San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

FEB 0 8 2018

Shams Hasan
E&B Natural Resources
3000 James Road
Bakersfield, CA 93308

Re: Notice of Preliminary Decision - Authority to Construct
Facility Number: S-4034
Project Number: S-1174061

Dear Mr. Hasan:

Enclosed for your review and comment is the District's analysis of E&B Natural Resources's application for an Authority to Construct for a flare, in western Kern County.

The notice of preliminary decision for this project will be published approximately three days from the date of this letter. After addressing all comments made during the 30-day public notice and 45-day EPA notice comment periods, the District intends to issue the Authority to Construct. Please submit your written comments on this project within the 30-day public comment period, as specified in the enclosed public notice.

Thank you for your cooperation in this matter. If you have any questions regarding this matter, please contact Mr. David Torii of Permit Services at (661) 392-5620.
Sincerely,

Arnaud Marjollet
Director of Permit Services

AM:dbt

Enclosures

cc: Tung Le, CARB (w/ enclosure) via email
cc: Gerardo C. Rios, EPA (w/ enclosure) via email

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San Joaquin Valley Air Pollution Control District
Authority to Construct Application Review

Facility Name:	E&B Natural Resources	Date:	1/31/18
Mailing Address:	3000 James Road Bakersfield, CA 93308	Engineer:	David Torii
		Lead Engineer:	Rich Karrs
Contact Person:	Shams Hasan		
Telephone:	661-616-4664		
Application #(s):	S-4034-23-1, 24-1, '29-3 and '41-0		
Project #:	1174061		
Deemed Complete:	6/24/17		

I. Proposal

E&B Natural Resources (EBNR) has requested an Authority to Construct (ATC) permit for the installation of a 2.00 MMBtu/hr flare to serve as a backup control device for the vapor control system (VCS) listed on tank S-4034-29. To mitigate the flare's VOC increase tank S-4034-23 and '24's TVP limits will be lowered.

II. Applicable Rules

Rule 2201	New and Modified Stationary Source Review Rule (2/18/16)
Rule 2410	Prevention of Significant Deterioration (6/16/11)
Rule 2520	Federally Mandated Operating Permits (6/21/01)
Rule 4001	New Source Performance Standards (4/14/99)
Rule 4101	Visible Emissions (2/17/05)
Rule 4102	Nuisance (12/17/92)
Rule 4201	Particulate Matter Concentration (12/17/92)
Rule 4301	Fuel Burning Equipment (12/17/92)
Rule 4311	Flares (6/18/09)
Rule 4409	Components at Light Crude Oil Production Facilities, Natural Gas Production Facilities, and Natural Gas Processing Facilities (4/30/05)
Rule 4623	Storage of Organic Liquids (05/19/05)
Rule 4801	Sulfur Compounds (12/17/92)
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 flare will be located at the Rio Viejo lease, within the SW/4 of Section 34, Township 12N, Range 21W. Both the flare and tanks S-4034-23 and '24 are located in ENBR's Light Oil Western stationary source. 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

Rio Viejo's tank VCS is currently served by the 0.5 MMBtu/hr heater listed on S-4034-29 and a permit exempt well pump IC engine. The proposed flare will be used as a third means of controlling the Rio Viejo tanks' vapors when the existing heater and IC engine are not available. The ATC requires that the flare not operate more than 30 consecutive days during such periods.

V. Equipment Listing

Pre-Project Equipment Description (see Permits in Appendix B):

S-4034-23-0: 250 BBL CRUDE OIL STORAGE TANK WITH A PV VALVE (VOIGT LEASE)

S-4034-24-0: 200 BBL CRUDE OIL WASH TANK (13.4 FT. DIA. X 8 FT. HIGH) WITH A PV VALVE (VOIGT LEASE)

S-4034-29-2: 500 BBL FIXED ROOF CRUDE OIL STOCK TANK WITH VAPOR CONTROL SYSTEM INCLUDING ONE 0.5 MMBTU/HR NATURAL GAS-FIRED HEATER (RIO VIEJO)

Proposed ATCs:

S-4034-23-1: MODIFICATION OF 250 BBL CRUDE OIL STORAGE TANK WITH A PV VALVE (VOIGT LEASE): **LOWER TVP LIMIT**

S-4034-24-1: MODIFICATION OF 200 BBL CRUDE OIL WASH TANK (13.4 FT. DIA. X 8 FT. HIGH) WITH A PV VALVE (VOIGT LEASE): **LOWER TVP LIMIT**

S-4034-29-3: MODIFICATION OF 500 BBL FIXED ROOF CRUDE OIL STOCK TANK WITH VAPOR CONTROL SYSTEM INCLUDING ONE 0.5 MMBTU/HR NATURAL GAS-FIRED HEATER (RIO VIEJO): **CONNECT VAPOR CONTROL SYSTEM TO FLARE S-4034-41**

S-4034-41-0: COANDA-EFFECT PRODUCED GAS FLARE SERVING VAPOR CONTROL SYSTEM LISTED ON S-4034-29 (RIO VIEJO)

Post Project Equipment Description:

S-4034-23-1: 250 BBL CRUDE OIL STORAGE TANK WITH A PV VALVE (VOIGT LEASE)

S-4034-24-1: 200 BBL CRUDE OIL WASH TANK (13.4 FT. DIA. X 8 FT. HIGH) WITH A PV VALVE (VOIGT LEASE)

S-4034-29-3: 500 BBL FIXED ROOF CRUDE OIL STOCK TANK WITH VAPOR CONTROL SYSTEM INCLUDING ONE 0.5 MMBTU/HR NATURAL GAS-FIRED HEATER AND FLARE S-4034-41 (RIO VIEJO)

S-4034-41-0: COANDA-EFFECT PRODUCED GAS FLARE SERVING VAPOR CONTROL SYSTEM LISTED ON S-4034-29 (RIO VIEJO)

VI. Emission Control Technology Evaluation

The tank vapor control system collects vapors from the tanks, removes entrained liquid in knockout vessels, and currently routes the vapors to a heater and an IC engine. The efficiency of the vapor control system is at least 95%.

VII. General Calculations

A. Assumptions

- Facility operates 8760 hours per year.

Tanks S-4034-23 and '24:

- The tanks emit only volatile organic compounds (VOCs),
- Pre-project TVP limit 11.0 psia (PTOs S-4034-23 and '24, Rule 4623 limit)
- Post-project TVP limit 6.5 psia (applicant)
- Pre and post-project throughput 50 bbl/day (PTOs S-4034-23 and '24)

Flare S-4034-41-0:

- Flow rate: 35,000 acf/day (applicant)
- hhv: 1400 Btu/ft3 (applicant and gas analysis)
- Sulfur content: 5 gr-S/100 dscf (applicant)
- Pilot emissions are negligible.

As shown below in section VIII, allowing S-4034-29's VCS to vent to the flare is not an NSR modification; therefore, calculations are not required for ATC S-4034-29-3.

B. Emission Factors

The flare's VOC emission factor is calculated using the below mass balance calculation procedure:

EF flare (lb/MMBtu)=

EF flare (lb/MMBtu)= 1.2 (100)(Wt % VOCs)(density gas)/hhv

where:

- 1.2 is a 20% buffer to account for variability on flared gas VOC content
- Destruction efficiency = 99%
- hhv is the higher heating value of the flared gas = 1,400 Btu/ft3 (applicant and gas analysis, see Appendix C)
- Density gas = 0.0683 lb/ft3 (gas analysis, see Appendix C)
- Wt% VOC is the percentage by weight of VOCs in the gas to be flared = 49.3 (applicant and gas analysis)

EF flare (lb/MMBtu) = (1.2)(100)(49.3)(0.0683)/1400
= 0.29 lb-VOC/MMBtu

Flare Emission Factors		
Pollutant	Emission Factor (lb/MMBtu)	Source
NO_X	0.068	AP-42 Section 13.5
SO_X	0.0143*	Applicant Proposed
PM_{10}	0.008	AP-42 Section 13.5
CO	0.370	AP-42 Section 13.5
VOC	0.29	AP-42 Section 13.5

$$*\left(\frac{64\,lb\cdot SO_x}{32\,lb\cdot S}\right)\frac{5\,gr\cdot S}{100\,dscf}\left(\frac{1\,lb}{7{,}000\,gr}\right)\frac{dscf}{1{,}000\,Btu}\left(\frac{10^6\,Btu}{MMBtu}\right)=0.0143\frac{lb\cdot SO_x}{MMBtu}$$

Both the daily and annual PE's for the tanks are based on the results from the District's Microsoft Excel spreadsheets for Tank Emissions - Fixed Roof Crude Oil greater than 26° API.

C. Calculations

1. Pre-Project Potential to Emit (PE1)

PE1		
Pollutant	**Daily Emissions (lb/day)**	**Annual Emissions (lb/year)**
S-4034-23	41.5	15,140
S-4034-24	29.5	10,759
Total:		25,899

2. Post Project Potential to Emit (PE2)

PE2		
Pollutant	**Daily Emissions (lb/day)**	**Annual Emissions (lb/year)**
S-4034-23-1	14.9	5,455
S-4034-24-1	5.8	2,105
Total:		7,560

The potential to emit for the flare is calculated as follows, and summarized in the table below:

$PE2_{NOx}$ = (0.068 lb/MMBtu)(35,000 acf/day)(1400 Btu/acf)/(MM/10^6)
= 3.3 lb NOx/day
= (0.068 lb/MMBtu)(35,000 acf/day)(1400 Btu/acf)/(MM/10^6)(365 day/year)
= 1,216 lb NOx/year

PE2		
Pollutant	**Daily Emissions (lb/day)**	**Annual Emissions (lb/year)**
NO_X	3.3	1,216
SO_X	0.7	256
PM_{10}	0.4	143
CO	18.1	6,617
VOC	14.2	5,187

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.

SSPE1 (lb/year)					
Permit Unit	**NO_X**	**SO_X**	**PM_{10}**	**CO**	**VOC**
ERC S-4408-1	0	0	0	0	41
ERC S-4408-2	354	0	0	0	0
ERC S-4408-3	0	0	0	1,049	0
ERC S-4408-4	0	0	210	0	0
ERC S-4408-5	0	5	0	0	0
S-4034-1	0	0	0	0	2,300*
S-4034-2	0	0	0	0	1,705*
S-4034-7	0	0	0	0	726
S-4034-8	0	0	0	0	716
S-4034-13	0	0	0	0	332*
S-4034-14	0	0	0	0	183*
S-4034-15	0	0	0	0	332*
S-4034-16	0	0	0	0	325*
S-4034-17	0	0	0	0	190*
S-4034-18	0	0	0	0	190*
S-4034-19	0	0	0	0	864
S-4034-22	0	0	0	0	2,096
S-4034-23	0	0	0	0	**15,140**
S-4034-24	0	0	0	0	**10,759**

SSPE1 (lb/year)					
Permit Unit	**NO_X**	**SO_X**	**PM_{10}**	**CO**	**VOC**
S-4034-25	2,482	104	949	13,505	2,330
S-4034-28	0	0	0	0	100
S-4034-29	438	63	33	368	336*
S-4034-30	0	0	0	0	69*
S-4034-31	0	0	0	0	1,017
S-4034-33	0	0	0	0	665
ATC S-4034-35-0	0	0	0	0	510
ATC S-4034-36-0	0	0	0	0	1,787
ATC S-4034-37-0	0	0	0	0	1,937
S-4034-38	0	0	0	0	44
S-4034-39	0	0	0	0	477
S-4034-40	0	0	0	0	492
SSPE1	**3,274**	**172**	**1192**	**14,922**	45,663
SSPE1**	**2,920**	**167**	**982**	**13,873**	39,660

*fugitive emissions
**SSPE1 excluding fugitive emissions

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.

SSPE2 (lb/year)					
Permit Unit	**NO_X**	**SO_X**	**PM_{10}**	**CO**	**VOC**
ERC S-4408-1	0	0	0	0	41
ERC S-4408-2	354	0	0	0	0
ERC S-4408-3	0	0	0	1,049	0
ERC S-4408-4	0	0	210	0	0
ERC S-4408-5	0	5	0	0	0
S-4034-1	0	0	0	0	2,300*
S-4034-2	0	0	0	0	1,705*
S-4034-7	0	0	0	0	726
S-4034-8	0	0	0	0	716
S-4034-13	0	0	0	0	332*
S-4034-14	0	0	0	0	183*
S-4034-15	0	0	0	0	332*
S-4034-16	0	0	0	0	325*
S-4034-17	0	0	0	0	190*
S-4034-18	0	0	0	0	190*
S-4034-19	0	0	0	0	864
S-4034-22	0	0	0	0	2,096

SSPE2 (lb/year)					
Permit Unit	**NO_X**	**SO_X**	**PM_{10}**	**CO**	**VOC**
S-4034-23	0	0	0	0	**5,455**
S-4034-24	0	0	0	0	**2,105**
S-4034-25	2,482	104	949	13,505	2,330
S-4034-28	0	0	0	0	100
S-4034-29	438	63	33	368	336*
S-4034-30	0	0	0	0	69*
S-4034-31	0	0	0	0	1,017
S-4034-33	0	0	0	0	665
ATC S-4034-35-0	0	0	0	0	510
ATC S-4034-36-0	0	0	0	0	1,787
ATC S-4034-37-0	0	0	0	0	1,937
S-4034-38	0	0	0	0	44
S-4034-39	0	0	0	0	477
S-4034-40	0	0	0	0	492
S-4034-41-0	**1,216**	**256**	**143**	**6,617**	**5,187**
SSPE2	**4,490**	**428**	**1335**	**21,539**	32,511
SSPE2**	**4,136**	**423**	**1,125**	**20,490**	26,508

*fugitive emissions and ERCs
**SSPE1 excluding fugitive emissions

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)
- Fugitive emissions, except for the specific source categories specified in 40 CFR 51.165

Rule 2201 Major Source Determination (lb/year)						
	NO_X	**SO_X**	**PM_{10}**	**$PM_{2.5}$**	**CO**	**VOC**
SSPE1	2,920	167	982	982	13,873	39,660
SSPE2	4,136	423	1,125	1,125	20,490	26,508
Major Source Threshold	20,000	140,000	140,000	140,000	200,000	20,000
Major Source?	No	No	No	No	No	Yes

Note: PM2.5 assumed to be equal to PM10

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 or the equipment evaluated under this project is not listed as one of the categories specified in 40 CFR 52.21 (b)(1)(iii). Therefore the PSD Major Source threshold is 250 tpy for any regulated NSR pollutant.

PSD Major Source Determination (tons/year)						
	NO_2	VOC	SO_2	CO	PM	PM_{10}
Estimated Facility PE before Project Increase	1.5	19.8	0.1	6.4	0.5	0.5
PSD Major Source Thresholds	250	250	250	250	250	250
PSD Major Source ? (Y/N)	n	n	n	n	n	n

As shown above, the facility is not an existing PSD major source for any regulated NSR pollutant expected to be emitted at this facility.

6. Baseline Emissions (BE)

The BE calculation (in lb/year) is performed pollutant-by-pollutant for each unit within the project 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 flare is a new emissions unit, BE = PE1 = 0 for all pollutants.

BE VOC

Pursuant to Rule 2201, a Clean Emissions Unit is defined as an emissions unit that is "equipped with an emissions control technology with a minimum control efficiency of at least 95% or is equipped with emission control technology that meets the requirements for achieved-in-practice BACT as accepted by the APCO during the five years immediately prior to the submission of the complete application.

Tanks S-4034-23 and '24 are equipped with PV-vents set to within 10% of maximum allowable pressure, which meets the requirements for achieved-in-practice BACT. Therefore, their BE=PE1.

7. SB 288 Major Modification

SB 288 Major Modification is defined in 40 CFR Part 51.165 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 not a major source for NOx, SOx or PM10; therefore, this project does not constitute an SB 288 major modification for NOx, SOx or PM10.

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 the SB 288 Major Modification calculation is required.

SB 288 Major Modification Thresholds			
Pollutant	**Project PE2 (lb/year)**	**Threshold (lb/year)**	**SB 288 Major Modification Calculation Required?**
NO_x	NA	50,000	No
SO_x	NA	80,000	No
PM_{10}	NA	30,000	No
VOC	12,747	50,000	No

Since no SB 288 Major Modification Thresholds are surpassed with this project, this project does not constitute an SB 288 Major Modification.

8. 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.

The determination of Federal Major Modification is based on a two-step test. For the first step, only the emission *increases* are counted. Emission decreases may not cancel out the increases for this determination.

Step 1

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

The project's combined total emission increases 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	NA	0	
VOC	5,187	0	Yes
PM_{10}	NA	30,000	
$PM_{2.5}$	NA	20,000	
SO_x	NA	80,000	

Since there is an increase in VOC emissions, this project constitutes a Federal Major Modification. Federal Offset quantities are calculated below.

Federal Offset Quantities:

The Federal offset quantity is only calculated only for the pollutants for which the project is a Federal Major Modification. 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) during the baseline period for each emission unit times the applicable federal offset ratio. There are no special calculations performed for units covered by an SLC.

The applicant states that the tanks weren't used during the baseline period; therefore, their actual emissions are zero.

VOC **Federal Offset Ratio 1.5**

Permit No.	Actual Emissions (lb/year)	Potential Emissions (lb/year)	Emissions Change (lb/yr)
S-4034-23-1	0	5,455	5,455
S-4034-24-1	0	2,105	2,105
S-4034-41-0	0	5,187	5,187
		Net Emission Change (lb/year):	12,747
		Federal Offset Quantity: (NEC * 1.5)	19,121

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)

I. Project Emissions Increase - New Major Source Determination

The post-project potentials to emit from all new and modified units are compared to the PSD major source thresholds to determine if the project constitutes a new major source subject to PSD requirements.

The facility or the equipment evaluated under this project is not listed as one of the categories specified in 40 CFR 52.21 (b)(1)(i). The PSD Major Source threshold is 250 tpy for any regulated NSR pollutant.

PSD Major Source Determination: Potential to Emit (tons/year)						
	NO_2	VOC	SO_2	CO	PM	PM_{10}
Total PE from New and Modified Units	0.6	6.4	0.1	3.3	0.1	0.1
PSD Major Source threshold	250	250	250	250	250	250
New PSD Major Source?	n	n	n	n	n	n

As shown in the table above, the potential to emit for the project, by itself, does not exceed any PSD major source threshold. Therefore Rule 2410 is not applicable and no further analysis is required.

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 A.

VIII. Compliance Determination

Rule 2201 New and Modified Stationary Source Review Rule

This rule applies to all new stationary sources and all modifications to existing stationary sources which are subject to the District permit requirements and after construction emit or may emit one or more affected pollutant.

3.25.1 A modification is an action including at least one of the following items:

3.25.1.1 Any change in hours of operation, production rate, or method of operation of an existing emissions unit, which would necessitate a change in permit conditions.

Authorizing S-4034-29's VCS to vent to flare S-4034-41 will not result in a change in hours of operation, production rate, or method of operation of an existing emissions unit, which would necessitate a change in permit conditions.

3.25.1.2 Any structural change or addition to an existing emissions unit which would necessitate a change in permit conditions. Routine replacement shall not be considered to be a structural change

Authorizing S-4034-29's VCS to vent to flare S-4034-41 will not result in any structural change or addition to an existing emissions unit which would necessitate a change in permit conditions.

3.25.1.3 An increase in emissions from an emissions unit caused by a modification of the Stationary Source when the emissions unit is not subject to a daily emissions limitation.

Authorizing S-4034-29's VCS to vent to flare S-4034-41 will not result in an increase in emissions from an emissions unit caused by a modification of the Stationary Source when the emissions unit is not subject to a daily emissions limitation

3.25.1.4 Addition of any new emissions unit which is subject to District permitting requirements.

Authorizing S-4034-29's VCS to vent to flare S-4034-41 will not result in the addition of any new emissions unit which is subject to District permitting requirements.

As shown above this project is not a Modification to S-4034-29 and the facility is not a new stationary source; therefore, ATC S-4034-29-3 is not subject to Rule 2201 and no further discussion is required.

A. Best Available Control Technology (BACT)

1. BACT Applicability

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*:

a. Any new emissions unit with a potential to emit exceeding two pounds per day,
b. The relocation from one Stationary Source to another of an existing emissions unit with a potential to emit exceeding two pounds per day,
c. 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
d. 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 flare with a PE greater than 2 lb/day for NO_x, CO, and VOC. BACT is triggered for NO_x and VOC only since the PEs are greater than 2 lb/day. However BACT is not triggered for CO since the SSPE2 for CO is not greater than 200,000 lb/year, as demonstrated in Section VII.C.5 above.

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

AIPE = PE2 – HAPE

Where,

AIPE = Adjusted Increase in Permitted Emissions, (lb/day)
PE2 = Post-Project Potential to Emit, (lb/day)
HAPE = Historically Adjusted Potential to Emit, (lb/day)

HAPE = PE1 x (EF2/EF1)

Where,

PE1 = The emissions unit's PE prior to modification or relocation, (lb/day)
EF2 = The emissions unit's permitted emission factor for the pollutant after modification or relocation. If EF2 is greater than EF1 then EF2/EF1 shall be set to 1
EF1 = The emissions unit's permitted emission factor for the pollutant before the modification or relocation

AIPE = PE2 – (PE1 * (EF2 / EF1))

For tanks S-4034-23 and '24 EF1 = EF2; therefore, AIPE = PE2 – PE1

S-4034-23-1:

AIPE = 14.9 – 41.5
= 0.0 lb-VOC/day

S-4034-24-1:

AIPE = 5.8 – 29.5
= 0.0 lb-VOC/day

As demonstrated above, the AIPE is not greater than 2.0 lb/day. Therefore BACT is not triggered for S-4034-23-1 and '24-1

d. SB 288/Federal Major Modification

As discussed in Sections VII.C.7 and VII.C.8 above, this project does constitute 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

The SJVUAPCD BACT Clearinghouse Guideline 1.4.1 Waste Gas Flare - 15.3 MMBtu/hr, Serving a Tank Vapor Control System has been rescinded; therefore, a project-specific BACT determination will be performed for the flare.

3. Top-Down BACT Analysis

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

NOx: Coanda-effect flare
VOC: Coanda-effect flare

Additionally, the ATC includes the following condition to ensure that it operates as proposed, i.e. non-steady flow conditions:

Flare shall not be operated continuously for more than 30 consecutive days. Flare is not continuous when flaring has ceased for three (3) or more consecutive hours. [District Rule 2201] Y

B. Offsets

1. Offset Applicability

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.

Offset Determination (lb/year)					
	NO_X	SO_X	PM_{10}	CO	VOC
SSPE2	**4,490**	**428**	**1335**	**21,539**	**32,511**
Offset Thresholds	20,000	54,750	29,200	200,000	20,000
Offsets triggered?	No	No	No	No	Yes

2. Quantity of Offsets Required

As seen above, the SSPE2 is greater than the offset thresholds for VOC only. 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) = (Σ[PE2 – BE] + ICCE) x 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 shown above in section VII,C.6, tank S-4034-23 and '24's BE = PE1.

The flare is a new emissions unit; therefore its BE = 0. Also, there are no increases in cargo carrier emissions; therefore offsets can be determined as follows:

Offsets Required (lb/year) = ([PE2 – BE] + ICCE) x DOR

PE2 = 5,187 lb/year (flare)
PE2 = 5,455 lb/year (tank S-4034-23)
PE2 = 2,105 lb/year (tank S-4034-24)
BE = 15,140 lb/year (tank S-4034-23)
BE = 10,759 lb/year (tank S-4034-24)
ICCE = 0 lb/year

Offsets Required (lb/year) = [(5,187+5,455+2,105)-(15,140+10,459)] x DOR
= -12,852 x DOR
= 0 lb VOC/year

As demonstrated in the calculation above, the amount of offsets is zero. Therefore, offsets will not be required for this project.

C. Public Notification

1. Applicability

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

New Major Sources are new facilities, which are also Major Sources. Since this is not a new facility, public noticing is not required for this project for New Major Source purposes.

As demonstrated in Sections VII.C.7 and VII.C.8, this project is a Federal Major Modification. Therefore, public noticing for Federal Major Modification purposes is required.

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

The SSPE1 and SSPE2 are compared to the offset thresholds in the following table.

Offset Thresholds				
Pollutant	**SSPE1 (lb/year)**	**SSPE2 (lb/year)**	**Offset Threshold**	**Public Notice Required?**
NO_X	3,274	4,490	20,000 lb/year	No
SO_X	172	428	54,750 lb/year	No
PM_{10}	1192	1335	29,200 lb/year	No
CO	14,922	21,539	200,000 lb/year	No
VOC	45,663	32,511	20,000 lb/year	No

As detailed 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.

SSIPE Public Notice Thresholds					
Pollutant	**SSPE1 (lb/year)**	**SSPE2 (lb/year)**	**SSIPE (lb/year)**	**SSIPE Public Notice Threshold**	**Public Notice Required?**
NO_x	3,274	4,490	1,216	20,000 lb/year	No
SO_x	172	428	256	20,000 lb/year	No
PM_{10}	1192	1335	143	20,000 lb/year	No
CO	14,922	21,539	6,617	20,000 lb/year	No
VOC	45,663	32,511	0	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

Since this facility does not have a Title V operating permit, this change is not a Title V significant Modification, and therefore public noticing is not required.

2. Public Notice Action

As discussed above, public noticing is required for this project for triggering a Federal Major Modification. Therefore, public notice documents will be submitted to the California Air Resources Board (CARB) and a public notice will be published in a local newspaper of general circulation 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:

S-4034-23-1 and '24-1:

This tank shall only store, place, or hold organic liquid with a true vapor pressure (TVP) of less than 6.5 psia under all storage conditions. [District Rule 2201] N

Crude oil throughput shall not exceed 50 barrels per day based on a monthly average. [District Rules 2201 and 4623] N

S-4034-41-0:

No more than 35,000 acf of gas shall be flared per day. [District Rule 2201] N

Emissions from the flare shall not exceed any of the following: NOx 0.068 lb/MMBtu, CO 0.310 lb/MMBtu, PM10 0.026 lb/MMBtu and VOC 0.29 lb/MMBtu. [District Rule 2201] N

The sulfur content of the gas being flared shall not exceed 5.0 gr S/100scf. [District Rules 2201 and 4801] N

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

S-4034-23-1 and '24-1:

Permittee shall conduct true vapor pressure (TVP) testing of the organic liquid stored in this tank at least once every 24 months during summer (July - September), and/or whenever there is a change in the source or type of organic liquid stored in this tank in order to maintain exemption from the rule. [District Rules 2201] N

3. Recordkeeping

Recordkeeping is required to demonstrate compliance with the offset, public notification and daily emission limit requirements of Rule 2201. The following condition(s) are listed on the permit to operate:

S-4034-23-1 and '24-1:

The permittee shall keep accurate records of throughput, each organic liquid stored in the tank, including its storage temperature, TVP, and API gravity. [District Rules 2201 and 4623] N

All records required to be maintained by this permit shall be maintained for a period of at least five years and shall be made readily available for District inspection upon request. [District Rules 2201 and 4623] N

S-4034-41-0:

Permittee shall maintain daily records of volume of gas flared and annual records of the fuel sulfur content. [District Rule 2210] N

All records, including required monitoring data and support information, shall be maintained and retained for a period of 5 years and made available for inspection at any time. [District Rule 1070] N

4. Reporting

No reporting is required to demonstrate compliance with Rule 2201.

F. Ambient Air Quality Analysis (AAQA)

An AAQA shall 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. The District's Technical Services Division conducted the required analysis. Refer to **Appendix E** of this document for the AAQA summary sheet.

The proposed location is in an attainment area for NO_X, CO, and SO_X. As shown by the AAQA summary sheet the proposed equipment will not cause a violation of an air quality standard for NO_X, CO, or SO_X.

The proposed location is in a non-attainment area for the state's PM_{10} as well as federal and state $PM_{2.5}$ thresholds. As shown by the AAQA summary sheet the proposed equipment will not cause a violation of an air quality standard for PM_{10} and $PM_{2.5}$.

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. EBNR's compliance certification is included in Appendix F.

H. Alternate Siting Analysis

The current project occurs at an existing facility. The applicant proposes to install a flare.

Since the project will provide flare combustion 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

Since this facility's emissions exceed the major source thresholds of District Rule 2201, this facility is a major source. However, this facility has elected to comply with Rule 2530, exempts it from the requirements of Rule 2520.

Rule 2530 Federally Enforceable Potential to Emit

The purpose of this rule is to restrict the emissions of a stationary source so that the source may elect to be exempt from the requirements of Rule 2520. Pursuant to Rule 2530, since this facility has elected exemption from the requirements of Rule 2520 by ensuring actual emissions from the stationary source in every 12-month periods to not exceed the following: ½ the major source

thresholds for NOx, VOCs, CO, and PM_{10}; 50 tons per year SO2; 5 tons per year of a single HAP; 12.5 tons per year of any combination of HAPs; 50 percent of any lesser threshold for a single HAP as the EPA may establish by rule; and 50 percent of the major source threshold for any other regulated air pollutant not listed in Rule 2530.

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. However, no subparts of 40 CFR Part 60 apply to reciprocating IC engines.
This rule incorporates the New Source Performance Standards from 40 CFR Part 60. 40 CFR Part 60, Subparts, K, Ka and Kb could potentially apply to the storage tanks located at this facility. However, pursuant to 40 CFR 60.110 (b), 60.110(a) (b), and 60.110(b) (b), these subparts do not apply to storage vessels less than 10,000 bbls, used for petroleum or condensate, that is stored, processed, and/or treated at a drilling and production facility prior to custody transfer.

Therefore, the requirements of this subpart are not applicable to this project.

Rule 4101 Visible Emissions

District Rule 4101, Section 5.0, indicates that no air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour, which is dark or darker than Ringlemann 1 or equivalent to 20% opacity.

The flare will use a Coanda-effect tip and combust only natural gas with a sulfur content not exceeding 5.0 gr/100 scf. Therefore, visible emissions are expected to comply with this rule's limits.

A permit condition will be listed on the permit as follows:

- {15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]

Therefore, compliance with District Rule 4101 requirements is expected.

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.

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.

An HRA is not required for a project with a total facility prioritization score of less than or equal to one. According to the Technical Services Memo for this project (**Appendix E**), the total facility prioritization score including this project was less than or equal to one. Therefore, no further analysis is required to determine the impact from this project and compliance with the District's Risk Management Policy is expected.

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.

Rule 4201 Particulate Matter Concentration

Section 3.1 prohibits discharge of dust, fumes, or total particulate matter into the atmosphere from any single source operation in excess of 0.1 grain per dry standard cubic foot.

The concentration of particulate matter in the flare's exhaust can be calculated given the following data:

F-Factor for Natural Gas:	8,578 dscf/MMBtu at 60 °F
PM_{10} Emission Factor:	0.026 lb-PM_{10}/MMBtu
Percentage of PM as PM_{10} in Exhaust:	100%
Exhaust Oxygen (O_2) Concentration:	3%

Excess Air Correction to F Factor = 20.9 ÷ (20.9 - 3) = 1.17

$$\frac{\left(\frac{0.026 lb \cdot PM}{MMBtu} \times \frac{7{,}000\, grain}{lb}\right)}{\frac{8{,}578\, ft^3}{MMBtu} \times 1.17} = 0.02 \frac{grain \cdot PM}{ft^3}$$

Since 0.02 grain/dscf is less than 0.1 grain/dscf, compliance with District Rule 4201 is expected and the following condition will be listed on the flare's permit to ensure compliance.

- {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]

Rule 4301 Fuel Burning Equipment

This rule specifies maximum emission rates in lb/hr for SO_2, NO_2, and combustion contaminants (defined as total PM in Rule 1020). This rule also limits combustion contaminants to ≤ 0.1 gr/scf. According to AP 42 (Table 1.4-2, footnote c), all PM emissions from natural gas and LPG combustion are less than 1 μm in diameter.

The following table compares the Flare's emissions with Rule 4301 limits.

Rule 4301 Limits			
Pollutant	Flare Emissions (lb/hr)	Rule 4301 Limits (lb/hr)	Compliant?
NO_2	0.14	140	Yes
SO_2	0.03	200	Yes
Total PM	0.03	200	Yes

Since none of the Rule 4301 limits are exceeded, compliance with Rule 4301 is expected. Since the proposed emission limits already placed on the flare permit are much more stringent, no additional conditions will be listed.

Rule 4311 Flares

Rule 4311 limits the emissions of volatile organic compounds (VOCs) and oxides of nitrogen (NOx), and sulfur from the operation of flares.

Section 5.1 states flares permitted to operate only during an emergency are not subject to the requirements of Section 5.6 and 5.7. The flare in this project is not an emergency flare; therefore, Sections 5.6 and 5.7 are not applicable.

Section 5.2 requires that the flame be present at all times when combustible gases are vented through the flare. The following condition will be listed on the ATC to ensure compliance:

- A flame shall be present at all times when combustible gases are vented through the flare. [District Rule 4311]

Section 5.3 requires that the flare outlet be equipped with an automatic ignition system, or operate with a pilot flame present at all times when combustible gases are vented through the flare, except during purge periods for automatic-ignition equipped flares. The following condition will be listed on the ATC to ensure compliance:

- Flare outlet shall be equipped with an automatic ignition system, or, shall operate with a pilot flame present at all times when combustible gases are vented through the flare, except during purge periods for automatic-ignition equipped flares. [District Rule 4311]

Section 5.4 requires that except for flares equipped with a flow-sensing ignition system, a heat sensing device such as a thermocouple, ultraviolet beam sensor, infrared sensor, or an alternative equivalent device, capable of continuously detecting at least one pilot flame or the flare flame is present shall be installed and operated. The following condition will be listed on the ATC to ensure compliance:

- Flare shall be equipped with a heat sensing device such as a thermocouple, ultraviolet beam sensor, infrared sensor, or an equivalent device capable of continuously detecting at least one pilot flame or the flare flame is present. The flame detection device shall be kept operational at all times except during flare maintenance when the flare is isolated from gas flow. During essential planned power outages when the flare is operating, the pilot monitor is allowed to be non-functional if the flare flame is clearly visible to onsite operators. Effective on and after July 1, 2012, all pilot monitor downtime shall be reported annually pursuant to Rule 4311, section 6.2.3.6. [District Rule 4311]

Section 5.5 requires flares that use flow-sensitive automatic ignition systems and which do not use a continuous pilot flame to use purge gas for purging. The following condition will be listed on the ATC to ensure compliance:

- If the flare uses a flow-sensing automatic ignition system and does not use a continuous flame pilot, the flare shall use purge gas for purging. [District Rule 4311]

Section 5.6 states that open flares (air-assisted, steam-assisted, or non-assisted) in which the flare gas pressure is less than 5 psig shall be operated in such a manner that meets the provisions of 40 CFR 60.18. The requirements of this section shall not apply to Coanda effect flares. Flare S-4034-41-0 is a Coanda effect flare. The following condition will be listed on the ATC to ensure compliance:

- Open flares in which the flare gas pressure is less than 5 psig shall be operated in such a manner that meets the provisions of 40 CFR 60.18. [District Rule 4311, 5.6]

Section 5.7 states that ground-level enclosed flares meet the defined emission standards. The flare involved with this project is not ground-level enclosed flares; therefore, this section does not apply.

Section 5.8 states that Effective on and after July 1, 2011, flaring is prohibited unless it is consistent with an approved flare minimization plan (FMP), pursuant to Section 6.5, and all commitments listed in that plan have been met. Subsection 6.5.1 states that by July 1, 2010, the operator of a petroleum refinery flare or any flare that has a flaring capacity of greater than or equal to 5.0 MMBtu per hour shall submit a flare minimization plan (FMP) to the APCO for approval. Flare S-4034-41 has a flaring capacity less than 5.0 MMBtu/hr; therefore a FMP is not required.

Section 5.9 sites Petroleum Refinery SO2 Performance Targets. The flare does not serve a petroleum refinery.

Section 5.10 states that Effective on and after July 1, 2011, the operator of a flare subject to flare minimization requirements pursuant to Section 5.8 shall monitor the vent gas flow to the flare with a flow measuring device or other parameters as specified in the Permit to Operate. The subject flare is not subject to flare minimization requirements pursuant to Section 5.8.

Section 5.11 states that effective on and after July 1, 2011, the operator of a petroleum refinery or a flare with a flaring capacity equal to or greater than 50 MMBtu/hr shall monitor the flare pursuant to Sections 6.6, 6.7, 6.8, 6.9, and 6.10. The flare is not part of petroleum refinery nor is the flaring capacity greater than 50 MMBtu/hr.

Compliance with the rule is expected.

Rule 4409 Components at Light Crude Oil Production Facilities, Natural Gas Production Facilities, and Natural Gas Processing Facilities

The units currently comply with this rule and the proposed modifications are not expected to affect compliance. Continued compliance with the rule is expected.

Rule 4623, Storage of Organic Liquids

This rule applies to any tank with a capacity of 1,100 gallons or greater in which any organic liquid is placed, held, or stored.

Tanks S-4034-23 and '24's proposed crude oil TVP will be limited to 6.5 psia and the tanks have a capacity less than 250 bbl. Therefore the following conditions will apply:

This tank shall be equipped with a pressure-vacuum (PV) relief valve set to within 10% of the maximum allowable working pressure of the tank, permanently labeled with the operating pressure settings, properly maintained in good operating order in accordance with the manufacturer's instructions, and shall remain in leak-free condition except when the operating pressure exceeds the valve's set pressure. [District Rule 4623] N

A leak-free condition is a condition without a gas leak or a liquid leak. A gas leak is defined as a reading in excess of 10,000 ppmv, above background, as measured by a portable hydrocarbon detection instrument that is calibrated with methane in accordance with the procedures specified in EPA Test Method 21. A liquid leak is defined as the dripping of organic liquid at a rate of more than 3 drops per minute. [District Rule 4623] Y

The permittee shall keep accurate records of throughput, each organic liquid stored in the tank, including its storage temperature, TVP, and API gravity. [District Rules 2201 and 4623] N

All records required to be maintained by this permit shall be maintained for a period of at least five years and shall be made readily available for District inspection upon request. [District Rules 2201 and 4623] N

Tank S-4034-29:

Tank S-4034-29 is equipped with a vapor control system with a VOC control efficiency of at least 95%.

Compliance with the requirements of this rule is expected.

District Rule 4801 Sulfur Compounds

A person shall not discharge into the atmosphere sulfur compounds, which would exist as a liquid or gas at standard conditions, exceeding in concentration at the point of discharge: 0.2 % by volume calculated as SO_2, on a dry basis averaged over 15 consecutive minutes. The flare will combust gas with a sulfur content not exceeding 5 gr S/100 scf.

Therefore, compliance with District Rule 4801 requirements 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

Oil and gas operations in Kern County must comply with the *Kern County Zoning Ordinance – 2015 (C) Focused on Oil and Gas Local Permitting*. In 2015, Kern County revised the Kern County Zoning Ordinance Focused on Oil and Gas Activities (Kern Oil and Gas Zoning Ordinance) in regards to future oil and gas exploration, and drilling and production of hydrocarbon resource projects occurring within Kern County.

Kern County served as lead agency for the revision to their ordinance under the California Environmental Quality Act (CEQA), and prepared an Environmental Impact Report (EIR) that was certified on November 9, 2015. The EIR evaluated and disclosed to the public the environmental impacts associated with the growth of oil and gas exploration in Kern County, and determined that such growth will result in significant GHG impacts in the San Joaquin Valley. As such, the EIR included mitigation measures for GHG.

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 GHGs. The District has determined that the applicant is responsible for implementing GHG mitigation measures imposed in the EIR by the Kern County for the Kern County Zoning Ordinance.

District CEQA Findings

The proposed project is located in Kern County and is thus subject to the Kern County Zoning Ordinance – 2015 (C) Focused on Oil and Gas Local Permitting. The Kern County Zoning Ordinance was developed by the Kern County Planning Agency as a comprehensive set of goals, objectives, policies, and standards to guide development, expansion, and operation of oil and gas exploration within Kern County.

In 2015, Kern County revised their *Kern County Zoning Ordinance* in regards to exploration, drilling and production of hydrocarbon resources projects. Kern County, as the lead agency, is the agency that will enforce the mitigation measures identified the

EIR, including the mitigation requirements of the Oil and Gas ERA. As a responsible agency the District complies with CEQA by considering the EIR prepared by the Lead Agency, and by reaching its own conclusion on whether and how to approve the project involved (CCR §15096). The District has reviewed the EIR prepared by Kern County, the Lead Agency for the project, and finds it to be adequate. The District also prepared a full findings document. The full findings document, *California Environmental Quality Act (CEQA) Statement of Findings for the Kern County Zoning Ordinance EIR* contains the details of the District's findings regarding the Project. The District's implementation of the Kern Zoning Ordinance and its EIR applies to ATC applications received for any new/modified equipment used in oil/gas production in Kern County, including new wells. The full findings applies to the Project and the Project's related activity equipment(s) is covered under the Kern Zoning Ordinance. To reduce project related impacts on air quality, the District evaluates emission controls for the project such as Best Available Control Technology (BACT) under District Rule 2201 (New and Modified Stationary Source Review). In addition, the District is requiring the applicant to surrender emission reduction credits (ERC) for stationary source emissions above the offset threshold.

Thus, the District concludes that through a combination of project design elements, permit conditions, and the Oil and Gas ERA, the project will be fully mitigated to result in no net increase in emissions. Pursuant to CCR §15096, prior to project approval and issuance of ATCs the District prepared findings.

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 revision to the *Kern County Zoning Ordinance* went through an extensive public process that included a Notice of Preparation, a preparation of an EIR, scoping meetings, and public hearings. The process led to the certification of the final EIR and approval of the revised *Kern County Zoning Ordinance* in November 2015 by the Kern County Board of Supervisors. As mentioned above, the proposed project will be fully mitigated and will result in no net increase in emissions. In addition, the proposed project is not located at a facility of concern; 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 ATCs subject to the permit conditions on the attached draft ATCs in **Appendix G.**

X. Billing Information

Annual Permit Fees			
Permit Number	**Fee Schedule**	**Fee Description**	**Annual Fee**
S-4034-23-1	3020-05 B	10,500 gallons	$103
S-4034-24-1	3020-05 B	8,400 gallons	$103
S-4034-29-3	3020-02 C	0.5 MMBtu/hr.	$217
S-4034-41-0	3020-02 E	2.0 MMBtu/hr	$451

Appendixes

A: Quarterly Net Emissions Change
B: Current PTO(s)
C: Gas Analysis
D: BACT Guideline and BACT Analysis
E: HRA Summary
F: Compliance Certification
G: Draft ATCs

APPENDIX A
Quarterly Net Emissions Change (QNEC)

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.6 in the evaluation above, quarterly PE2 and quarterly PE1 can be calculated as follows:

$PE2_{quarterly}$ = $PE2_{annual}$ ÷ 4 quarters/year

$PE1_{quarterly}$= $PE1_{annual}$ ÷ 4 quarters/year

Quarterly NEC [QNEC]					
	PE2 (lb/yr)	PE2 (lb/qtr)	PE1 (lb/yr)	PE1 (lb/qtr)	QNEC (lb/qtr)
S-4034-23-1	5,455	1,364	15,140	3,785	-2,421
S-4034-24-1	2,105	526	10,759	2,690	-2,164

Quarterly NEC [QNEC] S-4034-41-0					
	PE2 (lb/yr)	PE2 (lb/qtr)	PE1 (lb/yr)	PE1 (lb/qtr)	QNEC (lb/qtr)
NO_X	1,216	304	0	0	304
SO_X	256	64	0	0	64
PM_{10}	143	36	0	0	36
CO	6,617	1,654	0	0	1,654
VOC	5,187	1,297	0	0	1,297

APPENDIX B
Current PTO(s)

San Joaquin Valley
Air Pollution Control District

PERMIT UNIT: S-4034-23-0 **EXPIRATION DATE:** 12/31/2021

SECTION: SW06 **TOWNSHIP:** 28S **RANGE:** 20E

EQUIPMENT DESCRIPTION:
250 BBL CRUDE OIL STORAGE TANK WITH A PV VALVE (VOIGT LEASE)

PERMIT UNIT REQUIREMENTS

1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. This tank shall be equipped with a pressure-vacuum (PV) relief valve set to within 10% of the maximum allowable working pressure of the tank, permanently labeled with the operating pressure settings, properly maintained in good operating order in accordance with the manufacturer's instructions, and shall remain in gas-tight condition except when the operating pressure exceeds the valve's set pressure. [District Rule 4623]
3. This tank shall be in a gas-tight condition. A gas-tight condition is defined as a condition without a gas leak. A gas leak is defined as a reading in excess of 10,000 ppmv, above background, as measured by a portable hydrocarbon detection instrument in accordance with the procedures specified in EPA Test Method 21. A reading in excess of 10,000 ppmv above background is a violation of this permit and Rule 4623. [District Rule 4623]
4. Crude oil throughput shall not exceed 50 barrels per day based on a monthly average. [District Rule 4623]
5. Permittee shall maintain monthly records of average daily crude oil throughput and shall keep accurate records of each organic liquid stored in the tank, including its storage temperature, TVP, and API gravity. [District Rule 4623]
6. All records required to be maintained by this permit shall be maintained for a period of at least five years and shall be made readily available for District inspection upon request. [District Rule 4623]

San Joaquin Valley
Air Pollution Control District

PERMIT UNIT: S-4034-24-0 **EXPIRATION DATE:** 12/31/2021

SECTION: SW06 **TOWNSHIP:** 28S **RANGE:** 20E

EQUIPMENT DESCRIPTION:
200 BBL CRUDE OIL WASH TANK (13.4 FT. DIA. X 8 FT. HIGH) WITH A PV VALVE (VOIGT LEASE)

PERMIT UNIT REQUIREMENTS

1. Formerly S-3276-3.
2. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
3. This tank shall be equipped with a pressure-vacuum (PV) relief valve set to within 10% of the maximum allowable working pressure of the tank, permanently labeled with the operating pressure settings, properly maintained in good operating order in accordance with the manufacturer's instructions, and shall remain in gas-tight condition except when the operating pressure exceeds the valve's set pressure. [District Rule 4623]
4. This tank shall be in a gas-tight condition. A gas-tight condition is defined as a condition without a gas leak. A gas leak is defined as a reading in excess of 10,000 ppmv, above background, as measured by a portable hydrocarbon detection instrument in accordance with the procedures specified in EPA Test Method 21. A reading in excess of 10,000 ppmv above background is a violation of this permit and Rule 4623. [District Rule 4623]
5. Crude oil throughput shall not exceed 50 barrels per day based on a monthly average. [District Rule 4623]
6. Permittee shall maintain monthly records of average daily crude oil throughput and shall keep accurate records of each organic liquid stored in the tank, including its storage temperature, TVP, and API gravity. [District Rule 4623]
7. All records required to be maintained by this permit shall be maintained for a period of at least five years and shall be made readily available for District inspection upon request. [District Rule 4623]

San Joaquin Valley
Air Pollution Control District

PERMIT UNIT: S-4034-29-2 **EXPIRATION DATE:** 12/31/2021

SECTION: SW/34 **TOWNSHIP:** 12N **RANGE:** 21W

EQUIPMENT DESCRIPTION:
500 BBL FIXED ROOF CRUDE OIL STOCK TANK WITH VAPOR CONTROL SYSTEM INCLUDING ONE 0.5 MMBTU/HR NATURAL GAS-FIRED HEATER (RIO VIEJO)

PERMIT UNIT REQUIREMENTS

1. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
2. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
3. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
4. The tank shall be equipped with a vapor recovery system consisting of a closed vent system that collects all VOCs from the storage tank, and a VOC control device. The vapor recovery system shall be APCO-approved and maintained in gas-tight condition. The VOC control device shall be either of the following: a vapor return or condensation system that connects to a gas pipeline distribution system, or an approved VOC destruction device the reduces the inlet VOC emissions by at least 95% by weight as determined by the test method specified in Section 6.4.7. [District Rules 2201 and 4623]
5. A leak-free condition is defined as a condition without a gas leak or a liquid leak. A gas leak is defined as a reading in excess of 10,000 ppmv, above background, as measured by a portable hydrocarbon detection instrument in accordance with the procedures specified in EPA Test Method 21. A liquid leak is defined as the dripping of organic liquid at a rate of more than 3 drops per minute. A reading in excess of 10,000 ppmv above background or the dripping of organic liquid at a rate of more than 3 drops per minute is a violation of this permit and Rule 2201 and shall be reported as a deviation. [District Rules 2201 and 4623]
6. Any tank gauging or sampling device on a tank vented to the vapor recovery system shall be equipped with a gas-tight cover which shall be closed at all times except during gauging or sampling. [District Rules 2201 and 4623]
7. VOC fugitive emissions from the components in gas and light crude oil service shall not exceed 0.8 lb/day. [District Rules 2201 and 4623]
8. Operator shall visually inspect tank shell, hatches, seals, seams, cable seals, valves, flanges, connectors, and any other piping components directly affixed to the tank and within five feet of the tank at least once per year for liquid leaks, and with a portable hydrocarbon detection instrument conducted in accordance with EPA Method 21 for gas leaks. Operator shall also visually or ultrasonically inspect as appropriate, the external shells and roofs of uninsulated tanks for structural integrity annually. [District Rules 2201 and 4623]
9. Components found to be leaking either liquids or gases shall be immediately affixed with a tag showing the component to be leaking. Operator shall maintain records of the liquid or gas leak detection readings, date/time the leak was discovered, and date/time the component was repaired to a leak-free condition. [District Rules 2201 and 4623]
10. Upon detection of a liquid leak, defined as a leak rate of greater than or equal to 30 drops per minute, operator shall repair the leak within 8 hours. For leaks with a liquid leak rate of between 3 and 30 drops per minute, the leaking component shall be repaired within 24 hours after detection. [District Rules 2201 and 4623]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

11. Upon detection of gas leak (VOC concentration >10,000 ppmv, measured in accordance with EPA Method 21), operator shall take on of the following actions: 1) eliminate the leak within 8 hours after detection; or 2) if the leak cannot be eliminated, then minimize the leak to the lowest possible level within 8 hours after detection by using best maintenance practices, and eliminate the leak within 48 hours after minimization. In no event shall the total time to minimize and eliminate a leak exceed 56 hours after detection. [District Rules 2201 and 4623]
12. If a component type for a given tank is found to leak during an annual inspection, then conduct quarterly inspections of that component type on the tank or tank system for four consecutive quarters. If a component type is found to have no leak after four consecutive quarterly inspections, then revert to annual inspections. [District Rules 2201 and 4623]
13. Leaking components that have been discovered by the operator that have been immediately tagged and repaired within the specified timeframes, shall not constitute a violation of District Rule 4623 (amended May 19, 2005). However, leaking components discovered during inspections by District staff that were not previously identified and/or tagged by the operator, and/or any leaks that were not repaired within specified timeframes, shall constitute a violation of the District Rule 4623 (amended May 19, 2005). [District Rules 2201 and 4623]
14. Any component found to be leaking by operator on two consecutive annual inspections is in violation of the District Rule 4623 (amended May 19, 2005), even if it is under the voluntary inspection and maintenance program. [District Rules 2201 and 4623]
15. The operator shall ensure that the vapor recovery system is functional and is operating as designed at all times and shall monitor vapor recovery compressor activation and shut off manometer pressures on quarterly basis to ensure that compressor activation pressure does not exceed tank and vapor recovery pressure relief valve setting. [District Rule Rules 2201 and 4623]
16. Operator shall maintain an inspection log containing the following 1) type of component leaking; 2) date and time of leak detection, and method of detection; 3) date and time of leak repair, and emission level of recheck after leak is repaired; 4) method used to minimize and repair leaks. [District Rule 1070]
17. This permit authorizes tank cleaning that is not the result of breakdowns or poor maintenance as a routine maintenance activity. [District Rule 2020]
18. Permittee shall comply with all applicable tank degassing and interior cleaning requirements specified in Section 5.7.5 of Rule 4623. [District Rule 4623]
19. Emissions from the natural gas-fired unit shall not exceed any of the following limits: 82 ppmvd NOX @ 3% O2 or 0.1 lb-NOX/MMBtu, 0.0076 lb-PM10/MMBtu, 114 ppmvd CO @ 3% O2 or 0.084 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rule 2201]
20. The sulfur content of the gas combusted in heater shall not exceed 5 gr S/100 scf. [District Rule 2201]
21. If the heater is not fired on PUC-regulated natural gas and compliance is achieved through fuel sulfur content limitations, then the sulfur content of the fuel shall be determined by testing sulfur content at a location after all fuel sources are combined prior to incineration, or by performing mass balance calculations based on monitoring the sulfur content and volume of each fuel source. The sulfur content of the fuel shall be determined using EPA Method 11 or Method 15. [District Rule 2201]
22. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, permittee shall demonstrate compliance at least annually. [District Rule 2201]
23. If the heater is fired on PUC-regulated natural gas, valid purchase contracts, supplier certifications, tariff sheets, or transportation contracts may be used to satisfy the fuel sulfur content analysis, provided they establish the fuel sulfur concentration and higher heating value. [District Rule 2201]
24. All records required to be maintained by this permit shall be maintained for a period of at least five years and shall be made readily available for District inspection upon request. [District Rules 2201 and 4623]

APPENDIX B
Gas Analysis

ZALCO LABORATORIES, INC.
4309 Armour Avenue, Bakersfield, CA 93308 (661) 395-0539 FAX (661) 395-3069 www.zalcolabs.com
2186 Eastman Avenue, Suite 103, Ventura, CA 93003 (805) 477-0114 FAX (805) 477-0125

E & B Natural Resources Corp.
34740 Merced Ave.
Bakersfield CA 93308

Attention: Greg Youngblood

Sample Description: Rio Viejo Scrubber Outlet
Sampled: 12/13/2016 @ 1:50:00 PM by Chris Martinez

Laboratory No: 161216-12
Date Received: 12/13/16
Date Analyzed: 12/14/16
Date Completed: 12/21/16 2:50 PM

Chromatographic Analysis, ASTM D-1945-03, ASTM D-3246-11

Constituent:	Result	Units
Sulfur	0.80	grs S/100 SCF
Total Sulfur	13.2	ppmv

Chromatographic Analysis, ASTM D-1945-03, ASTM D-3588-98, GPA 2145-09, ASTM D-3246-11

Constituent:	Mole %	Weight %	GPM	GPM Fractions	CHONS%
Oxygen	0.097	0.120	(Gallons per		Carbon, C 73.89
Nitrogen	0.606	0.658	1000.000		
Hydrogen	0.000	0.000	cubic feet)		Hydrogen, H 19.42
Carbon Dioxide	4.765	8.130			
Carbon Monoxide	0.000	0.000			
Methane	67.944	42.257			Oxygen, O 6.03
Ethane	7.133	8.315			
Propane	10.410	17.797	2.863	(C3....C3) = 2.863	Nitrogen, N 0.66
IsoButane	2.108	4.749	0.689		
n-Butane	3.942	8.883	1.242	(C3....C4) = 4.794	
IsoPentane	1.044	2.920	0.381		Sulfur, S 0.00
n-Pentane	0.638	1.784	0.230	(C3....C5) = 5.405	
Hexanes +	1.313	4.387	0.565	(C3....C6+) = 5.970	
Totals:	100.00	100.00	5.970	19.031	100.00

Flammable Gases:		94.532	
Gas Properties calculated @ STP:	degrees F.	60	
Measurement Base Pressure @ STP:	psia	14.696	H/C Ratio: 0.26

Gas State	Dry Btu / Cu. Ft		Wet Btu / Cu. Ft
Gross, Ideal Gas	1401.32	20615.93	1376.94
Net, Ideal Gas	1276.33	18777.04	1254.12
Gross, Real Gas	1408.84		1384.32
Net, Real Gas	1283.17		1260.84

Relative Gas Density; [Air=1] Ideal:	0.8906
Specific Gravity, [Air=1] Real gas:	0.8556
Real Gas Density, Lb/Cu.Ft.:	0.0683
Specific Volume, Cu.Ft./Lb:	14.6331
Relative Liquid Density @ 60F/60F:	0.4034
Compressibility, 'z':	0.9947
Fuel kg per kg-mole Molecular wt avg	25.795

APPENDIX D
BACT Guideline and Top-Down BACT Analysis

Flare:

Top Down BACT Analysis for NOx emissions:

The SJVUAPCD BACT Clearinghouse Guideline 1.4.1 Waste Gas Flare - 15.3 MMBtu/hr, Serving a Tank Vapor Control System has been rescinded; therefore, a project-specific BACT determination will be performed for the flare.

Step 1 - Identify All Control Technologies

1. Ultra-low NOx flare (Technologically Feasible)

2. Steam-assisted or air-assisted when steam unavailable, or Coanda-effect burner (Achieved in Practice)

Step 2 - Eliminate Technologically Infeasible Options

The tank battery's vapor recovery system is currently served by a well engine and a heater. The flare's throughput will vary from combusting minor amounts of excess vapors that cannot be used in the engine and the heater to combusting all of the gas when both the heater and the well engine are not operating due to mechanical, maintenance, or emergency reasons. As ultra-low NOx flares can only operate at a steady flow rate they are Technologically Infeasible for this operation and are eliminated as a control technology option.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

- Steam-assisted or air-assisted when steam unavailable, or Coanda-effect burner (Achieved in Practice)

Step 4 - Cost Effectiveness Analysis

The flare has a Coanda effect burner. Therefore, a cost analysis is not required.

Step 5 - Select BACT

- Coanda-effect burner.

Additionally, the ATC includes the following condition to ensure that it operates as proposed, i.e. non-steady flow conditions:

Flare shall not be operated continuously for more than 30 consecutive days. Flare is not continuous when flaring has ceased for three (3) or more consecutive hours. [District Rule 2201] Y

BACT is satisfied.

Top Down BACT Analysis for VOC emissions:

The SJVUAPCD BACT Clearinghouse Guideline 1.4.1 Waste Gas Flare - 15.3 MMBtu/hr, Serving a Tank Vapor Control System has been rescinded; therefore, a project-specific BACT determination will be performed for the flare.

Step 1 - Identify All Control Technologies

- Steam-assisted or air-assisted when steam unavailable, or Coanda-effect burner (Achieved in Practice)

Step 2 - Eliminate Technologically Infeasible Options

The above controls are feasible.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

- Steam-assisted or air-assisted when steam unavailable, or Coanda-effect burner (Achieved in Practice)

Step 4 - Cost Effectiveness Analysis

The flare has a Coanda effect burner. Therefore, a cost analysis is not required.

Step 5 - Select BACT

Coanda-effect burner.

APPENDIX E
HRA

San Joaquin Valley Air Pollution Control District
Risk Management Review

To:	David Torii – Permit Services
From:	Cheryl Lawler – Technical Services
Date:	January 3, 2018
Facility Name:	E&B Natural Resources
Location:	Rio Viejo Lease, SW Section 34, T12N, R21W
Application #(s):	S-4034-23-1, 24-1, 29-3, & 41-0
Project #:	S-1174061

A. RMR SUMMARY

RMR Summary						
Units	**Prioritization Score**	**Acute Hazard Index**	**Chronic Hazard Index**	**Maximum Individual Cancer Risk**	**T-BACT Required?**	**Special Permit Requirements?**
Unit 41-0 (Waste Gas Flare)	0.45	N/A[1]	N/A[1]	N/A[1]	**No**	**Yes**
Project Totals	0.45	N/A[1]	N/A[1]	N/A[1]		
Facility Totals	<1	0.00	0.00	0.00		

[1]The project passed on prioritization with a score of less than1; therefore, no further analysis was required.

Proposed Permit Requirements

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

Unit 41-0

1. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction.

B. RMR REPORT

I. Project Description

Technical Services received a request on December 26, 2018, to perform a Risk Management Review for the addition of a waste gas flare and to reduce TVP on two tanks. Because there are reductions in emissions for Units 23-1, 24-1, & 29-3, no analysis was required or performed for these units.

II. Analysis

Toxic emissions for this project were calculated using 2001 Ventura County Air Pollution Control District emission factors for natural gas fired external combustion and from a refinery gas composition analysis from the 2005 Report *FINAL REPORT Test of TDA's Direct Oxidation Process for Sulfur Recovery*. Emission rates were input into the San Joaquin Valley APCD's Hazard Assessment and Reporting Program (SHARP). In accordance with the District's Risk Management Policy for Permitting New and Modified Sources (APR 1905, May 28, 2015), risks from the project were prioritized using the procedures in the 1990 CAPCOA Facility Prioritization Guidelines. The prioritization score for this project was less than 1.0 (see RMR Summary Table). Therefore, no further analysis was necessary.

The following parameters were used for the review:

Analysis Parameters Unit 41-0			
Waste Gas Usage Rates (MMscf)	0.00146 hr 12.83 yr	**Closest Receptor (m)**	302
		Closest Receptor Type	Business

Technical Services also performed modeling for criteria pollutants CO, NO_x, SO_x, and PM10 with the emission rates below:

Unit #	NO_x (Lbs.)		SO_x (Lbs.)		CO (Lbs.)		PM_{10} (Lbs.)	
	Hr.	Yr.	Hr.	Yr.	Hr.	Yr.	Hr.	Yr.
41-0	0.14	1223	0.029	256	0.64	5576	0.054	468

The results from the Criteria Pollutant Modeling are as follows:

Criteria Pollutant Modeling Results*

	Background Site	1 Hour	3 Hours	8 Hours	24 Hours	Annual
CO	Arvin-DiGiorgio (2016)	Pass	X	Pass	X	X
NO_x	Bakersfield-California (2016)	Pass[1]	X	X	X	Pass
SO_x	Fresno-Garland (2016)	Pass	Pass	X	Pass	Pass
PM_{10}	Bakersfield-California (2016)	X	X	X	Pass[2]	Pass[2]
$PM_{2.5}$	Bakersfield-California (2016)	X	X	X	Pass[3]	Pass[3]

*Results were taken from the attached PSD spreadsheet.
[1]The project was compared to the 1-hour NO2 National Ambient Air Quality Standard that became effective on April 12, 2010 using the District's approved procedures.
[2]The criteria pollutants are below EPA's level of significance as found in 40 CFR Part 51.165 (b)(2).
[3]The court has vacated EPA's $PM_{2.5}$ SILs. Until such time as new SIL values are approved, the District will use the corresponding PM_{10} SILs for both PM_{10} and $PM_{2.5}$ analyses.

III. Conclusion

The prioritization score is less than 1.0. **In accordance with the District's Risk Management Policy, the project is approved without Toxic Best Available Control Technology (T-BACT).**

To ensure that human health risks will not exceed District allowable levels; the permit requirements listed on Page 1 of this report must be included for the proposed unit.

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.

The emissions from the proposed equipment will not cause or contribute significantly to a violation of the State and National AAQS.

APPENDIX F
Compliance Certification

January 17, 2018

RECEIVED
JAN 17 2018
SJVAPCD
Southern Region

Mr. Leonard Scandura
Manager of Permit Services
San Joaquin Valley Unified APCD
34946 Flyover Court
Bakersfield, CA 93308

Subject: Statewide Compliance Certification – Rio Viejo Flare (S-4034)

Dear Mr. Scandura:

I hereby certify that all major Stationary Sources owned or operated by such person (or by any entity controlling, controlled by, or under common control with such person) in California, which are subject to emission limitations, are in compliance or on a schedule for compliance with all applicable emission limitations and standards.

Alternative siting analysis is required for any project, which constitutes a New Major Source or a Federal Major Modification.

The current project occurs at existing facilities. The applicant proposes to operate a flare to control the vapors that are not consumed by the heater or the well engine from the existing tank vapor recovery system.

Since the project will provide additional VOC control at the same existing 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.

Signature

HSE MANAGER

Title

APPENDIX G
Draft ATCs

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: S-4034-23-1

ISSUANCE DATE: DRAFT

DRAFT

LEGAL OWNER OR OPERATOR: E&B NATURAL RESOURCES
MAILING ADDRESS: HSE MANAGER
1600 NORRIS RD
BAKERSFIELD, CA 93308

LOCATION: LIGHT OIL WESTERN

SECTION: SW06 **TOWNSHIP:** 28S **RANGE:** 20E

EQUIPMENT DESCRIPTION:
MODIFICATION OF 250 BBL CRUDE OIL STORAGE TANK WITH A PV VALVE (VOIGT LEASE): LOWER TVP LIMIT

CONDITIONS

1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. This tank shall be equipped with a pressure-vacuum (PV) relief valve set to within 10% of the maximum allowable working pressure of the tank, permanently labeled with the operating pressure settings, properly maintained in good operating order in accordance with the manufacturer's instructions, and shall remain in leak-free condition except when the operating pressure exceeds the valve's set pressure. [District Rule 4623]
3. A leak-free condition is a condition without a gas leak or a liquid leak. A gas leak is defined as a reading in excess of 10,000 ppmv, above background, as measured by a portable hydrocarbon detection instrument that is calibrated with methane in accordance with the procedures specified in EPA Test Method 21. A liquid leak is defined as the dripping of organic liquid at a rate of more than 3 drops per minute. [District Rule 4623] Federally Enforceable Through Title V Permit
4. This tank shall only store, place, or hold organic liquid with a true vapor pressure (TVP) of less than 6.5 psia under all storage conditions. [District Rule 2201]
5. Crude oil throughput shall not exceed 50 barrels per day based on a monthly average. [District Rule 2201]
6. Permittee shall conduct true vapor pressure (TVP) testing of the organic liquid stored in this tank at least once every 24 months during summer (July - September), and/or whenever there is a change in the source or type of organic liquid stored in this tank in order to maintain exemption from the rule. [District Rules 2201]

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.

Seyed Sadredin, Executive Director / APCO

DRAFT

Arnaud Marjollet, Director of Permit Services

S-4034-23-1 : Feb 5 2016 10:53AM – TORID : Joint Inspection NOT Required

7. The API gravity of crude oil or petroleum distillate shall be determined by using ASTM Method D 287 e1 "Standard Test Method for API Gravity of Crude Petroleum and Petroleum Products (Hydrometer Method). Sampling for API gravity shall be performed in accordance with ASTM Method D 4057 "Standard Practices for Manual Sampling of Petroleum and Petroleum Products." [District Rule 2201]
8. For crude oil with an API gravity of 26 degrees or less, the TVP shall be determined using the latest version of the Lawrence Berkeley National Laboratory "test Method for Vapor pressure of Reactive Organic Compounds in Heavy Crude Oil Using Gas Chromatograph", as approved by ARB and EPA. [District Rule 2201]
9. The TVP testing shall be conducted at actual storage temperature of the organic liquid in the tank. The permittee shall also conduct an API gravity testing. [District Rule 2201]
10. Permittee shall submit the records of TVP and API gravity testing to the APCO within 45 days after the date of testing. The records shall include the tank identification number, Permit to Operate number, type of stored organic liquid, TVP and API gravity of the organic liquid, test methods used, and a copy of the test results. [District Rule 2201]
11. The permittee shall keep accurate records of throughput, each organic liquid stored in the tank, including its storage temperature, TVP, and API gravity. [District Rules 2201 and 4623]
12. All records required to be maintained by this permit shall be maintained for a period of at least five years and shall be made readily available for District inspection upon request. [District Rules 2201 and 4623]

DRAFT

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: S-4034-24-1

ISSUANCE DATE: DRAFT

DRAFT

LEGAL OWNER OR OPERATOR: E&B NATURAL RESOURCES
MAILING ADDRESS: HSE MANAGER
1600 NORRIS RD
BAKERSFIELD, CA 93308

LOCATION: LIGHT OIL WESTERN

SECTION: SW06 **TOWNSHIP:** 28S **RANGE:** 20E

EQUIPMENT DESCRIPTION:
MODIFICATION OF 200 BBL CRUDE OIL WASH TANK (13.4 FT. DIA. X 8 FT. HIGH) WITH A PV VALVE (VOIGT LEASE): LOWER TVP LIMIT

CONDITIONS

1. Formerly S-3276-3.
2. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
3. This tank shall be equipped with a pressure-vacuum (PV) relief valve set to within 10% of the maximum allowable working pressure of the tank, permanently labeled with the operating pressure settings, properly maintained in good operating order in accordance with the manufacturer's instructions, and shall remain in gas-tight condition except when the operating pressure exceeds the valve's set pressure. [District Rule 4623]
4. This tank shall only store, place, or hold organic liquid with a true vapor pressure (TVP) of less than 6.5 psia under all storage conditions. [District Rule 2201]
5. Crude oil throughput shall not exceed 50 barrels per day based on a monthly average. [District Rules 2201 and 4623]
6. Permittee shall conduct true vapor pressure (TVP) testing of the organic liquid stored in this tank at least once every 24 months during summer (July - September), and/or whenever there is a change in the source or type of organic liquid stored in this tank in order to maintain exemption from the rule. [District Rules 2201]

CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director / APCO

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Arnaud Marjollet, Director of Permit Services

S-4034-24-1 : Feb 5 2018 10:53AM – TORID : Joint Inspection NOT Required

7. The API gravity of crude oil or petroleum distillate shall be determined by using ASTM Method D 287 e1 "Standard Test Method for API Gravity of Crude Petroleum and Petroleum Products (Hydrometer Method). Sampling for API gravity shall be performed in accordance with ASTM Method D 4057 "Standard Practices for Manual Sampling of Petroleum and Petroleum Products." [District Rule 2201]

8. For crude oil with an API gravity of 26 degrees or less, the TVP shall be determined using the latest version of the Lawrence Berkeley National Laboratory "test Method for Vapor pressure of Reactive Organic Compounds in Heavy Crude Oil Using Gas Chromatograph", as approved by ARB and EPA. [District Rule 2201]

9. The TVP testing shall be conducted at actual storage temperature of the organic liquid in the tank. The permittee shall also conduct an API gravity testing. [District Rule 2201]

10. Permittee shall submit the records of TVP and API gravity testing to the APCO within 45 days after the date of testing. The records shall include the tank identification number, Permit to Operate number, type of stored organic liquid, TVP and API gravity of the organic liquid, test methods used, and a copy of the test results. [District Rule 2201]

11. The permittee shall keep accurate records of throughput, each organic liquid stored in the tank, including its storage temperature, TVP, and API gravity. [District Rules 2201 and 4623]

12. All records required to be maintained by this permit shall be maintained for a period of at least five years and shall be made readily available for District inspection upon request. [District Rules 2201 and 4623]

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: S-4034-29-3

ISSUANCE DATE: DRAFT

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LEGAL OWNER OR OPERATOR: E&B NATURAL RESOURCES
MAILING ADDRESS: HSE MANAGER
1600 NORRIS RD
BAKERSFIELD, CA 93308

LOCATION: LIGHT OIL WESTERN

SECTION: SW/34 **TOWNSHIP:** 12N **RANGE:** 21W

EQUIPMENT DESCRIPTION:
MODIFICATION OF 500 BBL FIXED ROOF CRUDE OIL STOCK TANK WITH VAPOR CONTROL SYSTEM INCLUDING ONE 0.5 MMBTU/HR NATURAL GAS-FIRED HEATER (RIO VIEJO): CONNECT VAPOR CONTROL SYSTEM TO FLARE S-4034-41

CONDITIONS

1. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
2. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
3. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
4. The tank shall be equipped with a vapor recovery system consisting of a closed vent system that collects all VOCs from the storage tank, and a VOC control device. The vapor recovery system shall be APCO-approved and maintained in gas-tight condition. The VOC control device shall be either of the following: a vapor return or condensation system that connects to a gas pipeline distribution system, or an approved VOC destruction device the reduces the inlet VOC emissions by at least 95% by weight as determined by the test method specified in Section 6.4.7. [District Rules 2201 and 4623]

CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director / APCO

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Arnaud Marjollet, Director of Permit Services

S-4034-29-3 : Feb 5 2018 10:53AM – TORID : Joint Inspection NOT Required

5. A leak-free condition is defined as a condition without a gas leak or a liquid leak. A gas leak is defined as a reading in excess of 10,000 ppmv, above background, as measured by a portable hydrocarbon detection instrument in accordance with the procedures specified in EPA Test Method 21. A liquid leak is defined as the dripping of organic liquid at a rate of more than 3 drops per minute. A reading in excess of 10,000 ppmv above background or the dripping of organic liquid at a rate of more than 3 drops per minute is a violation of this permit and Rule 2201 and shall be reported as a deviation. [District Rules 2201 and 4623]
6. Any tank gauging or sampling device on a tank vented to the vapor recovery system shall be equipped with a gas-tight cover which shall be closed at all times except during gauging or sampling. [District Rules 2201 and 4623]
7. VOC fugitive emissions from the components in gas and light crude oil service shall not exceed 0.8 lb/day. [District Rules 2201 and 4623]
8. Operator shall visually inspect tank shell, hatches, seals, seams, cable seals, valves, flanges, connectors, and any other piping components directly affixed to the tank and within five feet of the tank at least once per year for liquid leaks, and with a portable hydrocarbon detection instrument conducted in accordance with EPA Method 21 for gas leaks. Operator shall also visually or ultrasonically inspect as appropriate, the external shells and roofs of uninsulated tanks for structural integrity annually. [District Rules 2201 and 4623]
9. Components found to be leaking either liquids or gases shall be immediately affixed with a tag showing the component to be leaking. Operator shall maintain records of the liquid or gas leak detection readings, date/time the leak was discovered, and date/time the component was repaired to a leak-free condition. [District Rules 2201 and 4623]
10. Upon detection of a liquid leak, defined as a leak rate of greater than or equal to 30 drops per minute, operator shall repair the leak within 8 hours. For leaks with a liquid leak rate of between 3 and 30 drops per minute, the leaking component shall be repaired within 24 hours after detection. [District Rules 2201 and 4623]
11. Upon detection of gas leak (VOC concentration >10,000 ppmv, measured in accordance with EPA Method 21), operator shall take on of the following actions: 1) eliminate the leak within 8 hours after detection; or 2) if the leak cannot be eliminated, then minimize the leak to the lowest possible level within 8 hours after detection by using best maintenance practices, and eliminate the leak within 48 hours after minimization. In no event shall the total time to minimize and eliminate a leak exceed 56 hours after detection. [District Rules 2201 and 4623]
12. If a component type for a given tank is found to leak during an annual inspection, then conduct quarterly inspections of that component type on the tank or tank system for four consecutive quarters. If a component type is found to have no leak after four consecutive quarterly inspections, then revert to annual inspections. [District Rules 2201 and 4623]
13. Leaking components that have been discovered by the operator that have been immediately tagged and repaired within the specified timeframes, shall not constitute a violation of District Rule 4623 (amended May 19, 2005). However, leaking components discovered during inspections by District staff that were not previously identified and/or tagged by the operator, and/or any leaks that were not repaired within specified timeframes, shall constitute a violation of the District Rule 4623 (amended May 19, 2005). [District Rules 2201 and 4623]
14. Any component found to be leaking by operator on two consecutive annual inspections is in violation of the District Rule 4623 (amended May 19, 2005), even if it is under the voluntary inspection and maintenance program. [District Rules 2201 and 4623]
15. The operator shall ensure that the vapor recovery system is functional and is operating as designed at all times and shall monitor vapor recovery compressor activation and shut off manometer pressures on quarterly basis to ensure that compressor activation pressure does not exceed tank and vapor recovery pressure relief valve setting. [District Rule Rules 2201 and 4623]
16. Operator shall maintain an inspection log containing the following 1) type of component leaking; 2) date and time of leak detection, and method of detection; 3) date and time of leak repair, and emission level of recheck after leak is repaired; 4) method used to minimize and repair leaks. [District Rule 1070]
17. This permit authorizes tank cleaning that is not the result of breakdowns or poor maintenance as a routine maintenance activity. [District Rule 2020]
18. Permittee shall comply with all applicable tank degassing and interior cleaning requirements specified in Section 5.7.5 of Rule 4623. [District Rule 4623]

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CONDITIONS CONTINUE ON NEXT PAGE

19. Emissions from the natural gas-fired unit shall not exceed any of the following limits: 82 ppmvd NOX @ 3% O2 or 0.1 lb-NOX/MMBtu, 0.0076 lb-PM10/MMBtu, 114 ppmvd CO @ 3% O2 or 0.084 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rule 2201]

20. The sulfur content of the gas combusted in heater shall not exceed 5 gr S/100 scf. [District Rule 2201]

21. If the heater is not fired on PUC-regulated natural gas and compliance is achieved through fuel sulfur content limitations, then the sulfur content of the fuel shall be determined by testing sulfur content at a location after all fuel sources are combined prior to incineration, or by performing mass balance calculations based on monitoring the sulfur content and volume of each fuel source. The sulfur content of the fuel shall be determined using EPA Method 11 or Method 15. [District Rule 2201]

22. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, permittee shall demonstrate compliance at least annually. [District Rule 2201]

23. If the heater is fired on PUC-regulated natural gas, valid purchase contracts, supplier certifications, tariff sheets, or transportation contracts may be used to satisfy the fuel sulfur content analysis, provided they establish the fuel sulfur concentration and higher heating value. [District Rule 2201]

24. All records required to be maintained by this permit shall be maintained for a period of at least five years and shall be made readily available for District inspection upon request. [District Rules 2201 and 4623]

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

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PERMIT NO: S-4034-41-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: E&B NATURAL RESOURCES
MAILING ADDRESS: HSE MANAGER
1600 NORRIS RD
BAKERSFIELD, CA 93308

LOCATION: LIGHT OIL WESTERN

EQUIPMENT DESCRIPTION:
COANDA-EFFECT PRODUCED GAS FLARE SERVING VAPOR CONTROL SYSTEM LISTED ON S-4034-29 (RIO VIEJO)

CONDITIONS

1. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. {15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
3. The flare shall only be used when the other disposal means are at their incinerating capacity or their operating function is not needed. For example, if tank heater S-4034-29 normal function is not needed, it needn't be operated solely to incinerate waste gas. [District Rule 2201]
4. Flare shall not be operated continuously for more than 30 consecutive days. Flaring is not continuous when flaring has ceased for three (3) or more consecutive hours. [District Rule 2201]
5. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
6. The flare shall be equiped with an operational gas flow meter. [District Rule 2201]
7. A flame shall be present at all times when combustible gases are vented through the flare. [District Rules 2201 and 4311]
8. Flare outlet shall be equipped with an automatic ignition system, or, shall operate with a pilot flame present at all times when combustible gases are vented through the flare, except during purge periods for automatic-ignition equipped flares. [District Rules 2201 and 4311]

CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director / APCO

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Arnaud Marjollet, Director of Permit Services

S-4034-41-0 : Feb 5 2018 12:43PM – TORID : Joint Inspection NOT Required

9. Flare shall be equipped with a heat sensing device such as a thermocouple, ultraviolet beam sensor, infrared sensor, or an equivalent device capable of continuously detecting at least one pilot flame or the flare flame is present. The flame detection device shall be kept operational at all times except during flare maintenance when the flare is isolated from gas flow. During essential planned power outages when the flare is operating, the pilot monitor is allowed to be non-functional if the flare flame is clearly visible to onsite operators. Effective on and after July 1, 2012, all pilot monitor downtime shall be reported annually pursuant to Rule 4311, section 6.2.3.6. [District Rule 4311]
10. Open flares in which the flare gas pressure is less than 5 psig shall be operated in such a manner that meets the provisions of 40 CFR 60.18. [District Rule 4311]
11. Total gas flow rate to flare shall not exceed 35,000 acf/day. [District Rule 2201]
12. Emissions from the flare shall not exceed any of the following: NOx 0.068 lb/MMBtu, CO 0.310 lb/MMBtu, PM10 0.026 lb/MMBtu and VOC 0.29 lb/MMBtu. [District Rule 2201]
13. The sulfur content of the gas being flared shall not exceed exceed 5.0 gr S/100scf. [District Rules 2201 and 4801]
14. Compliance with sulfur compound emission limit shall be demonstrated by testing for fuel sulfur content once every 24 months. [District Rule 2201]
15. The sulfur content of the gas being flared shall be determined using ASTM D1072, D3031, D4084, D3246 or grab sample analysis by GC-FPD/TCD performed in the laboratory. [District Rule 2201]
16. Permittee shall maintain daily records of volume of gas flared and annual records of the fuel sulfur content. [District Rule 2210]
17. All records, including required monitoring data and support information, shall be maintained and retained for a period of 5 years and made available for inspection at any time. [District Rule 1070]

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