant	Achieved in Practice or contained in SIP	Technologically Feasible	Alternate Basic Equipment
VOC	Submerged loading with a balance vapor recovery system, vapor-tight delivery vehicles, and the use of dry break couplers.		

BACT is the most stringent control technique for the emissions unit and class of source. Control techniques that are not achieved in practice or contained in a state implementation plan must be cost effective as well as feasible. Economic analysis to demonstrate cost effectiveness is required for all determinations that are not achieved in practice or contained in an EPA approved State Implementation Plan.

***This is a Summary Page for this Class of Source - Permit Specific BACT**

**San Joaquin Valley
Unified Air Pollution Control District**

Best Available Control Technology (BACT) Guideline 4.11.6

Emission Unit: Transloading of Organic
and/or Non-Organic Liquids
into Delivery Vehicles

Equipment Rating: n/a

References: S-34-53-0

Facility: Alon Bakersfield Refining

Date of Determination: Undetermined

Location: 3663 Gibson St
Bakersfield, CA

Pollutant	BACT Requirements
VOC	Submerged loading with a balance vapor recovery system, vapor-tight delivery vehicles, and the use of dry break couplers

BACT Status: X Achieved in practice
Small Emitter
T-BACT
Technologically feasible BACT
Contained in EPA approved SIP
Alternate Basic Equipment
The following alternate basic equipment was not cost effective:

Attachment B
Rescinded BACT Guideline 4.11.6

**San Joaquin Valley
Unified Air Pollution Control District**

Best Available Control Technology (BACT) Guideline 4.11.6*

Emissions Unit: Transloading of Organic and/or Non-Organic Liquids into Delivery Vehicles
Equipment Rating: All **Last Update:** July 11, 1996

Pollutant	Achieved in Practice or contained in SIP	Technologically Feasible	Alternate Basic Equipment
VOC	Bottom loading with a balance vapor recovery system, vapor-tight delivery vehicles, and the use of dry break couplers.		

BACT is the most stringent control technique for the emissions unit and class of source. Control techniques that are not achieved in practice or contained in a state implementation plan must be cost effective as well as feasible. Economic analysis to demonstrate cost effectiveness is required for all determinations that are not achieved in practice or contained in an EPA approved State Implementation Plan.

***This is a Summary Page for this Class of Source - Permit Specific BACT**

APPENDIX D

HRA Summary

San Joaquin Valley Air Pollution Control District

Risk Management Review

To: Homero Ramirez – Permit Services
From: Adrian Ortiz – Technical Services
Date: April 05, 2023
Facility Name: ALON BAKERSFIELD REFINING
Location: 3663 GIBSON ST (AREA 3), BAKERSFIELD
Application #(s): S-34-53-0
Project #: S-1230708

1. Summary

1.1 Risk Management Review (RMR)

Units	Prioritization Score	Acute Hazard Index	Chronic Hazard Index	Maximum Individual Cancer Risk	T-BACT Required	Special Permit Requirements
53-0	0.00	N/A ¹	0.00	N/A ¹	No	No
Project Totals	0.00	N/A ¹	0.00	N/A ¹		
Facility Totals	>1	0.00	0.00	5.48E-08		

Notes:

1. An Ambient Air Quality Analysis (AAQA) was not performed, because the District does not have approved thresholds for the assessed criteria pollutant (VOC).
2. Acute hazard index and cancer risk were not calculated for Unit 53 since there is no risk factor or the risk factor is so low that it has been determined to be insignificant for this type of unit.

1.2 Proposed Permit Requirements

To ensure that human health risks will not exceed District allowable levels; the following shall be included as requirements for:

Unit # 53-0

1. No special requirements.

2. Project Description

Technical Services received a request to perform a Risk Management Review (RMR) for the following:

- Unit -53-0: TRUCK-TO-RAILCAR RENEWABLE NAPTHA TRANSFER OPERATION SERVED BY VAPOR BALANCE SYSTEM

3. RMR Report

3.1 Analysis

The District performed an analysis pursuant to the District's Risk Management Policy for Permitting New and Modified Sources (APR 1905, May 28, 2015) to determine the possible

cancer and non-cancer health impact to the nearest resident or worksite. This policy requires that an assessment be performed on a unit by unit basis, project basis, and on a facility-wide basis. If a preliminary prioritization analysis demonstrates that:

- A unit's prioritization score is less than the District's significance threshold and;
- The project's prioritization score is less than the District's significance threshold and;
- The facility's total prioritization score is less than the District's significance threshold

Then, generally no further analysis is required.

The District's significant prioritization score threshold is defined as being equal to or greater than 1.0. If a preliminary analysis demonstrates that either the units', the project's or the facility's total prioritization score is greater than the District threshold, a screening or a refined assessment is required.

If a refined assessment is greater than one in a million but less than 20 in a million for carcinogenic impacts (cancer risk) and less than 1.0 for the acute and chronic hazard indices (non-carcinogenic) on a unit by unit basis, project basis and on a facility-wide basis the proposed application is considered less than significant. For units that exceed a cancer risk of one in a million, Toxic Best Available Control Technology (TBACT) must be implemented.

Toxic emissions for this project were calculated using the following methods:

- The safety data sheets for the the operation were reviewed by CAS# for Toxic Air Contaminants (TACs). TAC weight percentages were entered into a spreadsheet to calculate the TAC emissions.

These emissions were input into the San Joaquin Valley APCD's Hazard Assessment and Reporting Program (SHARP). In accordance with the District's Risk Management Policy, risks from the proposed unit's toxic emissions were prioritized using the procedure in the 2016 CAPCOA Facility Prioritization Guidelines. The prioritization score for this proposed facility was greater than 1.0 (see RMR Summary Table). Therefore, a refined health risk assessment was required.

The AERMOD model was used, with the parameters outlined below and meteorological data for 2013-2017 from Bakersfield (urban dispersion coefficient selected) to determine the dispersion factors (i.e., the predicted concentration or X divided by the normalized source strength or Q) for a receptor grid. These dispersion factors were input into the SHARP Program, which then used the Air Dispersion Modeling and Risk Tool (ADMRT) of the Hot Spots Analysis and Reporting Program Version 2 (HARP 2) to calculate the chronic and acute hazard indices and the carcinogenic risk for the project.

The following parameters were used for the review:

Source Process Rates					
Unit ID	Process ID	Process Material	Process Units	Hourly Process Rate	Annual Process Rate
53-0	1	VOC	Lbs.	1.09	1,375

Area Source Parameters					
Unit ID	Unit Description	Release Height (m)	X-Length (m)	Y -Length (m)	Area (m ²)
53-0	Renewable Naptha Loading Rack	1.00	1.00	1.00	1.00

* Worst case area source parameters and location used.

4. Conclusion

4.1 RMR

The cumulative acute and chronic indices for this facility, including this project, are below 1.0; and the cumulative cancer risk for this facility, including this project, is less than 20 in a million. In addition, the cancer risk for each unit in this project is less than 1.0 in a million. **In accordance with the District's Risk Management Policy, the project is approved without Toxic Best Available Control Technology (T-BACT).**

These conclusions are based on the data provided by the applicant and the project engineer. Therefore, this analysis is valid only as long as the proposed data and parameters do not change.

5. Attachments

- A. Modeling request from the project engineer
- B. Additional information from the applicant/project engineer
- C. Prioritization score w/ toxic emissions summary
- D. Facility Summary

APPENDIX E

Fugitive Emission Calculations

Alon Bakersfield Refining
Project #S-1230708 Permit Unit #S-34-54-0

Fugitive Emissions Using Correlation Equation Emission Factors

California Implementation Guidelines for Estimating Mass Emissions
of Fugitive Hydrocarbon Leaks at Petroleum Facilities

Table IV-3a: CAPCOA -Revised 1995 EPA Protocol Refinery Correlation Equations for Refineries and Marketing Terminals

Fields shaded yellow are application specific values.

Equipment Type	Service	Component Count	% Default Zeros	%Pegged (>10,000)	% in Correlation Range	Correlation Screening Value (ppm)	Default Zero Emissions (lb/day)	Pegged Emissions (lb/day)	Correlation Emissions (lb/day)	VOC emissions (lb/day)
Valves	All	14	80.0%	0.0%	20.0%	100	0.005	0.000	0.010	0.015
Pump Seals	All	2	80.0%	0.0%	20.0%	500	0.002	0.000	0.051	0.053
Pressure Relief Devices *		4	80.0%	0.0%	20.0%	100	0.001	0.000	0.007	0.008
Others	All	12	80.0%	0.0%	20.0%	500	0.002	0.000	0.060	0.062
Connectors	All	28	80.0%	0.0%	20.0%	100	0.009	0.000	0.013	0.022
Flanges	All	40	80.0%	0.0%	20.0%	100	0.001	0.000	0.050	0.050
Open-ended lines	All	0	80.0%	0.0%	20.0%	500	0.000	0.000	0.000	0.000

Total VOC Emissions (lb/day) = 0.21
Total VOC Emissions (lb/yr) = 76.5

Factors Used in Calculations - For Reference

Equipment Type	Service	Default Zero Factor (kg/hr)	Pegged Factor (kg/hr)	Correlation Equation (kg/hr)
Valves	All	7.800E-06	6.400E-02	2.27E-06(SV)^0.747
Pump Seals	All	1.900E-05	8.900E-02	5.07E-05(SV)^0.622
Pressure Relief Device				
Others	All	4.000E-06	8.200E-02	8.69E-06(SV)^0.642
Connectors	All	7.500E-06	3.000E-02	1.53E-06(SV)^0.736
Flanges	All	3.100E-07	9.500E-02	4.53E-06(SV)^0.706
Open-ended lines	All	2.000E-06	3.300E-02	1.90E-06(SV)^0.724

* : Note: The application includes "pressure relief devices", which are classified as "others" components. Since the applicant proposes a different Correlation Screening Value for the "pressure relief devices" than "others" a separate category was entered for pressure relief devices. Note "others" type includes instruments, loading arms, pressure relief valves, vents, compressor seals, dump lever arms, diaphragms, drains, hatches, meters, and polished rods stuffing boxes. This "others" component type should be applied for any component type other than connectors, flanges, open-ended lines, pumps, or valves.

APPENDIX F
Quarterly Net Emissions Change

Quarterly Net Emissions Change (QNEC)

The Quarterly Net Emissions Change is used to complete the emission profile screen for the District's PAS database. The QNEC shall be calculated as follows:

$QNEC = PE2 - PE1$, where:

QNEC = Quarterly Net Emissions Change for each emissions unit, lb/qtr.

PE2 = Post-Project Potential to Emit for each emissions unit, lb/qtr.

PE1 = Pre-Project Potential to Emit for each emissions unit, lb/qtr.

Using the values in Sections VII.C.2 and VII.C.1 in the evaluation above, quarterly PE2 and quarterly PE1 can be calculated as follows:

$PE2_{\text{quarterly}} = PE2_{\text{annual}} \div 4 \text{ quarters/year}$

$PE1_{\text{quarterly}} = PE1_{\text{annual}} \div 4 \text{ quarters/year}$

Quarterly NEC [QNEC]			
Pollutant	PE2 (lb/qtr)	PE1 (lb/qtr)	QNEC (lb/qtr)
NO _x	0	0	0
SO _x	0	0	0
PM ₁₀	356	0	0
CO	0	0	0
VOC	0	0	0

APPENDIX G

ERC Surplus Analysis

San Joaquin Valley Air Pollution Control District

Surplus ERC Analysis

Requester/Facility Name: Alon Bakersfield Refining

Date: October 11, 2023

Mailing Address: 7724 E Panama Ln
Bakersfield, CA 93307-9210

Engineer: Jesse A. Garcia

Lead Engineer: Derek Fukuda

Contact Person: David B. Nielsen

Telephone: (661) 845-0761

ERC Certificate #: S-5178-1

ERC Surplus proj #: S-1230708

I. Proposal

Alon Bakersfield Refining is proposing the use of the following Emission Reduction Credit (ERC) certificate to meet the federal offset requirements of District Project S-1230708.

Proposed ERC Certificate	
Certificate #	Criteria Pollutant
S-5178-1	VOC

The purpose of this analysis is to ensure that the emission reductions on this ERC certificate are surplus of all applicable Federal requirements; therefore, this analysis establishes the surplus value of the ERC certificate as of the date of this analysis. The current face value and surplus value of the ERC certificate evaluated in this analysis are summarized in the following table:

Criteria Pollutant: VOC

Certificate S-5178-1				
Pollutant	1 st Qtr. (lb/qtr)	2 nd Qtr. (lb/qtr)	3 rd Qtr. (lb/qtr)	4 th Qtr. (lb/qtr)
Current Value	29,099	29,898	30,307	30,215
Surplus Value	15,568	15,995	16,214	16,165

II. Individual ERC Certificate Analysis

ERC Certificate S-5178-1

A. ERC Background

Criteria Pollutant: VOC

ERC Certificate S-5178-1 is a certificate that was split out from original ERC Certificate S- 20071301-1. Original ERC Certificate S-20071301-1 was issued to Texaco Refining and Marketing, Inc. (now Alon Bakersfield Refining, S-33) on January 14, 1988 under project S-870731. The ERCs were generated from the shutdown of refinery equipment, including a thermofor catalytic cracking (TCC) unit, heaters, internal combustion engines, a CO boiler, and fugitives components. The following table summarizes the values of the original certificate and the current value of the subject certificate proposed to be utilized as a part of the current District project:

Certificates S- 20071301-1 and S-5178-1				
Pollutant	1 st Qtr. (lb/qtr)	2 nd Qtr. (lb/qtr)	3 rd Qtr. (lb/qtr)	4 th Qtr. (lb/qtr)
Original Value of Parent Certificate S- 20071301-1	130,642	130,642	130,642	130,642
Current Value of ERC Certificate S-5178-1	29,099	29,898	30,307	30,215

B. Applicable Rules and Regulations at Time of Original Banking Project

Based on the application review for the original ERC banking project, the following rules and regulations were evaluated to determine the surplus value of actual emission reductions of VOC generated by the reduction project.

1. District Rules

Kern County Rule 210.1 Standards for Authority to Construct

The application review for the original ERC banking project demonstrated that the equipment was in compliance with the applicable permit requirements.

Kern County Rule 210.3 Emission Reduction Credit Banking

The application review for the original ERC banking project demonstrated that the ERC complied with banking rule requirements at the time it was issued.

2. Federal Rules and Regulations

The application review for the original ERC banking project demonstrated that the equipment was in compliance with RACT requirements. There were no other applicable

federal rules or regulations identified that applied at the time of this original ERC banking action; therefore, no further discussion is required.

C. New or Modified Rules and Regulations Applicable to the Original Banking Project

The current versions of any applicable District and federal rules and regulations that have been adopted or amended since the original banking project was finalized will be evaluated below:

1. District Rules:

Rule 2301 - Emission Reduction Credit Banking (4/20/23)

District Rule 2301 has been amended since the original ERC certificate was issued. The requirements of this rule only apply at the time of the original banking action; therefore, no further evaluation of this rule will be performed in this analysis.

Rule 4305 - Boilers, Steam Generators, and Process Heaters – Phase 2 (8/21/03)

Rule 4306 - Boilers, Steam Generators, and Process Heaters – Phase 3 (12/17/20)

The requirements of Rules 4305 and 4306 would have been applicable to the heaters and boiler that were shut down in the original ERC banking project. However, these rules do not have any requirements for VOC emissions, or any requirements that could affect VOC emissions. The VOC emission reductions under evaluation therefore remain surplus of the requirements of these rules.

Rule 4320 - Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters Greater than 5.0 MMBtu/hr (12/17/20)

The requirements of Rule 4320 would have been applicable to the liquid fuel fired heaters and boiler that were shut down in the original ERC banking project. Rule 4320 effectively prohibits liquid fuel firing. Adjustments to the original value of the emission reductions from these units due to the requirements of this rule will be calculated in Section D of this analysis.

Rule 4455 - Components at Petroleum Refineries, Gas Liquids Processing Facilities, and Chemical Plants (6/15/23)

The requirements of Rule 4455 would have been applicable to the fugitives components that were shut down in the original ERC banking project. The rule specifies leak standards for various categories of components, leak detection and minimization/repair requirements, as well as inspection and maintenance, and recordkeeping requirements.

The fugitives components were previously subject to Kern County Rule 414.1 (adopted on 1/9/1979, last amended on 3/7/1996). The requirements of Rule 4455 are similar, but generally more stringent than those of Rule 414.1. For instance, Rule 4455 includes a minor gas leaks category with leak standards as low as 100 ppmv, compared to the

leak/major leak standard of 10,000 ppmv in both rules; allows a leak rate of $\leq 0.5\%$ of components inspected, compared to 2% in Rule 414.1; and allows a repair period of 1 – 7 days, compared to 15 days in Rule 414.1.

The staff report for Rule 4455 adopted on April 20, 2005 (page B-3) estimated that the rule would result in an 89% VOC emission reduction and the most recent version of the rule amended on June 15, 2023 estimated an additional 12.8% VOC emission reductions (page 4).

Rule 4701 - Internal Combustion Engines - Phase 1 (8/21/03)

District Rule 4701 was last amended on 8/21/2003 and approved into the District's SIP on 5/18/2004. This rule would have been applicable to the engines that were shut down in the original banking project. However, since the requirements of this rule have been superseded by the more stringent requirements of Rule 4702, adjustments to the original value of the emission reductions due to the requirements of this rule are not necessary.

Rule 4702 - Internal Combustion Engines (8/19/21)

District Rule 4702 was last amended on 8/19/2021. This rule would have been applicable to the engines that were shut down in the original banking project. Adjustments to the original value of the emission reductions from these units due to the requirements of this rule will be calculated in Section D of this analysis.

2. Federal Rules and Regulations:

40 CFR Part 60 Subpart Db - Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units

Pursuant to §60.40b(a), the affected facility to which this subpart applies is each steam generating unit that commences construction, modification, or reconstruction after June 19, 1984. Since the boiler involved in the original ERC banking was not constructed, modified, or reconstructed after June 19, 1984, it would not have been subject to the requirements of this subpart. The VOC emission reductions under evaluation therefore remain surplus of the requirements of this subpart.

40 CFR Part 60 Subpart Dc - Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units

Pursuant to §60.40c(a), the affected facility to which this subpart applies is each steam generating unit for which construction, modification, or reconstruction is commenced after June 9, 1989. Since the process heaters involved in the original ERC banking were not constructed, modified, or reconstructed after June 9, 1989, they would not have been subject to the requirements of this subpart. The VOC emission reductions under evaluation therefore remain surplus of the requirements of this subpart.

40 CFR Part 60 Subpart J - Standards of Performance for Petroleum Refineries

This subpart does not have any requirements for VOC emissions or any requirements that could affect VOC emissions. The VOC emission reductions under evaluation therefore remain surplus of the requirements of this subpart.

40 CFR Part 60 Subpart Ja - Standards of Performance for Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After May 14, 2007

The requirements of this subpart are applicable to emission units for which construction, reconstruction, or modification commenced after May 14, 2007. Since the refinery process units involved in the original ERC banking were not constructed, modified, or reconstructed after May 14, 2007, they would not have been subject to the requirements of this subpart. The VOC emission reductions under evaluation therefore remain surplus of the requirements of this subpart.

40 CFR Part 60 Subpart GGG - Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries for which Construction, Reconstruction, or Modification Commenced after January 4, 1983, and on or Before November 7, 2006

40 CFR Part 60 Subpart GGGa - Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries for which Construction, Reconstruction, or Modification Commenced After November 7, 2006

The requirements of Subpart GGG are applicable to emission units for which construction, reconstruction, or modification commenced after January 4, 1983. The requirements of Subpart GGGa are applicable to emission units for which construction, reconstruction, or modification commenced after November 7, 2006.

According to the original ERC banking evaluation, the emission units involved were last operated in November 1983, and the data used to calculate the reductions were from operations in 1982 and 1983. The subject emission units must therefore have been in operation prior to January 4, 1983. Based on a review of the available records, there are no permit applications or other documents indicating that any modifications were done in 1983. The emission units that were shut down would therefore not have been subject to the requirements of these subparts.

Since the emission units that were shut down would not have been subject to the requirements of these subparts, the VOC emission reductions under evaluation remain surplus of the requirements of these subparts.

40 CFR Part 60 Subpart JJJJ - Standards of Performance for Stationary Spark Ignition Internal Combustion Engines

The requirements of this subpart are applicable to engines that were modified or reconstructed after June 12, 2006. Since the engines involved in the original ERC banking were not constructed, modified, or reconstructed after June 12, 2006, they would not have been subject to the requirements of this subpart. The VOC emission

reductions under evaluation therefore remain surplus of the requirements of this subpart.

40 CFR Part 63 Subpart CC - National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries

The requirements of this subpart are applicable to certain specified petroleum refining process units and to related emissions points that are located at a plant site that is a major source of HAP emissions. A major source of HAP emissions is a plant site that emits or has the potential to emit any single HAP at a rate of 10 tons or more per year or any combination of HAP at a rate of 25 tons or more per year. Based on data from the engineering evaluation for Project S-851028 (banking of ERC resulting from the installation of a CO boiler to control fluid coker exhaust emissions, 1976/77),⁴ the post-project emission rate for benzene was 491 tons/year.⁵ This facility would therefore have been a major HAP source, and would have been subject to the requirements of this subpart.

Pursuant to §63.640, the requirements of this subpart are applicable to the following emission points from petroleum refining process units: miscellaneous process vents, storage vessels, wastewater streams and treatment operations, equipment leaks, gasoline loading racks, marine vessel loading operations, heat exchange systems, and releases associated with the decoking operations of a delayed coking unit. Pursuant to §63.640(d)(4), the requirements of this subpart are not applicable to emissions from catalytic cracking units. Thus, of the equipment that was shut down, only the fugitives components (i.e. equipment leaks) would have been subject to the requirements of this subpart.

Pursuant to §63.648(a), existing sources⁶ shall meet the equipment leak standards of this subpart by implement the standards in 40 CFR 60 Subpart VV. 40 CFR 60 Subpart VV specifies leak detection and repair (LDAR) requirements for various categories of components, including valves in gas/vapor service and in light liquid service (§60.482-7) and valves in heavy liquid service and connectors (§60.482-8). The specified requirements, including a leak detection threshold of 10,000 ppm and a 15-day repair period, are generally similar to those in Kern County Rule 414.1.

Since the components that were shut down were already subject to similar LDAR requirements under Kern County Rule 414.1, the VOC emission reductions under evaluation remain surplus of the requirements of this subpart.

⁴ Note that the fluid coker and CO boiler in question are the same units that were subsequently shut down in Project S-870731.

⁵ The pollutant of concern is identified as 'benzene' in the pre-project discussion and as 'hydrocarbons' in the post-project discussion, and is assumed in the current evaluation to be the same pollutant. Also note that the pre-project emission rate for benzene was 2,693 tons/year. Assuming the CO boiler was capable of a control efficiency of 99%, which is unlikely, then the post-project emission rate would be 27 tons/year, which is still clearly above the major source threshold.

40 CFR Part 63 Subpart UUU - National Emission Standards for Hazardous Air Pollutants for Petroleum Refineries: Catalytic Cracking Units, Catalytic Reforming Units, and Sulfur Recovery Units

The requirements of this subpart are applicable to petroleum refineries that are located at a major source of HAP emissions. The subpart applies to each new, reconstructed, or existing affected source at a petroleum refinery. However, pursuant to §63.1562(f), the subpart does not apply to a thermal catalytic cracking unit. Thus, the subpart would not have been applicable to any of the emission units that were shut down. The VOC emission reductions under evaluation therefore remain surplus of the requirements of this subpart.

40 CFR Part 63 Subpart ZZZZ - National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

The requirements of this subpart are applicable to new and existing engines at major and area sources of HAP emissions. Existing engines are those that commenced construction or reconstruction before June 12, 2006. Since the engines involved in the original ERC banking were shut down prior to June 12, 2006, they would have been existing engines.

Pursuant to §63.6602, existing stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions, must comply with the emission limitations and other requirements in Table 2c to this subpart. The following excerpt from Table 2c shows the applicable requirements for the subject engines:⁷

For each . . .	You must meet the following requirement, except during periods of startup . . .	During periods of startup you must . . .
11. Non-emergency, non-black start 4SRB stationary RICE 100≤HP≤500	Limit concentration of formaldehyde in the stationary RICE exhaust to 10.3 ppmvd or less at 15 percent O ₂ .	

The emission rates used in the banking project are from AP-42, Table 5.1-1, where the aldehydes emission rate is indicated as 0.1 lb/MMBtu. However, Table 3.2-3⁸ indicates a formaldehyde emission rate of 0.0205 lb/MMBtu, which is equivalent to approximately 8.5 ppmv at 15% O₂. Thus, since the formaldehyde emission rate that would have been applicable when the emission reductions were banked is lower than the one specified in the subpart, there would have been no effect from implementation of the requirement in the subpart. The VOC emission reductions under evaluation therefore remain surplus of the requirements of this subpart.

⁷ Based on the information from the original ERC banking evaluation, all the engines were rated 300 and 330 bhp. Absent any information to indicate otherwise, the engines are assumed to be 4-stroke rich burn (4SRB) units, as this is the most likely standard configuration for the type of engines concerned.

⁸ Uncontrolled Emission Factors for 4-Stroke Rich-Burn Engines

40 CFR Part 63 Subpart DDDDD National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters

This subpart is applicable to industrial, commercial, or institutional boilers or process heaters that are located at, or are part of, a major source of HAP emissions.

Pursuant to §63.7500(e), units designed to burn refinery gas are not subject to any emission limits in this subpart.

Pursuant to the requirements in Table 2 of the subpart, units that are designed to burn liquid fuel are subject emission limits for HCl, mercury, PM, and CO. There are no requirements for VOC emissions. As such, this regulation will not be considered further.

D. Surplus at Time of Use Adjustments to ERC Quantities

As demonstrated in the section above, rules and regulations that would have been applicable to permit units in the original banking project have been adopted or amended since the date on which the original banking project was finalized. The emissions limits from these new/modified rules and regulations will be compared to the pre-project and post-project emission limits of each permit unit included in the original banking project to determine any discounting of the original surplus value of emission reductions due to the new/modified rules or regulations.

The quantity of ERCs issued from each permit unit in the original banking project, the percentage of that amount which was discounted due to a new/modified rule or regulation, and the current surplus value of the quantity of ERCs from each permit unit are calculated in the tables below:

Surplus Value Calculations for Gas-Fired IC Engines		
Emission Reductions Contributing to ERC (A)	303,348 ⁹	lb/year
Pre-Project (EF1)	1,400	lb/MMscf
Post-Project (EF2)	0	lb/MMscf
Most Stringent Applicable Rule (EF _{Rule}): ¹⁰ Rule 4702, 5.2.2, Table 2, Category 1.d.	320.3	lb/MMscf
Percent Discount* (B)	77.1%	--
Surplus Reductions Contributing to ERC (A) x [1- (B)]	69,467	lb/year

*If $EF_{Rule} < EF2$, Percent Discount = 100%, or
If $EF_{Rule} > EF1$, Percent Discount = 0%, otherwise,
 $(EF1 - EF_{Rule}) \times 100 \div (EF1 - EF2)$

⁹ (480.52 + 350.57) lb/day x 365 days/yr.

¹⁰ As previously discussed, the engines are assumed to be rich burn units. The applicable limit in District Rule 4702 is Section 5.2.2, Table 2, Category 1.d., i.e. 250 ppmv @ 15% O₂. This was converted to 0.3203 lb/MMBtu, which is equivalent to 320.3 lb/MMscf.

Surplus Value Calculations for TCC Kilns		
Emission Reductions Contributing to ERC (A)	205,959	lb/year
Pre-Project (EF1)	87	lb/1,000 bbl feed
Post-Project (EF2)	0	lb/1,000 bbl feed
Most Stringent Applicable Rule (EF _{Rule}): RACT (AP-42, Table 5.1-1, 4/15)	87	lb/1,000 bbl feed
Percent Discount* (B)	0%	--
Surplus Reductions Contributing to ERC (A) x [1- (B)]	205,959	lb/year

*If $EF_{Rule} < EF2$, Percent Discount = 100%, or
 If $EF_{Rule} > EF1$, Percent Discount = 0%, otherwise,
 $(EF1 - EF_{Rule}) \times 100 \div (EF1 - EF2)$

Surplus Value Calculations for Process Heaters - Gas-Firing		
Emission Reductions Contributing to ERC (A)	971	lb/year
Pre-Project (EF1)	2.8	lb/MMscf
Post-Project (EF2)	0	lb/MMscf
Most Stringent Applicable Rule (EF _{Rule}): RACT (AP-42, Table 1.4-2, 7/98)	5.5	lb/MMscf
Percent Discount* (B)	0%	--
Surplus Reductions Contributing to ERC (A) x [1- (B)]	971	lb/year

*If $EF_{Rule} < EF2$, Percent Discount = 100%, or
 If $EF_{Rule} > EF1$, Percent Discount = 0%, otherwise,
 $(EF1 - EF_{Rule}) \times 100 \div (EF1 - EF2)$

Surplus Value Calculations for Process Heaters – Oil Firing		
Emission Reductions Contributing to ERC (A)	95	lb/year
Pre-Project (EF1)	0.28	lb/1,000 gal
Post-Project (EF2)	0	lb/1,000 gal
Most Stringent Applicable Rule (EF _{Rule}): ¹¹ Rule 4320, 5.4.2	0	lb/1,000 gal
Percent Discount* (B)	100%	--
Surplus Reductions Contributing to ERC (A) x [1- (B)]	0	lb/year

*If EF_{Rule} < EF2, Percent Discount = 100%, or
If EF_{Rule} > EF1, Percent Discount = 0%, otherwise,
(EF1 – EF_{Rule}) x 100 ÷ (EF1 – EF2)

Surplus Value Calculations for Gas-Fired CO Boiler		
Emission Reductions Contributing to ERC (A)	2,168	lb/year
Pre-Project (EF1)	2.8	lb/MMscf
Post-Project (EF2)	0	lb/MMscf
Most Stringent Applicable Rule (EF _{Rule}): RACT (AP-42, Table 1.4-2, 7/98)	5.5	lb/MMscf
Percent Discount* (B)	0%	--
Surplus Reductions Contributing to ERC (A) x [1- (B)]	2,168	lb/year

*If EF_{Rule} < EF2, Percent Discount = 100%, or
If EF_{Rule} > EF1, Percent Discount = 0%, otherwise,
(EF1 – EF_{Rule}) x 100 ÷ (EF1 – EF2)

¹¹ Rule 4320 prohibits the use of liquid fuel, except on a limited basis during utility natural gas curtailment. Since the units at this facility were not fired on utility natural gas, the curtailment exemption would not have been applicable.

Surplus Value Calculations for Fugitives Components		
Emission Reductions Contributing to ERC (A)	10,027	lb/year
Pre-Project (EF1)	100%	Baseline emissions before Rule 4455 implementation
Post-Project (EF2)	0	
Most Stringent Applicable Rule (EF _{Rule}): 2005 version of Rule 4455 (B)	89%	% of emission reductions after implementation of Rule (per Rule 4455 staff report)
Most Stringent Applicable Rule (EF _{Rule}): 2023 version of Rule 4455 (C)	12.8%	% of emission reductions after implementation of Rule (per Rule 4455 staff report)
Surplus Reductions Contributing to ERC (A) x [1- (B)] x [1- (C)]	962	lb/year

Total Discount Percentage for ERC Certificate

The total percentage by which ERC S-20071301-1 is discounted due to new and modified rules and regulations is summarized in the following table:

Total Percent Discount Summary for ERC Certificate S-20071301-1			
Permit(s)	Quantity of ERCs Issued (lb/year)	Percent Discount	Surplus Value (lb/year)
IC Engines	303,348	77.1%	69,467
TCC Kiln	205,959	0%	205,959
Process Heaters - Gas-Firing	971	0%	971
Process Heaters - Oil-Firing	95	100%	0
CO Boiler	2,168	0%	2,168
Fugitive sources	10,027	90.4%	962
Total	522,568	--	279,668
Total Percent Discount*		46.5%	

* Total Percent Discount = [(Total Amount of ERCs Issued – Total Surplus Value) ÷ Total Amount of ERCs Issued] x 100

E. Surplus Value of ERC Certificate

As shown in the previous section, the surplus at time of use value of this ERC certificate will be adjusted. The current face value of the ERC certificate, the percentage by which the current value is discounted based on the surplus analysis in the previous section, and the current calculated surplus value of the ERC certificate are shown in the table below:

ERC Certificate S-5178-1 – Criteria Pollutant VOC					
		1 st Qtr. (lb/qtr)	2 nd Qtr. (lb/qtr)	3 rd Qtr. (lb/qtr)	4 th Qtr. (lb/qtr)
(A)	Current ERC Quantity	29,099	29,898	30,307	30,215
(B)	Percent Discount	46.5%	46.5%	46.5%	46.5%
(C) = (A) x [1 – (B)]	Surplus Value	15,568	15,995	16,214	16,165

APPENDIX H

ERC Withdrawal Calculations

VOC		1 st Quarter (lb)	2 nd Quarter (lb)	3 rd Quarter (lb)	4 th Quarter (lb)
a	ERC S-5178-1	29,099	29,898	30,307	30,215
b	ERC S-5178-1 Surplus Value Percent Discount	46.5%	46.5%	46.5%	46.5%
c	ERC S-5178-1 Surplus Value [a x (1 – b)]	15,568	15,995	16,214	16,165
d	Offsets Required (Includes distance offset ratio)	534	534	534	534
e	Surplus Offsets Used from ERC S-5178-1 Including Surplus Discount	534	534	534	534
f	Total Offsets Used from ERC S-5178-1 Including Surplus Discount [e ÷ (1 – b)]	998	998	998	998
g	Amount Remaining	28,101	28,900	29,309	29,217
h	Credits reissued under ERC S-YYYY-1	28,101	28,900	29,309	29,217

APPENDIX I

Compliance Certification

May 8, 2023

Erin Scott
San Joaquin Valley Air Pollution Control District
34946 Flyover Court
Bakersfield, CA 93308

Dear Ms. Scott,

Alon Bakersfield Refining is providing the following compliance statement for the Renewable Fuels Project, in accordance with Rule 2201, Section 4.15 "Additional Requirements for New Major Sources and Federal Major Modifications."

All major stationary sources in California owned or operated by Alon Bakersfield Refining, or by any entity controlling, controlled by, or under common control with Alon Bakersfield Refining, and which are subject to emission limitations, are in compliance or on a schedule for compliance with all applicable emission limitations and standards. The Alon Bakersfield Refinery is the only major stationary source subject to this statement.

Based on information and belief formed after reasonable inquiry, the statements and information in this document are true, accurate, and complete.

Please contact me if you have any questions regarding this certification.

Sincerely,



Matthew Jalali
EHS Director

Bakersfield Renewable Fuels, LLC
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P.O. Box 0152, Bakersfield, CA 93308-0152
Tel: 661-742-4600 • Fax: 661-326-4503