



AUG 21 2012

Bill Oliver  
San Joaquin Facilities Management  
5400 Rosedale Highway  
Bakersfield, CA 93308

**Re: Notice of Preliminary Decision - Authority to Construct**  
**Project Number: S-1121705**

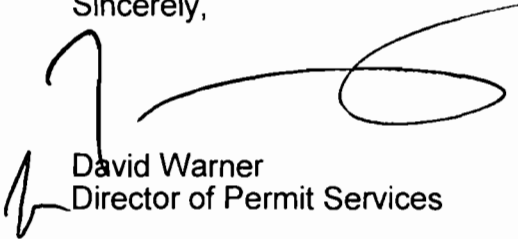
Dear Mr. Oliver:

Enclosed for your review and comment is the District's analysis of San Joaquin Facilities Management's application for an Authority to Construct for increasing the capacity of Flare '18 and revising the component counts and method of calculating the VOCs for several tanks at Light Oil Western stationary source in Kern County.

The notice of preliminary decision for this project will be published approximately three days from the date of this letter. Please submit your written comments on this project within the 30-day public comment period which begins on the date of publication of the public notice.

Thank you for your cooperation in this matter. If you have any questions regarding this matter, please contact Ms. Dolores Gough of Permit Services at (661) 392-5609.

Sincerely,



David Warner  
Director of Permit Services

DW: DG/cm

Enclosures

**Seyed Sadredin**  
Executive Director/Air Pollution Control Officer

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**Northern Region**  
4800 Enterprise Way  
Modesto, CA 95356-8718  
Tel: (209) 557-6400 FAX: (209) 557-6475

**Central Region (Main Office)**  
1990 E. Gettysburg Avenue  
Fresno, CA 93726-0244  
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**Southern Region**  
34946 Flyover Court  
Bakersfield, CA 93308-9725  
Tel: 661-392-5500 FAX: 661-392-5585



**AUG 21 2012**

Mike Tollstrup, Chief  
Project Assessment Branch  
Stationary Source Division  
California Air Resources Board  
PO Box 2815  
Sacramento, CA 95812-2815

**Re: Notice of Preliminary Decision - Authority to Construct**  
**Project Number: S-1121705**

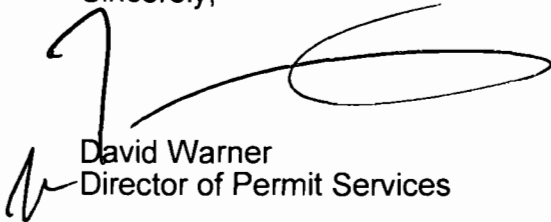
Dear Mr. Tollstrup:

Enclosed for your review and comment is the District's analysis of San Joaquin Facilities Management's application for an Authority to Construct for increasing the capacity of Flare '18 and revising the component counts and method of calculating the VOCs for several tanks, at Light Oil Western stationary source in Kern County.

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**NOTICE OF PRELIMINARY DECISION  
FOR THE PROPOSED ISSUANCE OF  
AN AUTHORITY TO CONSTRUCT**

NOTICE IS HEREBY GIVEN that the San Joaquin Valley Unified Air Pollution Control District solicits public comment on the proposed issuance of Authority to Construct to San Joaquin Facilities Management for increasing the capacity of Flare '-18 and revising the component counts and method of calculating the VOCs for several tanks, at Light Oil Western stationary source in Kern County.

The analysis of the regulatory basis for this proposed action, Project #S-1121705, is available for public inspection at [http://www.valleyair.org/notices/public\\_notices\\_idx.htm](http://www.valleyair.org/notices/public_notices_idx.htm) and the District office at the address below. Written comments on this project must be submitted within 30 days of the publication date of this notice to **DAVID WARNER, DIRECTOR OF PERMIT SERVICES, SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT, 34946 FLYOVER COURT, BAKERSFIELD, CA 93308.**

# San Joaquin Valley Air Pollution Control District

## Authority to Construct Application Review

### Increase Flare Rating and Revise Component Counts & Emission Factors for Crude Oil Tanks

Facility Name: San Joaquin Facilities Management                          Date: 8/14/2012  
Mailing Address: 5400 Rosedale Hwy    Engineer: Dolores Gough  
                                 Bakersfield, CA 93308    Lead Engineer: Dan Klevann  
Contact Person: Bill Oliver    *DK* 8/16/12  
                                 Telephone: (661) 631-8713  
Application #(s): S-2246-7-4, '-8-3, '-9-3, '-10-3 and '-18-1  
                                 Project #: 1121705  
Deemed Complete: 06/20/2012

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#### I. Proposal

The primary business of San Joaquin Facilities Management (SJFM) S-2246 facility is light crude oil production. SJFM has requested Authority to Construct permits for the following modifications:

- Increase the rating of Flare '-18 from 10 MMBtu/hr to 20 MMBtu/hr
- Revise the component count and emissions calculations for Tanks '-7, '-8, '9, and '-10

The requested modifications will result in an increase in emissions for the flare only.

See **Appendix A: Current Permits to Operate**

#### II. Applicable Rules

Rule 2201	New and Modified Stationary Source Review Rule (4/21/11)
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 (April 20, 2005)
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 equipment is located at the Cal Canal Lease, in the SE/4 of Section 31, Township 28S, Range 22E within SJFM'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**

San Joaquin Facilities Management, Inc. operates a crude oil production facility at the Cal Canal Lease. The facility processes produced fluid into produced water and crude oil. The tanks are connected to vapor control system and vents to a gas sales pipeline or to the subject flare. In addition to the tank vapor recovery listed on Tank '-7, the flare incinerates gas from oil production activities when the gas sales pipeline is not available.

### **V. Equipment Listing**

#### **Pre-Project Equipment Description:**

- S-2246-7-3: 31,500 GALLON FIXED ROOF PETROLEUM WASH TANK WITH VAPOR RECOVERY SYSTEM SHARED BETWEEN PERMITS S-2246-7, -8, -9 AND -10
- S-2246-8-2: ONE 84,000 GALLON FIXED ROOF PETROLEUM STORAGE TANK #13866 WITH VAPOR RECOVERY SYSTEM SHARED BETWEEN S-2246-7 TO '-10
- S-2246-9-2: ONE 21,000 GALLON FIXED ROOF PETROLEUM WASH TANK #13864 WITH VAPOR RECOVERY SYSTEM SHARED BETWEEN S-2246-7 TO '-10
- S-2246-10-2: ONE 21,000 GALLON FIXED ROOF PETROLEUM STORAGE TANK #13865 WITH VAPOR RECOVERY SYSTEM SHARED BETWEEN S-2246-7 TO '-10
- S-2246-18-0: 10 MMBTU/HR COANDA EFFECT FLARE SERVING TANK VAPOR CONTROL SYSTEM LISTED ON S-2246-7

#### **Proposed Modifications:**

- S-2246-7-4: MODIFICATION OF 31,500 GALLON FIXED ROOF PETROLEUM WASH TANK WITH VAPOR RECOVERY SYSTEM SHARED BETWEEN PERMITS S-2246-7, -8, -9 AND -10: REVISE METHOD OF CALCULATING EMISSIONS
- S-2246-8-3: MODIFICATION OF ONE 84,000 GALLON FIXED ROOF PETROLEUM STORAGE TANK #13866 WITH VAPOR RECOVERY SYSTEM SHARED BETWEEN S-2246-7 TO '-10: REVISE METHOD OF CALCULATING EMISSIONS

- S-2246-9-3: MODIFICATION OF ONE 21,000 GALLON FIXED ROOF PETROLEUM WASH TANK #13864 WITH VAPOR RECOVERY SYSTEM SHARED BETWEEN S-2246-7 TO '-10: REVISE METHOD OF CALCULATING EMISSIONS
- S-2246-10-3: MODIFICATION OF ONE 21,000 GALLON FIXED ROOF PETROLEUM STORAGE TANK #13865 WITH VAPOR RECOVERY SYSTEM SHARED BETWEEN S-2246-7 TO '-10: REVISE METHOD OF CALCULATING EMISSIONS
- S-2246-18-1: MODIFICATION OF 10 MMBTU/HR COANDA EFFECT FLARE SERVING TANK VAPOR CONTROL SYSTEM LISTED ON S-2246-7: INCREASE GAS FLOW RATE TO 20 MMBTU/HR

**Post-Project Equipment Description:**

- S-2246-7-4: 31,500 GALLON FIXED ROOF PETROLEUM WASH TANK WITH VAPOR RECOVERY SYSTEM SHARED BETWEEN PERMITS S-2246-7, -8, -9 AND -10
- S-2246-8-3: ONE 84,000 GALLON FIXED ROOF PETROLEUM STORAGE TANK #13866 WITH VAPOR RECOVERY SYSTEM SHARED BETWEEN S-2246-7 TO '-10
- S-2246-9-3: ONE 21,000 GALLON FIXED ROOF PETROLEUM WASH TANK #13864 WITH VAPOR RECOVERY SYSTEM SHARED BETWEEN S-2246-7 TO '-10
- S-2246-10-3: ONE 21,000 GALLON FIXED ROOF PETROLEUM STORAGE TANK #13865 WITH VAPOR RECOVERY SYSTEM SHARED BETWEEN S-2246-7 TO '-10
- S-2246-18-1: 20 MMBTU/HR COANDA EFFECT FLARE SERVING TANK VAPOR CONTROL SYSTEM LISTED ON S-2246-7

**VI. Emission Control Technology Evaluation**

Emissions from crude oil storage tanks consist of VOCs and sulfur compounds. The tanks are connected to a shared vapor recovery system that vents to gas sales pipeline or to a flare.

NO<sub>x</sub>, SO<sub>x</sub>, PM<sub>10</sub>, CO and VOC emissions can result from the combustion of gasses in the flare. The flare is equipped with Coanda-effect tip which draws in large amounts of air in order to increase turbulent mixing of fuel and air which promotes complete hydrocarbon combustion. This reduces carbon monoxide (CO) emissions and smoke/ particulate matter (PM10) which are caused by high temperatures and incomplete combustion.

To ensure that combustible gases are incinerated, the flare operates with a pilot flame present at all times when gases are vented through the flare.

## VII. General Calculations

### A. Assumptions

- Flared gas higher heating value: 1160 Btu/scf (Supplemental application)
- SO<sub>x</sub> (as SO<sub>2</sub>) emissions: 20 lb/day (current PTO)
- Pre-project flare rating: 10 MMBtu/hr
- Post-project flare rating: 20 MMBtu/hr
- Emissions from combustion of pilot gas are neglected

### B. Emission Factors

Tanks: S-2246-7, '-8, '-9 and '-10:

#### Pre-project (EF1):

The VOC emissions factor is from the current PTO and Project S-1054542 and used the *California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities*, Table IV-2c, and the *EPA Protocol for Equipment Leak Emission Estimat*. SJFM supplied data on the number of equipment connections with the appropriate number of leaking components as allowed by District Rule 4409.

#### Post-project (EF2):

VOC emissions from vapor components are estimated using CAPCOA's "California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities," Table IV-2C (Feb 1999), Screening Value Range Emission Factors with no leaks allowed. (See **Appendix B**)

Flare S-2246-18:

<b>Flare Emission Factors</b>		
<b>Pollutant</b>	<b>lb/MMBtu</b>	<b>Source of Emission Factor</b>
NO <sub>x</sub>	0.068	EPA AP-42/FYI-83
CO	0.370	EPA AP-42/FYI-83
VOC	0.063	EPA AP-42/FYI-83
PM <sub>10</sub>	0.008	EPA AP-42/FYI-83
SO <sub>x</sub>	20 lb/day	Current PTO

**C. Calculations**

**1. Pre-Project Potential to Emit (PE1)**

Tanks: S-2246-7-3, '-8-2, '-9-2 and '-10-2:

The tanks are connected to a shared vapor recovery system system listed on '-7; the calculated VOCs are from Project S-1054542 as shown below and in **Appendix B**:

$$\text{PE1 (lb/day)} = 55.1 \text{ (lb-VOC/day)}$$

$$\text{PE1 (lb/yr)} = 55.1 \text{ lb-VOC/day} \times 365 \text{ day/yr} = 20,112 \text{ lb-VOC/yr}$$

Flare: S-2246-18-0:

Pollutant	EF1	Rating	Operating Time		PE1	
	(MMBtu/hr)	(MMBtu/hr)	hr/day	hr/yr	lb/day	lb/yr
NOx	0.068	10	24	8760	16.3	5,957
SOx	20 lb/day	10			20.0	7,300
PM10	0.026	10			6.2	2,278
CO	0.37	10			88.8	32,412
VOC	0.063	10			15.1	5,519

**2. Post Project Potential to Emit (PE2)**

Tanks: S-2246-7-4, '-8-3, '-9-3 and '-10-3:

The calculated fugitive VOCs, included in **Appendix B**, are summarized below:

Permit	PE2 -VOC	
	lb/day	lb/yr
S-2246-7-4	1.3	475
S-2246-8-3	0.1	37
S-2246-9-3	0.1	37
S-2246-10-3	0.1	37

Flare: S-2246-18-1:

Pollutant	EF2	Rating	Operating Time		PE2	
	(MMBtu/hr)	(MMBtu/hr)	hr/day	hr/yr	lb/day	lb/yr
NOx	0.068	20	24	8760	32.6	11,914
SOx	20 lb/day	20			20.0	7,300
PM10	0.026	20			12.5	4,555
CO	0.37	20			177.6	64,824
VOC	0.063	20			30.2	11,038



**Greenhouse Gas Emissions (GHG) Increase:**

The GHG Emission Factor is 0.05368 metric tons CO<sub>2</sub>e /MMBtu (from ARB for natural gas with HHV of 1,100 Btu/scf).

$$\begin{aligned} \text{CO}_2\text{e mton/yr} &= 0.05368 \text{ mton CO}_2\text{e/MMBtu} \times 20 \text{ MMBtu/hr} \times 8760 \text{ hr/yr} \\ &= 9,405 \text{ mton CO}_2\text{e/yr} \end{aligned}$$

As shown in the above calculation, the GHG as CO<sub>2</sub>e is above the District threshold of 230 metric tons of CO<sub>2</sub>e/yr. To address the potential increase in GHG emissions, SJFM is proposing to comply with the best performance standard (BPS) developed by the District for VOC control devices. The produced gas will be transferred to sales gas pipeline and will be incinerated in the flare if sales gas pipeline is not available (Appendix J – BPS for VOC Control/Gas Disposal)

**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.

<b>SSPE1</b>					
<b>Permit Unit</b>	<b>NO<sub>x</sub> (lb/yr)</b>	<b>SO<sub>x</sub> (lb/yr)</b>	<b>PM<sub>10</sub> (lb/yr)</b>	<b>CO (lb/yr)</b>	<b>VOC (lb/yr)</b>
Tank S-2246-7-3	0	0	0	0	20,112
Tank S-2246-8-2	0	0	0	0	
Tank S-2246-9-2	0	0	0	0	
Tank S-2246-10-2	0	0	0	0	
Flare S-2246-18-0	5,957	7,300	2,278	32,412	5,519
<b>SSPE1 Permit Unit</b>	<b>5,957</b>	<b>7,300</b>	<b>2,278</b>	<b>32,412</b>	<b>25,631</b>
-200-3, ERC certificate	0	0	0	1,534	0
-2539-2, ERC certificate	904	0	0	0	0
3180-1, ERC Certificate	0	0	0	0	130
-3210-1, ERC certificate	0	0	0	0	132,664
<b>Total ERC</b>	<b>904</b>	<b>0</b>	<b>0</b>	<b>1,534</b>	<b>132,794</b>
<b>SSPE1 Total</b>	<b>6,861</b>	<b>7,300</b>	<b>2,278</b>	<b>33,946</b>	<b>158,425</b>

**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.

<b>SSPE2</b>					
Permit Unit	NO <sub>x</sub> (lb/yr)	SO <sub>x</sub> (lb/yr)	PM <sub>10</sub> (lb/yr)	CO (lb/yr)	VOC (lb/yr)
Tank S-2246-7-4	0	0	0	0	475
Tank S-2246-8-3	0	0	0	0	37
Tank S-2246-9-3	0	0	0	0	37
Tank S-2246-10-3	0	0	0	0	37
Flare S-2246-18-1	11,914	7,300	4,555	64,824	11,038
<b>SSPE2<sub>Permit Unit</sub></b>	<b>11,914</b>	<b>7,300</b>	<b>4,555</b>	<b>64,824</b>	<b>11,624</b>
-200-3, ERC certificate	0	0	0	1,534	0
-2539-2, ERC certificate	904	0	0	0	0
3180-1, ERC Certificate	0	0	0	0	130
-3210-1, ERC certificate	0	0	0	0	132,664
<b>Total<sub>ERC</sub></b>	<b>904</b>	<b>0</b>	<b>0</b>	<b>1,534</b>	<b>132,794</b>
<b>SSPE2 Total</b>	<b>12,818</b>	<b>7,300</b>	<b>4,555</b>	<b>66,358</b>	<b>144,418</b>

**5. 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. However, for the purposes of determining major source status, the SSPE2 shall not include 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."

<b>Major Source Determination (lb/year)</b>					
	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	CO	VOC
SSPE1 (without ERCs)	5,957	7,300	2,278	32,412	25,631
SSPE2 (without ERCs)	11,914	7,300	4,555	64,824	11,624
Major Source Threshold	20,000	140,000	140,000	200,000	20,000
Major Source?	No	No	No	No	No

As seen in the table above, the facility is an existing Major Source for VOC emissions; however, is not a Major Source as a result of this project.

## **6. Baseline Emissions (BE)**

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

Pursuant to District Rule 2201, BE = Pre-project Potential to Emit 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 Section 3.22 of District Rule 2201.

As shown in Section VII.C.5 above, the facility is not a Major Source for any pollutant. Therefore, Baseline Emissions (BE) are equal to the Pre-Project Potential to Emit (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 any of the pollutants addressed in this project, this project does not constitute an SB288 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.

Since this facility is not a Major Source for any pollutants, this project does not constitute a Federal Major Modification. Additionally, since the facility is not a major source for PM<sub>10</sub> (140,000 lb/year), it is not a major source for PM<sub>2.5</sub> (200,000 lb/year).

## **9. 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 C**.

## VIII. Compliance

### Rule 2201 New and Modified Stationary Source Review Rule

#### 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 exempted pursuant to Section 4.2, 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 AIPE exceeding two pounds per day, and/or
- d. Any new or modified emissions unit, in a stationary source project, which results in an SB288 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 discussed in Section I above, there are no new emissions units associated with this project; therefore, BACT for new units with PE > 2 lb/day purposes is not triggered.

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

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

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

$$\text{AIPE} = \text{PE2} - \text{HAPE}$$

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)

$$\text{HAPE} = \text{PE1} \times (\text{EF2}/\text{EF1})$$

Where,

PE1 = The emissions unit's Potential to Emit 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

$$AIPE = PE2 - (PE1 * (EF2 / EF1))$$

Tanks S-2246-7, '-8, '-9 and '-10 are being modified in this project:

The tanks' EF will not change in this project. As the tanks' PE2 < PE1, the AIPEs are not greater than 2.0 lb/day for VOC emissions for any tank. Therefore, BACT is not triggered.

**Flare S-2246-18:**

<b>BACT Determination (lb/day)</b>					
	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	CO	VOC
PE2 (lb/day)	32.6	20.0	12.5	177.6	30.2
PE1 (lb/day)	16.3	20.0	6.2	88.8	15.1
EF2/EF1	1.0	1.0	1.0	1.0	1.0
AIPE (lb/day)	16.3	0	6.3	88.8	15.1
AIPE > 2.0 lb/day	Yes	No	Yes	Yes	Yes

As shown above, the AIPE for NO<sub>x</sub>, PM<sub>10</sub>, CO and VOC are greater than 2.0 lb/day. BACT is triggered for NO<sub>x</sub>, PM<sub>10</sub> and VOC only since the PEs are greater than 2 lbs/day. BACT is not triggered for CO since the SSPE2 for CO is not greater than 200,000 lbs/year, as demonstrated in Section VII.C.5 above.

**d. SB 288/Federal Major Modification**

As discussed in Section VII.C.7 above, this project does not constitute a SB 288 and/or Federal Major Modification for NO<sub>x</sub> emissions; therefore, BACT is not triggered for any pollutant.

**2. BACT Guideline**

BACT Guideline 1.4.2 applies to "Waste Gas Flare –Incinerating Produced Gas" (See Appendix D)

**3. Top-Down BACT Analysis**

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

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

- NO<sub>x</sub>: Coanda-effect burner
- PM<sub>10</sub>: Coanda-effect burner
- VOC: Coanda-effect burner

**B. Offsets**

**1. Offset Applicability**

Pursuant to Section 4.5.3, offset requirements shall be triggered on a pollutant by pollutant basis and shall be required if the Post Project Stationary Source Potential to Emit (SSPE2) equals to or exceeds the offset threshold levels in Table 4-1 of Rule 2201.

The following table compares the post-project facility-wide annual emissions in order to determine if offsets will be required for this project.

<b>Offset Determination (lb/year)</b>					
	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	CO	VOC
Post Project SSPE (include ERCs)	12,818	7,300	4,555	66,358	144,418
Offset Threshold	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) =  $(\Sigma[PE2 - BE] + ICCE) \times DOR$ , for all new or modified emissions units in the project,

Where,

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

BE = Baseline Emissions, (lb/year)

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

DOR = Distance Offset Ratio, determined pursuant to Section 4.8

BE = Pre-project Potential to Emit 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)

The facility is not a major source for VOC; therefore, BE = PE1 for all the units in this project.

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

PE2 (VOC) = PE2 (tanks) + PE2 (flare) = 586 + 11,038 = 11,634 lb/yr  
BE (VOC) = BE (tanks) + BE (tank) = 20,112 + 5,519 = 25,631 lb/yr  
ICCE = 0 lb/year

Offsets Required (lb/yr) = [11,634 – 25,631] + ICE x DOR = -13,997 x DOR

As calculated above, offsets are not required for the VOC emissions increase associated with the flare.

## C. Public Notification

### 1. Applicability

Public noticing is required for:

- a. New Major Sources, Federal Major Modifications, and SB288 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, and/or
- d. Any project with an SSIPE of greater than 20,000 lb/year for any pollutant.

#### a. New Major Sources, Federal Major Modifications, and SB288 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.

#### b. PE > 100 lb/day

Applications which include a new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any pollutant will trigger public noticing requirements. There are no new emissions units associated with this project; therefore public noticing is not required for this project for Potential to Emit Purposes.

**c. Offset Threshold**

The following table compares the SSPE1 with the SSPE2 in order to determine if any offset thresholds have been surpassed with this project.

<b>Offset Threshold</b>				
Pollutant	SSPE1 (lb/year)	SSPE2 (lb/year)	Offset Threshold	Public Notice Required?
NO <sub>x</sub>	6,861	12,818	20,000 lb/year	No
SO <sub>x</sub>	7,300	7,300	54,750 lb/year	No
PM <sub>10</sub>	2,278	4,555	29,200 lb/year	No
CO	33,936	66,358	200,000 lb/year	No
VOC	158,425	144,418	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.

<b>Stationary Source Increase in Permitted Emissions [SSIPE] – Public Notice</b>					
Pollutant	SSPE2 (lb/year)	SSPE1 (lb/year)	SSIPE (lb/year)	SSIPE Public Notice Threshold	Public Notice Required?
NO <sub>x</sub>	12,818	6,861	5,957	20,000 lb/year	No
SO <sub>x</sub>	7,300	7,300	0	20,000 lb/year	No
PM <sub>10</sub>	4,555	2,278	2,277	20,000 lb/year	No
CO	66,358	33,936	32,422	20,000 lb/year	Yes
VOC	144,418	158,425	-14,007	20,000 lb/year	No

As demonstrated above, the SSIPE for CO is greater than 20,000 lb/year; therefore, public noticing for SSIPE purposes is required.

**2. Public Notice Action**

As discussed above, public noticing is required for this project for CO emissions in excess of 20,000 lb/yr SSIPE. 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)**

Daily Emissions Limitations (DELs) and other enforceable conditions are required to restrict a unit's maximum daily emissions, to a level at or below the emissions associated with the maximum design capacity. Per Sections 3.16.1 and 3.16.2, 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.

- Emission rates from this unit shall not exceed any of the following limits: PM10: 0.026 lb/MMBtu, NOx (as NO<sub>2</sub>): 0.068 lb/MMBtu, VOC: 0.063 lb/MMBtu, CO: 0.37 lb/MMBtu. [District Rule 2201]
- SOx emissions (as SO<sub>2</sub>) shall not exceed 20.0 lb/day. Compliance with the SOx emission limit can be demonstrated by limiting the sulfur content of the gas flared to no more than 592 ppmv, or by recording the sulfur content and the quantity of gas flared. [District Rule 2201]
- Total quantity of produced gas combusted in flare shall not exceed 400,000 scf/day. [District Rule 2201] 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**

The following monitoring is required to demonstrate compliance with Rule 2201.

- The flared gas sulfur concentration shall be measured using one of the following test methods: ASTM D1072, ASTM D3246, ASTM D6228 (GC-FPD), double GC for H<sub>2</sub>S and mercaptans, or equivalent test method with prior District approval. [District Rule 2201] N
- Permittee shall measure sulfur content of gas introduced to the flare at startup and at least once every year. Such data shall be submitted to the District within 60 days of sample collection.
- Higher heating value of flared gas shall be determined using ASTM D 1826 or D 1945 in conjunction with ASTM D 3588. [District Rule 2201] N

##### **3. Recordkeeping**

- The permittee shall keep accurate daily and annual records of the amount of gas combusted in the flare, hours of operation and the sulfur content and heat content of the gas combusted. The permittee shall keep these records for a period of at least five years and shall make such records available for District inspection upon request. [District Rules 2201 and 4311] N

#### 4. Reporting

No reporting is required to demonstrate compliance with Rule 2201.

#### F. Ambient Air Quality Analysis

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<sub>x</sub>, CO, and SO<sub>x</sub>. As shown in the AAQA summary sheet the proposed equipment will not cause or significantly contribute to a violation of a State or National AAQS.

Analysis Parameters			
Source Type	Point	Closest Receptor (m)	610
Effective Release Height (m)	4.57	Closest Receptor Type	Residence & Business
Stack Inside Diameter (m)	0.78	Project Location Type	Rural
Gas Exit Temperature (K)	755	Gas Exit Velocity (m/s)	20

Technical Services performed modeling for criteria pollutants CO, NO<sub>x</sub>, SO<sub>x</sub> and PM<sub>10</sub>; as well as a RMR.

The results from the Criteria Pollutant Modeling are as follows:

#### Criteria Pollutant Modeling Results\*

Flare	1 Hour	3 Hours	8 Hours.	24 Hours	Annual
CO	Pass	X	Pass	X	X
NO <sub>x</sub>	Pass	X	X	X	Pass
SO <sub>x</sub>	Pass	Pass	X	Pass	Pass
PM <sub>10</sub>	X	X	X	Pass <sup>1</sup>	Pass <sup>1</sup>
PM <sub>2.5</sub>	X	X	X	Pass <sup>2</sup>	Pass <sup>2</sup>

\*Results were taken from the attached PSD spreadsheet.

<sup>1</sup>The criteria pollutants are below EPA's level of significance as found in 40 CFR Part 51.165 (b)(2).

<sup>2</sup>For this case as per District procedure, minor PM<sub>2.5</sub> sources are modeled only for primary PM<sub>2.5</sub> concentrations, and these concentrations are compared to the 24-hour SIL of 1.2 ug/m<sup>3</sup> and the annual SIL of 0.3 ug/m<sup>3</sup>.

### **Rule 2520 Federally Mandated Operating Permits**

Since this facility's potential emissions do not exceed any major source thresholds of Rule 2201, this facility is not a major source, and Rule 2520 does not apply.

### **Rule 4001 New Source Performance Standards (NSPS)**

**40 CFR 60 Subpart Kb** *Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984*

This subpart applies to oil tanks with a capacity greater than 10,000 barrels. Since the tank in this project does not exceed 10,000 barrels, this subpart is not applicable to this project.

There are no Subparts of 40 CFR 60 applicable to Flares.

### **Rule 4101 Visible Emissions**

Per Section 5.0, no person shall discharge into the atmosphere emissions of any air contaminant aggregating more than 3 minutes in any hour which is as dark as or darker than Ringelmann 1 (or 20% opacity).

- {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] N

Compliance is expected.

### **Rule 4102 Nuisance**

Section 4.0 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 future 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. It is assumed that all particulate emissions from gas combustion in the flare is PM<sub>10</sub>.

$$0.026 \frac{lb}{MMBtu} \times \frac{MMBtu}{8,578 dscf} \times \frac{7,000 grain}{lb} = 0.02 \frac{grain}{dscf}$$

Since 0.02 grain/dscf is less than 0.1 grain/dscf, compliance with this rule is expected.

### Rule 4301 Fuel Burning Equipment

This rule specifies maximum emission rates in lb/hr for SO<sub>2</sub>, NO<sub>2</sub>, 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 <sub>2</sub>	1.3	140	Yes
SO <sub>2</sub>	0.8	200	Yes
Total PM	0.5	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 (NO<sub>x</sub>), 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 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 ATCs 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 ATCs 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 flare operates on a continuous pilot; therefore, this section does not apply.

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-2980-18 is a Coanda effect flare; therefore, this section does not apply.

Section 5.7 states that ground-level enclosed flares meet the defined emission standards. The flares involved with this project are 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. Section 6.5.3 states that an updated FMP shall be submitted by the operator pursuant to Section 6.5 addressing new or modified equipment, prior to installing the equipment. Updated FMP submittals are only required if: The equipment change would require an authority to construct (ATC) and would impact the emissions from the flare, and the ATC is deemed complete after June 18, 2009, and the modification is not solely the removal or decommissioning of equipment that is listed in the FMP, and has no associated increase in flare emissions. Therefore, an updated FMP is required. The following condition will be listed on the ATC to ensure compliance:

- An updated Flare Minimization Plan shall be submitted for this flare prior to its installation. [District Rule 4311] N

Section 5.9 sites Petroleum Refinery SO<sub>2</sub> 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. Section 5.10 is not effective till after July 1, 2011. The following conditions will be listed on the ATC to ensure compliance:

- Flare shall be equipped with operational produced gas volume flow meter. [District Rule 2201]
- The permittee shall keep accurate daily and annual records of the amount of gas combusted in the flare, hours of operation and the sulfur content and heat content of the gas combusted. The permittee shall keep these records for a period of at least five years and shall make such records available for District inspection upon request. [District Rules 2201 and 4311] N

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 purpose of this rule is to limit VOC emissions from leaking components at light crude oil production facilities, natural gas production facilities, and natural gas processing facilities.

Existing conditions addressing Rule 4409 will be retained to ensure compliance with this rule.

### **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.

The affected tanks are served by a vapor control system that has a control efficiency of at least 95%. This rule also requires the tank and tank vapor control system to be maintained in a leak-free condition. Leak-free is defined in the rule as no readings on a portable VOC detection device greater than 10,000 ppmv above background and no dripping of organic liquid at a rate of more than 3 drops per minute.

Existing Rule 4623 conditions will be retained or updated, as appropriate, to ensure continued compliance with the rule.

### **Rule 4801 Sulfur Compounds**

Rule 4801 requires that 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: two-tenths (0.2) percent by volume calculated as sulfur dioxide (SO<sub>2</sub>), on a dry basis averaged over 15 consecutive minutes.

The SO<sub>x</sub> emission factor used is 592 ppmv. This value is much less than the limit of Rule 4801 (2,000 ppmv). Compliance with the rule is expected and assured by the SO<sub>x</sub> emission factor, testing, and recordkeeping requirements.

### **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)**

The California Environmental Quality Act (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 San Joaquin Valley Unified Air Pollution Control District (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.

- 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.
- 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.

It is determined that no other agency has or will prepare an environmental review document for the project. Thus the District is the Lead Agency for this project.

Project specific impacts on global climate change were evaluated consistent with the adopted District policy – *Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency*. The District’s engineering evaluation (this document) demonstrates that the project includes Best Performance Standards (BPS) for each class and category of greenhouse gas emissions unit. The District therefore concludes that the project would have a less than cumulatively significant impact on global climate change.

The District is the Lead Agency for this project because there is no other agency with broader statutory authority over this project. The District performed an Engineering Evaluation (this document) for the proposed project and determined that the activity will occur at an existing facility and the project involves negligible expansion of the existing use. Furthermore, the District determined that the activity will not have a significant effect on the environment. The District finds that the activity is categorically exempt from the provisions of CEQA pursuant to CEQA Guideline § 15031 (Existing Facilities), and finds that the project is exempt per the general rule that CEQA applies only to projects which have the potential for causing a significant effect on the environment (CEQA Guidelines §15061(b)(3)).

**IX. Recommendation**

Compliance with all applicable rules and regulations is expected. Issue Authority to Construct S-2246-7-4, ‘-8-3, ‘-9-3 ‘-10-3 and ‘-18-1 subject to the permit conditions on the attached draft Authority to Construct in **Appendix F**

**X. Billing Information**

<b>Annual Permit Fees</b>			
Permit Number	Fee Schedule	Fee Description	Annual Fee
S-2246-7-4	3020-05S-C	31,500 gal.	\$63
S-2246-8-3	3020-05S-D	84,000 gal.	\$75
S-2246-9-3	3020-05S-C	21,000 gal.	\$63
S-2246-10-3	3020-05S-C	21,000 gal.	\$63
S-2246-18-1	3020-02-G	20. MMBtu/hr	\$815



## **Appendix A**

### **Permit(s) to Operate**

# San Joaquin Valley Air Pollution Control District

**PERMIT UNIT:** S-2246-7-3

**EXPIRATION DATE:** 04/30/2015

**SECTION:** SE 31 **TOWNSHIP:** 28S **RANGE:** 22E

**EQUIPMENT DESCRIPTION:**

31,500 GALLON FIXED ROOF PETROLEUM WASH TANK WITH VAPOR RECOVERY SYSTEM SHARED BETWEEN PERMITS S-2246-7, -8, -9 AND -10

## PERMIT UNIT REQUIREMENTS

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1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. Permittee's crude oil production shall average less than 6,000 bbl/day from all operations within Kern County and permittee shall not engage in refining, transporting, or marketing of refined petroleum products. [District Rule 4623]
3. Fugitive VOC emissions rate for the gas production pipeline, shall be calculated using CAPCOA California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities, Table IV-2c, Oil and Gas Production Screening Value Ranges Emission Factors (Feb 1999), from the total number of components in liquid service, tank components, vapor piping to vapor recovery system manifold, and vapor recovery system shall not exceed 55.1 lb/day. [District Rule 2201]
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 leak-free condition. The VOC control device shall be one of the following: a condensation or vapor return system that connects to one of the following; a gas processing plant, a field gas pipeline, a pipeline distributing Public Utility Commission quality gas for sale, an injection well for disposal of vapors as approved by the California Department of Conservation, Division of Oil Gas, and Geothermal Resources; or an approved VOC destruction device that reduces the inlet VOC emissions by at least 99% by weight as determined by the test method specified in Section 6.4.6 of District Rule 4623. [District Rule 4623]
5. Tank vapors collected by vapor control system shall only be vented to gas pipeline or to flare S-2246-18. [District Rule 2201]
6. The vapor recovery system is shared with permit units S-2246-8, -9, and -10. It consists of a 10 - 20 mcf/day primary vapor recovery compressor and a backup compressor that draws vapors from the tanks and routes the vapors to a gas pipeline. The tank vapor control system shall include vapor lines from tanks to gas boots, pressure sensing line, wet/dry gas regulators (Varec #180/#181), pressure/vacuum relief valve (Varec #2010 or equivalent). The system includes an automatic vacuum control valve on the suction side of the vapor recovery unit that will activate the compressor within the vapor recovery system design pressure range to control VOC emission as required by District Rule 4623. [District Rules 2201 and 4623]
7. The operator shall maintain a copy of the latest APCO-approved Operator Management Plan (OMP) at the facility and make it available to the APCO, ARB, and US EPA upon request. [District Rule 4409]
8. By January 30 of each year, the operator shall submit to the APCO for approval, in writing, an annual report indicating any changes to the existing, approved OMP. [District Rule 4409]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

9. In accordance with the approved OMP, the operator shall meet all applicable operating, inspection and re-inspection, maintenance, process pressure relief device (PRD), component identification, record keeping, and notification requirements of Rule 4409 for all components containing or contacting VOC's at this facility except for those components specifically exempted in Sections 4.1 and 4.2 of Rule 4409. [District Rule 4409]
10. The operator shall maintain an inspection log that has been signed and dated by the facility operator responsible for the inspection, certifying the accuracy of the information recorded in the log. The inspection log shall contain, at a minimum, all of the following information: 1) The total number of components inspected, and the total number and percentage of leaking components found by component types; 2) The location, type, name or description of each leaking component and the description of any unit where the leaking component is found; 3) Date of the leak detection and method of the leak detection; 4) For gaseous leaks, record the leak concentration in ppmv, and for liquid leaks record whether the leak is a major liquid leak or a minor liquid leak; 5) The date of repair, replacement, or removal from operation of the leaking component(s); 6) The identification and location of essential components and critical components found leaking that cannot be repaired until the next process unit turnaround or not later than one year after leak detection, whichever comes first; 7) The method(s) used to minimize the leak from essential components and critical components found leaking that cannot be repaired until the next process unit turnaround or not later than one year after leak detection, whichever comes earlier; 8) The date of re-inspection and the leak concentration in ppmv after the component is repaired or is replaced; 9) The inspector's name, business mailing address, and business telephone number. [District Rule 4409, 6.2.1]
11. Records of leaks detected during quarterly or annual operator inspections, and each subsequent repair and re-inspection, shall be submitted to the District, ARB, and EPA upon request. [District Rule 4409, 6.2.2]
12. Records shall be maintained of each calibration of the portable hydrocarbon detection instrument utilized for inspecting components. The records shall include a copy of the current calibration gas certification from the vendor of the calibration gas cylinder, the date of calibration, the concentration of calibration gas, the instrument reading of calibration gas before adjustment, the instrument reading of calibration gas after adjustment, the calibration gas expiration date, and the calibration gas cylinder pressure at the time of calibration. [District Rule 4409, 6.2.3]
13. All records required by this permit shall be maintained and retained on-site for a minimum of five (5) years and made available for District, ARB, and EPA inspection upon request. [District Rule 4409, 6.2.4]

These terms and conditions are part of the Facility-wide Permit to Operate..

# San Joaquin Valley Air Pollution Control District

**PERMIT UNIT:** S-2246-8-2

**EXPIRATION DATE:** 04/30/2015

**SECTION:** SE31 **TOWNSHIP:** 28S **RANGE:** 22E

**EQUIPMENT DESCRIPTION:**

ONE 84,000 GALLON FIXED ROOF PETROLEUM STORAGE TANK #13866 WITH VAPOR RECOVERY SYSTEM SHARED BETWEEN S-2246-7 TO '10

## PERMIT UNIT REQUIREMENTS

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1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. To maintain status as a small producer, permittee's crude oil production shall average less than 6000 bbl/day from all operations within Kern County and permittee shall not engage in refining, transporting, or marketing of refined petroleum products. [District Rule 4623]
3. Tank roof, seams, welds, joints, sample wells, pressure relief valves, etc. shall be maintained gas-tight. [District Rules 4623 and 2201]
4. Tank shall be equipped with temperature indicator. [District Rule 2201]
5. Tank vapors collected by vapor control system shall only be vented to gas pipeline or to flare S-2246-18. [District Rule 2201]
6. 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 that reduces the inlet VOC emissions by at least 99% by weight as determined by the test method specified in Section 6.4.7. [District Rule 4623 and 2201]
7. 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 and shall be reported as a deviation. [District Rule 4623]
8. 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 Rule 4623]
9. Permittee shall record and maintain monthly records of average daily crude oil throughput and shall make such records readily available for District inspection upon request for a period of five years. [District Rules 4623, 1070 and 2201]

These terms and conditions are part of the Facility-wide Permit to Operate.

# San Joaquin Valley Air Pollution Control District

**PERMIT UNIT:** S-2246-9-2

**EXPIRATION DATE:** 04/30/2015

**SECTION:** SE31 **TOWNSHIP:** 28S **RANGE:** 22E

**EQUIPMENT DESCRIPTION:**

ONE 21,000 GALLON FIXED ROOF PETROLEUM WASH TANK #13864 WITH VAPOR RECOVERY SYSTEM SHARED BETWEEN S-2246-7 TO '10

## PERMIT UNIT REQUIREMENTS

---

1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. To maintain status as a small producer, permittee's crude oil production shall average less than 6000 bbl/day from all operations within Kern County and permittee shall not engage in refining, transporting, or marketing of refined petroleum products. [District Rule 4623]
3. Tank roof, seams, welds, joints, sample wells, pressure relief valves, etc. shall be maintained gas-tight. [District Rules 2201 and 4623]
4. Tank shall be equipped with temperature indicator. [District Rule 2201]
5. Tank shall be designed and operated at a constant level. [District Rule 2201]
6. Tank vapors collected by vapor control system shall only be vented to gas pipeline or to flare S-2246-18. [District Rule 2201]
7. 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 that reduces the inlet VOC emissions by at least 99% by weight as determined by the test method specified in Section 6.4.7. [District Rule 4623]
8. 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 and shall be reported as a deviation. [District Rule 4623]
9. 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 Rule 4623]
10. Permittee shall record and maintain monthly records of average daily crude oil throughput and shall make such records readily available for District inspection upon request for a period of five years. [District Rules 4623, 1070 and 2201]

These terms and conditions are part of the Facility-wide Permit to Operate.

# San Joaquin Valley Air Pollution Control District

**PERMIT UNIT:** S-2246-10-2

**EXPIRATION DATE:** 04/30/2015

**SECTION:** SE31 **TOWNSHIP:** 28S **RANGE:** 22E

**EQUIPMENT DESCRIPTION:**

ONE 21,000 GALLON FIXED ROOF PETROLEUM STORAGE TANK #13865 WITH VAPOR RECOVERY SYSTEM SHARED BETWEEN S-2246-7 TO '1-10

## PERMIT UNIT REQUIREMENTS

---

1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. To maintain status as a small producer, permittee's crude oil production shall average less than 6000 bbl/day from all operations within Kern County and permittee shall not engage in refining, transporting, or marketing of refined petroleum products. [District Rule 4623]
3. Tank roof, seams, welds, joints, sample wells, pressure relief valves, etc. shall be maintained gas-tight. [District Rules 2201 and 4623]
4. Tank shall be equipped with temperature indicator. [District Rule 2201]
5. Tank vapors collected by vapor control system shall only be vented to gas pipeline or to flare S-2246-18. [District Rule 2201]
6. 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 that reduces the inlet VOC emissions by at least 99% by weight as determined by the test method specified in Section 6.4.7. [District Rule 4623]
7. All piping, valves, and fittings shall be constructed and maintained in a gas-tight condition. [District Rule 4623]
8. 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 and shall be reported as a deviation. [District Rule 4623]
9. 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 Rule 4623]
10. Permittee shall record and maintain monthly records of average daily crude oil throughput and shall make such records readily available for District inspection upon request for a period of five years. [District Rules 4623, 1070 and 2201]

These terms and conditions are part of the Facility-wide Permit to Operate.

# San Joaquin Valley Air Pollution Control District

PERMIT UNIT: S-2246-18-0

EXPIRATION DATE: 04/30/2015

SECTION: SE31 TOWNSHIP: 28S RANGE: 22E

**EQUIPMENT DESCRIPTION:**

10 MMBTU/HR COANDA EFFECT FLARE SERVING TANK VAPOR CONTROL SYSTEM LISTED ON S-2246-7

## PERMIT UNIT REQUIREMENTS

---

1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. 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 be equipped with an automatic ignition system. [District Rule 4311]
4. A flame shall be present at all times when combustible gases are vented through the flare. [District Rule 4311]
5. Emission rates from this unit shall not exceed any of the following limits: NO<sub>x</sub> (as NO<sub>2</sub>): 0.068 lb/MMBtu; VOC (as methane): 0.063 lb/MMBtu; CO: 0.370 lb/MMBtu; or PM<sub>10</sub>: 0.026 lb/MMBtu. [District Rule 2201]
6. SO<sub>x</sub> emissions (as SO<sub>2</sub>) shall not exceed 20.0 lb/day. Compliance with the SO<sub>x</sub> emission limit can be demonstrated by limiting the sulfur content of the gas flared to no more than 592 ppmv, or by recording the sulfur content and the quantity of gas flared. [District Rule 2201]
7. Permittee shall measure sulfur content of gas introduced to the flare at startup and at least once every year. Such data shall be submitted to the District within 60 days of sample collection. [District Rule 2201]
8. The flare gas sulfur concentration shall be measured using one of the following test methods: ASTM D1072, ASTM D3246, ASTM D6228 (GC-FPD), double GC for H<sub>2</sub>S and mercaptans, or equivalent test method with prior District approval. [District Rule 2201]
9. The permittee shall keep accurate daily records of the amount of gas combusted in the flare, hours of operation and the sulfur content and heat content of the gas combusted. The permittee shall keep these records for a period of at least five years and shall make such records available for District inspection upon request. [District Rules 2201 and 4311]

These terms and conditions are part of the Facility-wide Permit to Operate.

## **Appendix B**

### **PE Calculations**





**San Joaquin Facilities Management**

S- 2246-7, '8, '9, '-10

PE 2

**Fugitive Emissions Using Screening Emission Factors**

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

*Table IV-2c. Oil and Gas Production  
Screening Value Ranges Emission Factors*

Percentage of components with  $\geq 10,000$  ppmv leaks allowed? 0 %  
 Weight percentage of VOC in the total organic compounds in gas (neglect non-organics)? 100 %  
 Weight percentage of VOC in the total organic compounds in oil (neglect non-organics)? 100 %

Equipment Type	Service	Component Count	Total allowable leaking components	Screening Value EF - TOC		VOC emissions (lb/day)
				< 10,000 ppmv (lb/day/source)	$\geq 10,000$ ppmv (lb/day/source)	
Valves	Gas/Light Liquid	8	0	1.852E-03	7.333E+00	0.01
	Light Crude Oil	2	0	1.005E-03	3.741E+00	0.00
	Heavy Crude Oil	0	0	7.408E-04	N/A*	0.00
Pump Seals	Gas/Light Liquid	0	0	5.270E-02	4.709E+00	0.00
	Light Crude Oil	0	0	1.402E-02	4.709E+00	0.00
	Heavy Crude Oil	0	0	N/A	N/A	N/A
Others	Gas/Light Liquid	4	0	7.778E-03	7.281E+00	0.03
	Light Crude Oil	1	0	6.931E-03	3.757E-01	0.01
	Heavy Crude Oil	0	0	3.016E-03	N/A*	0.00
Connectors	Gas/Light Liquid	28	0	6.349E-04	1.370E+00	0.02
	Light Crude Oil	16	0	5.291E-04	1.238E+00	0.01
	Heavy Crude Oil	0	0	4.233E-04	4.233E-04	0.00
Flanges	Gas/Light Liquid	6	0	1.482E-03	3.228E+00	0.01
	Light Crude Oil	4	0	1.270E-03	1.376E+01	0.01
	Heavy Crude Oil	0	0	1.217E-03	N/A*	0.00
Open-ended Lines	Gas/Light Liquid	0	0	1.270E-03	2.905E+00	0.00
	Light Crude Oil	0	0	9.524E-04	1.175E+00	0.00
	Heavy Crude Oil	0	0	7.937E-04	3.762E+00	0.00

\* Emission factor not available. All components from equipment type and service will be assessed as < 10,000 ppmv

**Total VOC Emissions = 0.1 lb/day**

**FACILITY NAME**  
VRU on S-2246-7

PE 2

**Fugitive Emissions Using Screening Emission Factors**

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

*Table IV-2c. Oil and Gas Production  
Screening Value Ranges Emission Factors*

Percentage of components with  $\geq 10,000$  ppmv leaks allowed? 0 %  
 Weight percentage of VOC in the total organic compounds in gas (neglect non-organics)? 100 %  
 Weight percentage of VOC in the total organic compounds in oil (neglect non-organics)? 100 %

Equipment Type	Service	Component Count	Total allowable leaking components	Screening Value EF - TOC		VOC emissions (lb/day)
				< 10,000 ppmv (lb/day/source)	$\geq 10,000$ ppmv (lb/day/source)	
Valves	Gas/Light Liquid	140	0	1.852E-03	7.333E+00	0.26
	Light Crude Oil	24	0	1.005E-03	3.741E+00	0.02
	Heavy Crude Oil	0	0	7.408E-04	N/A*	0.00
Pump Seals	Gas/Light Liquid	4	0	5.270E-02	4.709E+00	0.21
	Light Crude Oil	0	0	1.402E-02	4.709E+00	0.00
	Heavy Crude Oil	0	0	N/A	N/A	N/A
Others	Gas/Light Liquid	29	0	7.778E-03	7.281E+00	0.23
	Light Crude Oil	12	0	6.931E-03	3.757E-01	0.08
	Heavy Crude Oil	0	0	3.016E-03	N/A*	0.00
Connectors	Gas/Light Liquid	376	0	6.349E-04	1.370E+00	0.24
	Light Crude Oil	48	0	5.291E-04	1.238E+00	0.03
	Heavy Crude Oil	0	0	4.233E-04	4.233E-04	0.00
Flanges	Gas/Light Liquid	65	0	1.482E-03	3.228E+00	0.10
	Light Crude Oil	24	0	1.270E-03	1.376E+01	0.03
	Heavy Crude Oil	0	0	1.217E-03	N/A*	0.00
Open-ended Lines	Gas/Light Liquid	0	0	1.270E-03	2.905E+00	0.00
	Light Crude Oil	0	0	9.524E-04	1.175E+00	0.00
	Heavy Crude Oil	0	0	7.937E-04	3.762E+00	0.00

\* Emission factor not available. All components from equipment type and service will be assessed as < 10,000 ppmv

**Total VOC Emissions = 1.2 lb/day**

## **Appendix C**

**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:

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

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

Flare S-2246-18-1:

Quarterly NEC [QNEC]			
	PE2 (lb/qtr)	PE1 (lb/qtr)	QNEC (lb/qtr)
NO <sub>x</sub>	2,979	1,489	1,490
SO <sub>x</sub>	1,825	1,825	0
PM <sub>10</sub>	1,139	570	569
CO	16,206	8,103	8,103
VOC	2,760	1,380	1,380

Tanks S-2246-7-4, '-8-3, '-9-3 and '-10-3: no increase in VOC emissions; therefore QNEC = 0

## **Appendix D**

### **BACT Guideline and Analysis**

[Per » B A C T » Bact Guideline.asp?category Level1=1&category Level2=4&category Level3=2&last Update=12 » 31 :](#)

[Back](#)

**Best Available Control Technology (BACT ) Guideline 1.4.2  
Last Update: 12/31/1998**

**Waste Gas Flare - Incinerating Produced Gas**

<b>Pollutant</b>	<b>Achieved in Practice or in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
CO	Steam assisted or Air-assisted or Coanda effect burner, when steam unavailable		
NOx	Steam assisted or Air-assisted or Coanda effect burner, when steam unavailable		
PM10	Steam assisted or Air-assisted or Coanda effect burner, when steam unavailable Pilot Light fired solely on LPG or natural gas.		
SOx	Steam assisted or Air-assisted or Coanda effect burner, when steam unavailable Pilot Light fired solely on LPG or natural gas.	Precombustion SOx scrubbing system (non-emergency flares only.)	
VOC	Steam assisted or Air-assisted or Coanda effect burner, when steam unavailable		

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

**This is a Summary Page for this Class of Source. For background information, see Permit Specific BACT Determinations on [Details Page](#).**

## **Top Down BACT Analysis for NO<sub>x</sub>, VOC and PM<sub>10</sub> Emissions:**

### **Step 1 - Identify all control technologies**

The SJVUAPCD BACT Clearinghouse guideline 1.4.2 (12/31/1998), identifies achieved in practice and technologically feasible BACT for "Waste Gas Flare – Incinerating Produced Gas" as follows:

1. Steam-assisted or air-assisted or Coanda effect burner when steam unavailable – achieved in practice

### **Step 2 - Eliminate Technologically Infeasible Options**

The above listed technology is technologically feasible.

### **Step 3 - Rank Remaining Control Technologies by Control Effectiveness**

1. Steam-assisted or air-assisted or Coanda effect burner when steam unavailable – achieved in practice

### **Step 4 - Cost Effectiveness Analysis**

Only one control technology is identified and this technology is achieved in practice; therefore, a cost effectiveness analysis not necessary.

### **Step 5 - Select BACT for NO<sub>x</sub> and VOC**

The use of Coanda effect burner when steam is unavailable is selected as BACT for NO<sub>x</sub>, PM<sub>10</sub> and VOC emissions.



## **Appendix E**

### **HRA and AAQA Summary**

# San Joaquin Valley Air Pollution Control District Risk Management Review

RECEIVED  
AUG - 8 2012  
SJVAPCD  
Southern Region

To: Dolores Gough – Permit Services  
From: Cheryl Lawler – Technical Services  
Date: August 3, 2012  
Facility Name: San Joaquin Facilities Management, Inc.  
Location: Township 28S, Range 22E  
Application #(s): S-2246-18-1  
Project #: S-1121705

---

## A. RMR SUMMARY

RMR Summary			
Categories	Flare (Unit 18-1)	Project Totals	Facility Totals
Prioritization Score	N/A*	N/A	0.37
Acute Hazard Index	N/A	N/A	N/A
Chronic Hazard Index	N/A	N/A	N/A
Maximum Individual Cancer Risk	N/A	N/A	N/A
T-BACT Required?	No		
Special Permit Conditions?	No		

\*A Risk Management Review was not required for this project, because one has already been performed and is still valid. Only an Ambient Air Quality Analysis (AAQA) was required. See Page Two of this memo for AAQA results.

## B. RMR REPORT

### I. Project Description

Technical Services received a request on July 31, 2012, to perform an Ambient Air Quality Analysis **only** for a waste gas flare. A Risk Management Review was not required, because one has already been performed and is still valid.

## II. Analysis

The following parameters were used for the Ambient Air Quality Analysis:

<b>Analysis Parameters</b>			
<b>Source Type</b>	Point	<b>Closest Receptor (m)</b>	610
<b>Effective Release Height (m)</b>	4.57	<b>Closest Receptor Type</b>	Residence & Business
<b>Stack Inside Diameter (m)</b>	0.78	<b>Project Location Type</b>	Rural
<b>Gas Exit Temperature (K)</b>	755	<b>Gas Exit Velocity (m/s)</b>	20

Technical Services performed AAQA modeling for the criteria pollutants NO<sub>x</sub>, CO, SO<sub>x</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub>. The emission rates used for criteria pollutant modeling were 0.68 lb/hr of NO<sub>x</sub>, 3.7 lb/hr of CO, 0.83 lb/hr of SO<sub>x</sub>, 0.26 lb/hr of PM<sub>10</sub>, and 0.26 lb/hr of PM<sub>2.5</sub>.

The results from the Criteria Pollutant Modeling are as follows:

### Criteria Pollutant Modeling Results\*

Values are in µg/m<sup>3</sup>

Flare	1 Hour	3 Hours	8 Hours	24 Hours	Annual
CO	Pass	X	Pass	X	X
NO <sub>x</sub>	Pass	X	X	X	Pass
SO <sub>x</sub>	Pass	Pass	X	Pass	Pass
PM <sub>10</sub>	X	X	X	Pass <sup>1</sup>	Pass <sup>1</sup>
PM <sub>2.5</sub>	X	X	X	Pass <sup>2</sup>	Pass <sup>2</sup>

\*Results were taken from the attached PSD spreadsheet.

<sup>1</sup>The criteria pollutants are below EPA's level of significance as found in 40 CFR Part 51.165 (b)(2).

<sup>2</sup>For this case as per District procedure, minor PM<sub>2.5</sub> sources are modeled only for primary PM<sub>2.5</sub> concentrations, and these concentrations are compared to the 24-hour SIL of 1.2 µg/m<sup>3</sup> and the annual SIL of 0.3 µg/m<sup>3</sup>.

## III. Conclusion

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

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.

## IV. Attachments

- A. RMR Request from the Project Engineer
- B. AAQA Results
- C. Facility Summary

## San Joaquin Valley Air Pollution Control District Risk Management Review

To: Steve Davidson – Permit Services  
 From: Cheryl Lawler – Technical Services  
 Date: July 2, 2012  
 Facility Name: San Joaquin Facilities Management, Inc.  
 Location: Section 31, T28S, R22E  
 Application #(s): S-2246-18-1  
 Project #: S-1121705

---

### A. RMR SUMMARY

RMR Summary			
Categories	Waste Gas Flare (Unit 18-1)	Project Totals	Facility Totals
Prioritization Score	0.37*	0.37	0.37
Acute Hazard Index	N/A	N/A	N/A
Chronic Hazard Index	N/A	N/A	N/A
Maximum Individual Cancer Risk	N/A	N/A	N/A
T-BACT Required?	No		
Special Permit Conditions?	No		

\* The project passed on prioritization with a score of less than 1; therefore, no further analysis was required.

#### I. Project Description

Technical Services received a request on June 21, 2012, to perform a Risk Management Review for a 20 MMBtu/hr waste gas flare.

#### II. Analysis

Toxic emissions were calculated using District approved emission factors for oilfield waste gas flares. In accordance with the District's *Risk Management Policy for Permitting New and Modified Sources* (APR 1905-1, March 2, 2001), risks from the proposed project were prioritized using the procedures in the 1990 CAPCOA Facility Prioritization Guidelines and incorporated in the District's HEART's database. The prioritization score for the project was less than 1.0 (see RMR Summary Table). Therefore, no further analysis was necessary.

The following parameters were used for the review:

<b>Analysis Parameters</b>			
<b>Facility Location Type</b>	Rural	<b>Closest Receptor (m)</b>	610
<b>Waste Gas Process Rate (mmscf/hr)</b>	0.02	<b>Closest Receptor Type</b>	Residence & Business

### III. Conclusion

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

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

# **Appendix F**

Draft ATC

San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

ISSUANCE DATE: DRAFT  
**DRAFT**

PERMIT NO: S-2246-7-4

LEGAL OWNER OR OPERATOR: SAN JOAQUIN FACILITIES MGMT  
MAILING ADDRESS: 4520 CALIFORNIA AVE, STE 300  
BAKERSFIELD, CA 93309

LOCATION: LIGHT OIL WESTERN STATIONARY SOURCE  
CA

SECTION: SE 31 TOWNSHIP: 28S RANGE: 22E

**EQUIPMENT DESCRIPTION:**

MODIFICATION OF 31,500 GALLON FIXED ROOF PETROLEUM WASH TANK WITH VAPOR RECOVERY SYSTEM  
SHARED BETWEEN PERMITS S-2246-7, -8, -9 AND -10: REVISE METHOD OF CALCULATING EMISSIONS

**CONDITIONS**

1. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. Permittee's crude oil production shall average less than 6,000 bbl/day from all operations within Kern County and permittee shall not engage in refining, transporting, or marketing of refined petroleum products. [District Rule 4623]
3. Permittee shall maintain records of number and type of components in gas or liquid service installed. Permittee shall update such records when new components are installed. [District Rule 4623]
4. Fugitive VOC emissions rate calculated from gas and liquid components in using CAPCOA California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities, Table IV-2c, Oil and Gas Production emission factors (Feb 1999) shall not exceed 1.3 lb/day. [District Rule 2201]
5. 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 leak-free condition. The VOC control device shall be one of the following: a condensation or vapor return system that connects to one of the following; a gas processing plant, a field gas pipeline, a pipeline distributing Public Utility Commission quality gas for sale, an injection well for disposal of vapors as approved by the California Department of Conservation, Division of Oil Gas, and Geothermal Resources; or an approved VOC destruction device the reduces the inlet VOC emissions by at least 99% by weight as determined by the test method specified in Section 6.4.6 of District Rule 4623. [District Rule 4623]

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**

DAVID WARNER, Director of Permit Services

S-2246-7-4 : Aug 8 2012 2:42PM - GOUGH : Joint Inspection NOT Required

6. Tank vapors collected by vapor control system shall only be vented to gas pipeline or to flare S-2246-18. [District Rule 2201]
7. The vapor recovery system is shared with permit units S-2246-8, -9, and -10. It consists of a 10 - 20 mcf/day primary vapor recovery compressor and a backup compressor that draws vapors from the tanks and routes the vapors to a gas pipeline. The tank vapor control system shall include vapor lines from tanks to gas boots, pressure sensing line, wet/dry gas regulators (Varec #180/#181), pressure/vacuum relief valve (Varec #2010 or equivalent). The system includes an automatic vacuum control valve on the suction side of the vapor recovery unit that will activate the compressor within the vapor recovery system design pressure range to control VOC emission as required by District Rule 4623. [District Rules 2201 and 4623]
8. The operator shall maintain a copy of the latest APCO-approved Operator Management Plan (OMP) at the facility and make it available to the APCO, ARB, and US EPA upon request. [District Rule 4409]
9. By January 30 of each year, the operator shall submit to the APCO for approval, in writing, an annual report indicating any changes to the existing, approved OMP. [District Rule 4409]
10. In accordance with the approved OMP, the operator shall meet all applicable operating, inspection and re-inspection, maintenance, process pressure relief device (PRD), component identification, record keeping, and notification requirements of Rule 4409 for all components containing or contacting VOC's at this facility except for those components specifically exempted in Sections 4.1 and 4.2 of Rule 4409. [District Rule 4409]
11. The operator shall maintain an inspection log that has been signed and dated by the facility operator responsible for the inspection, certifying the accuracy of the information recorded in the log. The inspection log shall contain, at a minimum, all of the following information: 1) The total number of components inspected, and the total number and percentage of leaking components found by component types; 2) The location, type, name or description of each leaking component and the description of any unit where the leaking component is found; 3) Date of the leak detection and method of the leak detection; 4) For gaseous leaks, record the leak concentration in ppmv, and for liquid leaks record whether the leak is a major liquid leak or a minor liquid leak; 5) The date of repair, replacement, or removal from operation of the leaking component(s); 6) The identification and location of essential components and critical components found leaking that cannot be repaired until the next process unit turnaround or not later than one year after leak detection, whichever comes first; 7) The method(s) used to minimize the leak from essential components and critical components found leaking that cannot be repaired until the next process unit turnaround or not later than one year after leak detection, whichever comes earlier; 8) The date of re-inspection and the leak concentration in ppmv after the component is repaired or is replaced; 9) The inspector's name, business mailing address, and business telephone number. [District Rule 4409]
12. Records of leaks detected during quarterly or annual operator inspections, and each subsequent repair and re-inspection, shall be submitted to the District, ARB, and EPA upon request. [District Rule 4409]
13. Records shall be maintained of each calibration of the portable hydrocarbon detection instrument utilized for inspecting components. The records shall include a copy of the current calibration gas certification from the vendor of the calibration gas cylinder, the date of calibration, the concentration of calibration gas, the instrument reading of calibration gas before adjustment, the instrument reading of calibration gas after adjustment, the calibration gas expiration date, and the calibration gas cylinder pressure at the time of calibration. [District Rule 4409]
14. All records required by this permit shall be maintained and retained on-site for a minimum of five (5) years and made available for District, ARB, and EPA inspection upon request. [District Rule 4409]

DRAFT



San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

ISSUANCE DATE: DRAFT  
**DRAFT**

PERMIT NO: S-2246-8-3

LEGAL OWNER OR OPERATOR: SAN JOAQUIN FACILITIES MGMT  
MAILING ADDRESS: 4520 CALIFORNIA AVE, STE 300  
BAKERSFIELD, CA 93309

LOCATION: LIGHT OIL WESTERN STATIONARY SOURCE  
CA

SECTION: SE31 TOWNSHIP: 28S RANGE: 22E

**EQUIPMENT DESCRIPTION:**

MODIFICATION OF ONE 84,000 GALLON FIXED ROOF PETROLEUM STORAGE TANK #13866 WITH VAPOR RECOVERY SYSTEM SHARED BETWEEN S-2246-7 TO '-10: REVISE METHOD OF CALCULATING EMISSIONS

**CONDITIONS**

1. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. To maintain status as a small producer, permittee's crude oil production shall average less than 6000 bbl/day from all operations within Kern County and permittee shall not engage in refining, transporting, or marketing of refined petroleum products. [District Rule 4623]
3. Permittee shall maintain records of number and type of components in gas or liquid service installed. Permittee shall update such records when new components are installed. [District Rule 4623]
4. Fugitive VOC emissions rate calculated from gas and liquid components in using CAPCOA California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities, Table IV-2c, Oil and Gas Production emission factors (Feb 1999) shall not exceed 0.1 lb/day. [District Rule 4623]
5. Tank vapors collected by vapor control system shall only be vented to gas pipeline or to flare S-2246-18. [District Rule 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

**DAVID WARNER**, Director of Permit Services

S-2246-8-3 Aug 8 2012 2:35PM - GOUGHD - Joint Inspection NOT Required

6. 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 leak-free 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 that reduces the inlet VOC emissions by at least 99% by weight as determined by the test method specified in Section 6.4. [District Rule 4623 and 2201]
7. Tank shall be equipped with temperature indicator. [District Rule 2201]
8. Tank roof, seams, welds, joints, sample wells, pressure relief valves, etc. shall be maintained in a leak-free condition. [District Rules 4623 and 2201]
9. Any tank gauging or sampling device on a tank vented to the vapor recovery system shall be equipped with a leak-free cover which shall be closed at all times except during gauging or sampling. [District Rule 4623]
10. 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]
11. Permittee shall record and maintain monthly records of average daily crude oil throughput and shall make such records readily available for District inspection upon request for a period of five years. [District Rules 4623, 1070 and 2201]

DRAFT

San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

ISSUANCE DATE: DRAFT  
**DRAFT**

PERMIT NO: S-2246-9-3

LEGAL OWNER OR OPERATOR: SAN JOAQUIN FACILITIES MGMT  
MAILING ADDRESS: 4520 CALIFORNIA AVE, STE 300  
BAKERSFIELD, CA 93309

LOCATION: LIGHT OIL WESTERN STATIONARY SOURCE  
CA

SECTION: SE31 TOWNSHIP: 28S RANGE: 22E

**EQUIPMENT DESCRIPTION:**

MODIFICATION OF ONE 21,000 GALLON FIXED ROOF PETROLEUM WASH TANK #13864 WITH VAPOR RECOVERY SYSTEM SHARED BETWEEN S-2246-7 TO '10: REVISE METHOD OF CALCULATING EMISSIONS

**CONDITIONS**

1. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. To maintain status as a small producer, permittee's crude oil production shall average less than 6000 bbl/day from all operations within Kern County and permittee shall not engage in refining, transporting, or marketing of refined petroleum products. [District Rule 4623]
3. Permittee shall maintain records of number and type of components in gas or liquid service installed. Permittee shall update such records when new components are installed. [District Rule 4623]
4. Fugitive VOC emissions rate calculated from gas and liquid components in using CAPCOA California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities, Table IV-2c, Oil and Gas Production emission factors (Feb 1999) shall not exceed 0.1 lb/day. [District Rule 4623]
5. Tank vapors collected by vapor control system shall only be vented to gas pipeline or to flare S-2246-18. [District Rule 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

**DAVID WARNER**, Director of Permit Services

S-2246-9-3 Aug 8 2012 2:35PM - GOUQHD : Joint Inspection NOT Required

6. 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 leak-free 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 that reduces the inlet VOC emissions by at least 99% by weight as determined by the test method specified in Section 6.4. [District Rule 4623 and 2201]
7. Tank shall be equipped with temperature indicator. [District Rule 2201]
8. Tank roof, seams, welds, joints, sample wells, pressure relief valves, etc. shall be maintained in a leak-free condition. [District Rules 4623 and 2201]
9. Any tank gauging or sampling device on a tank vented to the vapor recovery system shall be equipped with a leak-free cover which shall be closed at all times except during gauging or sampling. [District Rule 4623]
10. 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]
11. Permittee shall record and maintain monthly records of average daily crude oil throughput and shall make such records readily available for District inspection upon request for a period of five years. [District Rules 4623, 1070 and 2201]

DRAFT

San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

ISSUANCE DATE: DRAFT  
**DRAFT**

PERMIT NO: S-2246-10-3

LEGAL OWNER OR OPERATOR: SAN JOAQUIN FACILITIES MGMT  
MAILING ADDRESS: 4520 CALIFORNIA AVE, STE 300  
BAKERSFIELD, CA 93309

LOCATION: LIGHT OIL WESTERN STATIONARY SOURCE  
CA

SECTION: SE31 TOWNSHIP: 28S RANGE: 22E

**EQUIPMENT DESCRIPTION:**

MODIFICATION OF ONE 21,000 GALLON FIXED ROOF PETROLEUM STORAGE TANK #13865 WITH VAPOR RECOVERY SYSTEM SHARED BETWEEN S-2246-7 TO '-10: REVISE METHOD OF CALCULATING EMISSIONS

**CONDITIONS**

1. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. To maintain status as a small producer, permittee's crude oil production shall average less than 6000 bbl/day from all operations within Kern County and permittee shall not engage in refining, transporting, or marketing of refined petroleum products. [District Rule 4623]
3. Permittee shall maintain records of number and type of components in gas or liquid service installed. Permittee shall update such records when new components are installed. [District Rule 4623]
4. Fugitive VOC emissions rate calculated from gas and liquid components in using CAPCOA California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities, Table IV-2c, Oil and Gas Production emission factors (Feb 1999) shall not exceed 0.1 lb/day. [District Rule 4623]
5. Tank vapors collected by vapor control system shall only be vented to gas pipeline or to flare S-2246-18. [District Rule 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

**DAVID WARNER**, Director of Permit Services

S-2246-10-3 : Aug 8 2012 2:33PM - GOUHID : Joint Inspection NOT Required

6. 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 leak-free 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 that reduces the inlet VOC emissions by at least 99% by weight as determined by the test method specified in Section 6.4. [District Rule 4623 and 2201]
7. Tank shall be equipped with temperature indicator. [District Rule 2201]
8. Tank roof, seams, welds, joints, sample wells, pressure relief valves, etc. shall be maintained in a leak-free condition. [District Rules 4623 and 2201]
9. Any tank gauging or sampling device on a tank vented to the vapor recovery system shall be equipped with a leak-free cover which shall be closed at all times except during gauging or sampling. [District Rule 4623]
10. 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]
11. Permittee shall record and maintain monthly records of average daily crude oil throughput and shall make such records readily available for District inspection upon request for a period of five years. [District Rules 4623, 1070 and 2201]

DRAFT

San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

ISSUANCE DATE: DRAFT  
**DRAFT**

PERMIT NO: S-2246-18-1

LEGAL OWNER OR OPERATOR: SAN JOAQUIN FACILITIES MGMT  
MAILING ADDRESS: 4520 CALIFORNIA AVE, STE 300  
BAKERSFIELD, CA 93309

LOCATION: LIGHT OIL WESTERN STATIONARY SOURCE  
CA

SECTION: SE31 TOWNSHIP: 28S RANGE: 22E

**EQUIPMENT DESCRIPTION:**

MODIFICATION OF 10 MMBTU/HR COANDA EFFECT FLARE SERVING TANK VAPOR CONTROL SYSTEM LISTED ON S-2246-7: INCREASE GAS FLOW RATE TO 20 MMBTU/HR

**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. Total quantity of produced gas combusted in flare shall not exceed 400,000 scf/day. [District Rule 2201]
4. 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, 6.2.3.6. [District Rule 4311]
5. 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]
6. A flame shall be present at all times when combustible gases are vented through the flare. [District Rule 4311]
7. An updated Flare Minimization Plan shall be submitted for this flare prior to its installation. [District Rule 4311]

CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director APCO

**DRAFT**

DAVID WARNER, Director of Permit Services

S-2246-18-1 : Aug 8 2012 2:42PM - GOUHID : Joint Inspection NOT Required

8. Flare shall be equipped with operational produced gas volume flow meter. [District Rule 4311]
9. Emission rates from this unit shall not exceed any of the following limits: NO<sub>x</sub> (as NO<sub>2</sub>): 0.068 lb/MMBtu; VOC (as methane): 0.063 lb/MMBtu; CO: 0.370 lb/MMBtu; or PM<sub>10</sub>: 0.026 lb/MMBtu. [District Rule 2201]
10. SO<sub>x</sub> emissions (as SO<sub>2</sub>) shall not exceed 20.0 lb/day. Compliance with the SO<sub>x</sub> emission limit can be demonstrated by limiting the sulfur content of the gas flared to no more than 592 ppmv, or by recording the sulfur content and the quantity of gas flared. [District Rule 2201]
11. Permittee shall measure sulfur content of gas introduced to the flare at startup and at least once every year. Such data shall be submitted to the District within 60 days of sample collection. [District Rule 2201]
12. The flared gas sulfur concentration shall be measured using one of the following test methods: ASTM D1072, ASTM D3246, ASTM D6228 (GC-FPD), double GC for H<sub>2</sub>S and mercaptans, or equivalent test method with prior District approval. [District Rule 2201]
13. Higher heating value of flared gas shall be determined using ASTM D 1826 or D 1945 in conjunction with ASTM D 3588. [District Rule 2201]
14. The permittee shall keep accurate daily and annual records of the amount of gas combusted in the flare, hours of operation and the sulfur content and heat content of the gas combusted. The permittee shall keep these records for a period of at least five years and shall make such records available for District inspection upon request. [District Rules 2201 and 4311]

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**Appendix G**  
**Emissions Profile**

Permit #: S-2246-7-4	Last Updated
Facility: SAN JOAQUIN FACILITIES MGMT	08/08/2012 GOUGHD

Equipment Pre-Baselined: NO

	<u>NOX</u>	<u>SOX</u>	<u>PM10</u>	<u>CO</u>	<u>VOC</u>
Potential to Emit (lb/Yr):	0.0	0.0	0.0	0.0	475.0
Daily Emis. Limit (lb/Day)	0.0	0.0	0.0	0.0	1.3
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	0.0	0.0	0.0	0.0	0.0
Q2:	0.0	0.0	0.0	0.0	0.0
Q3:	0.0	0.0	0.0	0.0	0.0
Q4:	0.0	0.0	0.0	0.0	0.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					
Quarterly Offset Amounts (lb/Qtr)					
Q1:					
Q2:					
Q3:					
Q4:					

Permit #: S-2246-8-3	Last Updated
Facility: SAN JOAQUIN FACILITIES MGMT	08/08/2012 GOUGHD

Equipment Pre-Baselined: NO

	<u>NOX</u>	<u>SOX</u>	<u>PM10</u>	<u>CO</u>	<u>VOC</u>
Potential to Emit (lb/Yr):	0.0	0.0	0.0	0.0	37.0
Daily Emis. Limit (lb/Day)	0.0	0.0	0.0	0.0	0.1
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	0.0	0.0	0.0	0.0	0.0
Q2:	0.0	0.0	0.0	0.0	0.0
Q3:	0.0	0.0	0.0	0.0	0.0
Q4:	0.0	0.0	0.0	0.0	0.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					
Quarterly Offset Amounts (lb/Qtr)					
Q1:					
Q2:					
Q3:					
Q4:					

Permit #: S-2246-9-3	Last Updated
Facility: SAN JOAQUIN FACILITIES MGMT	08/08/2012 GOUGHD

Equipment Pre-Baselined: NO

	<u>NOX</u>	<u>SOX</u>	<u>PM10</u>	<u>CO</u>	<u>VOC</u>
Potential to Emit (lb/Yr):	0.0	0.0	0.0	0.0	37.0
Daily Emis. Limit (lb/Day)	0.0	0.0	0.0	0.0	0.1
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	0.0	0.0	0.0	0.0	0.0
Q2:	0.0	0.0	0.0	0.0	0.0
Q3:	0.0	0.0	0.0	0.0	0.0
Q4:	0.0	0.0	0.0	0.0	0.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					
Quarterly Offset Amounts (lb/Qtr)					
Q1:					
Q2:					
Q3:					
Q4:					

Permit #: S-2246-10-3	Last Updated
Facility: SAN JOAQUIN FACILITIES MGMT	08/08/2012 GOUGHD

Equipment Pre-Baselined: NO

	<u>NOX</u>	<u>SOX</u>	<u>PM10</u>	<u>CO</u>	<u>VOC</u>
Potential to Emit (lb/Yr):	0.0	0.0	0.0	0.0	37.0
Daily Emis. Limit (lb/Day)	0.0	0.0	0.0	0.0	0.1
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	0.0	0.0	0.0	0.0	0.0
Q2:	0.0	0.0	0.0	0.0	0.0
Q3:	0.0	0.0	0.0	0.0	0.0
Q4:	0.0	0.0	0.0	0.0	0.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					
Quarterly Offset Amounts (lb/Qtr)					
Q1:					
Q2:					
Q3:					
Q4:					

Permit #: S-2246-18-1	Last Updated
Facility: SAN JOAQUIN FACILITIES MGMT	08/08/2012 GOUGHD

Equipment Pre-Baselined: NO

	<u>NOX</u>	<u>SOX</u>	<u>PM10</u>	<u>CO</u>	<u>VOC</u>
Potential to Emit (lb/Yr):	11194.0	7300.0	4555.0	64824.0	11038.0
Daily Emis. Limit (lb/Day)	32.6	20.0	12.5	177.6	30.2
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	1490.0	0.0	569.0	8103.0	1380.0
Q2:	1490.0	0.0	569.0	8103.0	1380.0
Q3:	1490.0	0.0	569.0	8103.0	1380.0
Q4:	1490.0	0.0	569.0	8103.0	1380.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					
Quarterly Offset Amounts (lb/Qtr)					
Q1:					
Q2:					
Q3:					
Q4:					

## **Appendix H**

**BPS for VOC Control/Gas Disposal**

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

**Best Performance Standard (BPS) x.x.xx**

Date: 08/02/2011

Class	VOC Control/Gas Disposal	
Category	Oil and Gas Production, Processing, and Refining	
<b>Best Performance Standard (in order of recommendation)</b>	<p>1) -Incineration in existing engine, boiler, etc that creates useful work – provided that equipment is available and practically capable of incinerating vapors (see equipment specific BPS for standards and requirements for new fired equipment) and currently burning fossil fuel; or,</p> <p>-Transfer to Sales Gas Line – provided that access to sales gas line infrastructure is available; or,</p> <p>-Reinjection to Formation – provided that access to a disposal well is available.</p>	
	<p>The following options supersede the BPS requirements above if: a) equipment listed above is not available; or, b) gas cannot safely be transferred to equipment listed above; or, c) used to control emergency gas releases.</p> <p>2) -Incineration in new Thermal Oxidizer – see equipment specific Thermal Oxidizer BPS for standards and requirements for new equipment; or,</p> <p>-Incineration in New Flare with &gt;98% TOC destruction efficiency, steam assist, air assist when steam is not available, or Coanda effect and equipped with non-continuous automatic electronic or ballistic ignition; or,</p> <p>-Incineration in Existing Thermal Oxidizer or Flare</p>	
<b>Percentage Achieved GHG Emission Reduction Relative to Baseline Emissions</b>	<b>Gas-Fired Equipment</b>	<b>100%</b>
	<b>Transfer to Sales Gas Line</b>	<b>100%</b>
	<b>Reinjection to Formation</b>	<b>100%</b>
	<b>New Thermal Oxidizer</b>	<b>100%</b>
	<b>New Flare</b>	<b>1.5%</b>
	<b>Existing Thermal Oxidizer or Flare</b>	<b>0%</b>
<b>District Project Number</b>	S-1103964	
<b>Evaluating Engineer</b>	Kristopher Rickards	
<b>Lead Engineer</b>	Leonard Scandura, P.E.	
<b>Public Notice: Start Date</b>	May 31, 2011	
<b>Public Notice: End Date</b>	June 30, 2011	
<b>Determination Effective Date</b>	August 2, 2011	