



JUN 12 2013

Mr Joey Barulich
Vintage Production California, LLC
9300 Ming Avenue
Bakersfield, CA 93311

Re: Proposed ATC / Certificate of Conformity (Significant Mod)
District Facility # S-8282
Project # S-1130506

Dear Mr. Barulich:

Enclosed for your review is the District's analysis of an application for Authorities to Construct for the facility identified above. You requested that Certificates of Conformity with the procedural requirements of 40 CFR Part 70 be issued with this project. Vintage proposes to modify the tank vapor and well test control system listed on tank permit S-8282-113 by allowing the option of incinerating the vapors in a 80 MMbtu/hour vapor destruction device.

After addressing all comments made during the 30-day public notice and the 45-day EPA comment periods, the District intends to issue the Authorities to Construct with Certificates of Conformity. Please submit your comments within the 30-day public comment period, as specified in the enclosed public notice. Prior to operating with modifications authorized by the Authorities to Construct, the facility must submit an application to modify the Title V permit as an administrative amendment, in accordance with District Rule 2520, Section 11.5

If you have any questions, please contact Mr. Leonard Scandura, Permit Services Manager, at (661) 392-5500

Thank you for your cooperation in this matter.

Sincerely,



David Warner
Director of Permit Services

DW:SD/st

Enclosures

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

Seyed Sadredin
Executive Director/Air Pollution Control Officer

Northern Region
4800 Enterprise Way
Modesto, CA 95356 8718
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Central Region (Main Office)
1990 E Gettysburg Avenue
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Southern Region
34946 Flyover Court
Bakersfield, CA 93308 9725
Tel 661 392 5500 FAX 661 392 5585

Newspaper notice for publication in Bakersfield Californian and for posting on valleyair.org

**NOTICE OF PRELIMINARY DECISION
FOR THE ISSUANCE OF AUTHORITY TO CONSTRUCT AND
THE PROPOSED SIGNIFICANT MODIFICATION OF FEDERALLY
MANDATED OPERATING PERMIT**

NOTICE IS HEREBY GIVEN that the San Joaquin Valley Air Pollution Control District solicits public comment on the proposed significant modification of Vintage Production California, LLC at various locations in Vintage's Light Oil Western source , California Vintage proposes to modify the tank vapor and well test control system listed on tank permit S-8282-113 by allowing the option of incinerating the vapors in a 80 MMbtu/hour vapor destruction device

The District's analysis of the legal and factual basis for this proposed action, project #S-1130506, is available for public inspection at http://www.valleyair.org/notices/public_notices_idx.htm and at any District office There are no emission increases associated with this proposed action This will be the public's only opportunity to comment on the specific conditions of the modification. If requested, the District will hold a public hearing regarding issuance of this modification For additional information, please contact the District at (661) 392-5500 Written comments on the proposed initial permit must be submitted by July 17, 2013 to **DAVID WARNER, DIRECTOR OF PERMIT SERVICES, SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT, 34946 FLYOVER COURT, BAKERSFIELD, CA 93308.**

Authority to Construct Application Review

Fixed Roof Oil Field Production Tank < 5000 BBLs with VOC Control
Major Source, Light Oil, Connected to Vapor Control,

Facility Name: Vintage Production California, LLC
Mailing Address: 9300 Ming Avenue
Bakersfield, CA 93311
Contact Person: Joey Barulich
Telephone: 661-869-8075
Application #(s): S-8282-113-1 & '-123-0
Project #: S-1130506
Deemed Complete: March 28, 2013

Date: April 29, 2013
Engineer: Steve Davidson
Lead Engineer: Allan Phillips

*ABP on 5-22-13
and RWK 5-30-13
(~~as~~ with REVISIONS)*

I. Proposal

Vintage Production California, LLC (Vintage) is applying for Authorities to Construct (ATC) permits for the modification of the tank vapor and well test control system listed on tank permit S-8282-113 by allowing the option of incinerating the vapors in a 80 MMBtu/hour vapor destruction device (VDD). Currently, the vapor control system connected to Vintage's field gas gathering system serves nine fixed roof 500 bbl crude oil tanks that are portable units capable of moving to newly drilled wells for testing.

Additionally, Vintage requests the District correct a clerical error on permit S-8282-113. When the original tank and vapor control system ATC was issued in project S-1123430 the District calculated emissions for the components associated with the tanks base on a 10,000 ppmv leak limitation and the components associated with the vapor recovery system based on a 2,000 ppmv leak limitation. However, when the ATC was issued the conditions only addressed the 2000 ppmv leak limitations as follows:

- A leak-free condition is defined as a condition without a gas leak. A gas leak is defined as a reading in excess of 2,000 ppmv, above background, as measured by a portable hydrocarbon detection instrument in accordance with the procedures specified in EPA Test Method 21.
- Upon detection of a gas leak, defined as a VOC concentration of greater than 2,000 ppmv measured in accordance with EPA Method 21, operator shall take one of the following actions: 1) eliminate the leak within 8 hours after detection, or 2) if the leak cannot be eliminated, then minimize the leak to the lowest possible level within 8 hours after detection by using best

maintenance practices, and eliminate the leak within 48 hours after minimization. In no event shall the total time to minimize and eliminate a leak exceed 56 hours after detection.

Therefore, the two conditions will be replaced with the following conditions to correctly reflect the emissions approved in Engineering evaluation S-112340:

- For the components associated with the tank and components within 5 foot of the tank, a leak-free 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.
- For the components associated with the vapor control equipment and other equipment at the facility, a leak-free condition is defined as a condition without a gas leak. A gas leak is defined as a reading in excess of 2,000 ppmv, above background, as measured by a portable hydrocarbon detection instrument in accordance with the procedures specified in EPA Test Method 21.
- Upon detection of a gas leak, the operator shall take one of the following actions: 1) eliminate the leak within 8 hours after detection; or 2) if the leak cannot be eliminated, then minimize the leak to the lowest possible level within 8 hours after detection by using best maintenance practices, and eliminate the leak within 48 hours after minimization. In no event shall the total time to minimize and eliminate a leak exceed 56 hours after detection.

This facility complies with the California Air resources Board (ARB) Cap and Trade regulation. Consistent with CCR §15064(h)(3), the District finds that compliance with ARB's Cap and Trade regulation would avoid or substantially lessen the impact of project-specific GHG emissions on global climate change. Therefore the project has a less than significant individual and cumulative impact on global climate change and Best Performance Standards or the mitigation of greenhouse gases are not required.

Vintage operates under a Title V Permit. This project is a Federal Major Modification and is classified as a Title V Significant Modification pursuant to Rule 2520, Section 3.20 and can be processed with a Certificate of Conformity (COC). The facility has specifically requested that this project be processed in that manner, therefore, the 45-day EPA comment period will be satisfied prior to the issuance of the Authority to Construct. Vintage must apply to administratively amend their Title V permit.

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 2410 Prevention of Significant Deterioration (Adopted 6/16/11, effective 11/26/12)
- Rule 4001 New Source Performance Standards,

Subpart Kb (Amended 4/14/99) - Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) Is not applicable. This subpart does not apply to vessels with a design capacity $\leq 1,589.874 \text{ m}^3$ ($\leq 420,000$ gallons) used for petroleum or condensate stored, processed, or treated prior to custody transfer. The capacity of these tanks is $\leq 420,000$ gallons, and they store crude oil prior to custody transfer; therefore, this subpart does not apply to the tanks in this project

Subpart OOOO (Adopted 8/16/2012) - Standards of Performance for Crude Oil and Natural Gas Production, Transmission, and Distribution.

- Rule 4101 Visible Emissions (02/17/05)
- Rule 4102 Nuisance (12/17/92)
- Rule 4311 Flares (6/18/09) – Not applicable see Compliance Section
- Rule 4409 Components at Light Crude Oil Production Facilities, Natural Gas Production Facilities, and Natural Gas Processing Facilities (04/20/05)
- Rule 4623 Storage of Organic Liquids (05/19/05)
- 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 may operate at various locations in Vintage's Light Oil Western stationary source. The facility is not located within 1,000 feet of the outer boundary of any K-12 school. Therefore, pursuant to CH&SC 42301.6, California Health and Safety Code (School Notice), public notification is not required.

IV. Process Description

The applicant is drilling new oil production wells. Once the wells are completed, the applicant will use these tanks and vapor recovery system to test the oil

production of the wells and make decisions about future oil well use and operation. The fluid from the well head goes to a well test separator, then to a 3-phase separator where the gas, oil and produced water are split and piped to a gas gathering system, oil storage tank, and produced water storage tank respectively. The liquids are then sent via vacuum truck to an oil treating facility. The gas is routed to a field gas collection system or used in permit exempt equipment.

Currently, VOC emissions from the tanks are controlled to 95% by a shared vapor control system in accordance with S-8282-113 permit conditions. Vintage is proposing the option of venting the system to the proposed 80 MMBtu/hour VOC Destruction Device (VDD) instead of Vintage Production's gas gathering system. The vapor control system collects vapors from the tanks, and routes the uncondensed vapors to appropriate disposal equipment.

The project results in an increase in combustion emissions and fugitive VOC emissions from the fugitive emission components associated with the VDD. The process flow diagram of the new tank is found in Attachment B.

V. Equipment Listing

- S-8282-113-1: MODIFICATION OF 500 BBL PORTABLE FIXED ROOF TANK WITH WELL TEST SEPARATOR, 3-PHASE SEPARATOR, AND SERVED BY VAPOR CONTROL SYSTEM CONSISTING OF VAPOR COMPRESSOR, AND PIPING, VENTED TO APPROVED GAS GATHERING SYSTEM, SERVING TANKS S-8282-113, '-114, '-115, '-116, '-117, '-118, '-119, '-120, AND '-121: ADD OPTIONAL USE OF UP TO TWO 40 MMBTU/HR BEKAERT CEB 1200 VAPOR DESTRUCTION DEVICES IN PARALLEL LISTED ON PERMIT S-8282-123
- S-8282-123-0: TANK VAPOR CONTROL SYSTEM INCLUDING UP TO TWO 40 MMBTU/HR BEKAERT CEB 1200 VAPOR DESTRUCTION DEVICES SERVING TANKS S-8282-114, '-115, '-116, '-117, '-118, '-119, '-120, '-121 AND SUBJECT TEST WELL(S)

VI. Emission Control Technology Evaluation

The tank vapor control system collects vapors from the tanks, removes entrained liquid in knockout vessels and scrubber vessels, condenses gases in heat exchangers and routes the uncondensed vapors to field gas gathering system or the VDD. The efficiency of the vapor control system is at least 95%.

VII. Emissions Calculations

Per FYI-111, Allowing a vapor control system to vent to a different permitted disposal device is not a change in the method of operation of the vapor control system provided that the vapor control system can continue to meet it's control efficiency requirement. The control efficiency will remain at 95% control; therefore, tank S-8282-113 is not being modified and does not require calculations.

Fugitive Emissions:

The potential to emit from the fugitive emission will be calculated using U.S. EPA Protocol for Equipment Leak Emission Estimates, Table 5-7 (November 1995). Applicant is proposing use of the average leak rate emissions factors using a leak definition of 2,000 ppmv.

A. Assumptions

Fugitive Emissions:

- Facility will operate 24 hours per day, 7 days per week, and 52 weeks per year.
- The fugitive emissions for all tanks are calculated using U.S. EPA Protocol for Equipment Leak Emission Estimates (November 1995) average leak rate emissions factors.
- Only fugitive VOCs emitted from components in light crude oil and gas service are calculated.
- Fugitive emissions from heavy crude oil liquid service components are negligible.
- The percentage of VOCs of the total hydrocarbons is 100%
- The components associated with the vapor recovery system will be subject to 2,000 ppmv leak limitations.

Combustion Emissions:

- The maximum quantity of gas combusted will be limited to 80 MMBtu/hr (1280 Mscf/day) and 54,750 MMBtu/yr (36,500 Mscf/yr) (Applicant)
- Heating value of flared gas is 1,500 Btu/scf (applicant submitted)
- The combusted natural gas will have a sulfur content less than 0.75 gr/100 scf, (Applicant)
- There is no pilot light associated with the VDD

B. Emission Factors

Fugitive Emissions:

The potential to emit from the fugitive emission will be calculated using U.S. EPA Protocol for Equipment Leak Emission Estimates, Table 5-7 (November 1995).

Applicant is proposing use of the average leak rate emissions factors using a leak definition of 2,000 ppmv

Combustion Emissions:

- NO_x = 0.023 lb/MMbtu – manufacturer
- SO_x = 0.0014 lb/MMbtu – (based on 0.75 gr-scf & 1500 Btu/scf)
- PM₁₀ = 0.008 lb/MMBtu - FYI – 83
- CO = 0.008 lb/MMbtu – manufacturer
- VOC = 0.004 lb/MMbtu - manufacturer

C. Calculations

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

Since this is a new emissions unit, the PE₁ = 0

2. Post Project Potential to Emit, (PE₂)

Fugitive Emissions:

Post-project potential to emit is calculated based on the fugitive component counts. The following emission are calculated based on the number of components and the type of components submitted by the applicant.

Valves (22) – gas/light liquid (2000 ppm leak threshold)

$$\begin{aligned} PE_2 &= \# \text{ Components} \times \text{Average Leak Rate} \\ PE_2 &= 22 \times 0.000014 \text{ kg/hr} \times (52.9109429 \text{ lb/day} / 1 \text{ kg/hr}) \\ PE_2 &= 0.016 \text{ lb/day} \end{aligned}$$

Connectors (240) – gas/light liquid (2000 ppm leak threshold)

$$\begin{aligned} PE_2 &= \# \text{ Components} \times \text{Average Leak Rate} \\ PE_2 &= 240 \times 0.0000086 \text{ kg/hr} \times (52.9109429 \text{ lb/day} / 1 \text{ kg/hr}) \\ PE_2 &= 0.109 \text{ lb/day} \end{aligned}$$

Valves (24) – gas/light liquid (2000 ppm leak threshold)

$$\begin{aligned} PE_2 &= \# \text{ Components} \times \text{Average Leak Rate} \\ PE_2 &= 240 \times 0.0000026 \text{ kg/hr} \times (52.9109429 \text{ lb/day} / 1 \text{ kg/hr}) \\ PE_2 &= 0.03 \text{ lb/day} \end{aligned}$$

Total Fugitive emissions:

$$PE2_{VOC} = 0.016 \text{ lb/day} + 0.109 \text{ lb/day} + 0.003 \text{ lb/day}$$

$$PE2_{VOC} = 0.128 \text{ lb/day} = 0.1 \text{ lb/day}$$

$$PE2_{VOC} = 37 \text{ lb/yr}$$

Combustion Emissions:

Daily Post Project Emissions				
Pollutant	Emissions Factor (lb/MMbtu)	Rating (MMBtu/hr)	Daily Hours of Operation (hrs/day)	PE2 Total (lb/day)
NO _x	0.023	80	24	44.2
SO _x	0.0014	80	24	2.7
PM ₁₀	0.008	80	24	15.4
CO	0.008	80	24	15.4
VOC	0.004	80	24	7.7

Annual Post Project Emissions				
Pollutant	Emissions Factor (lb/MMbtu)	Rating (MMBtu/hr)	Annual Hours of Operation (hrs/yr)	PE2 Total (lb/yr)
NO _x	0.023	62.5	8760	12,593
SO _x	0.0014	62.5	8760	767
PM ₁₀	0.008	62.5	8760	4380
CO	0.008	62.5	8760	4380
VOC	0.004	62.5	8760	2190

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

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

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

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

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

Facility emissions are already above the Offset and Major Source Thresholds for all criteria pollutants; therefore, SSPE2 calculations are not necessary.

5. Major Source Determination

Rule 2201 Major Source Determination:

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

- any ERCs associated with the stationary source
- Emissions from non-road IC engines (i.e. IC engines at a particular site at the facility for less than 12 months)
- Fugitive emissions, except for the specific source categories specified in 40 CFR 51.165

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

Rule 2410 Major Source Determination:

The facility states, and the District, agrees that the facility is an existing major source for PSD.

6. Baseline Emissions (BE)

a. Annual BE

The annual BE is performed pollutant by pollutant to determine the amount of offsets required, where necessary, when the SSPE1 is greater than the offset threshold. For this project the annual BE will be performed to calculate quarterly Baseline Emissions (QBE)

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 3.23

Since all the equipment is new the BE is equal to zero for all equipment.

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 a major source for all criteria pollutants, the project's PE2 is compared to the SB 288 Major Modification Thresholds in the following table in order to determine if the SB 288 Major Modification calculation is required.

SB 288 Major Modification Thresholds			
Pollutant	Project PE2 (lb/year)	Threshold (lb/year)	SB 288 Major Modification Calculation Required?
NO _x	12,593	50,000	No
SO _x	767	80,000	No
PM ₁₀	4380	30,000	No
VOC	2227	50,000	No

Since none of the SB 288 Major Modification Thresholds are surpassed with this project, this project does not constitute an SB 288 Major Modification

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 source is not included in the 28 specific source categories specified in 40 CFR 51.165, the increases in fugitive emissions are not included in the Federal Major Modification determination.

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

Step 1

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

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

Federal Major Modification Thresholds for Emission Increases			
Pollutant	Total Emissions Increases (lb/yr)	Thresholds (lb/yr)	Federal Major Modification?
NO _x *	12,593	0	Yes
VOC*	2227	0	Yes
PM ₁₀	4380	30,000	No
PM _{2.5}	4380	20,000	No
SO _x	767	80,000	No

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

Since there is an increase in NO_x and VOC emissions, this project constitutes a Federal Major Modification, and no further analysis is required.

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

Rule 2410 applies to all regulated NSR pollutants, except for those which the District has been classified as non-attainment, and that of those pollutants, the ones emitted from the subject emission units are listed below. The pollutants addressed in the PSD applicability determination are listed as follows:

- NO2 (as a primary pollutant)
- SO2 (as a primary pollutant)
- CO
- PM
- PM10
- Greenhouse gases (GHG): CO2, N2O, CH4, HFCs, PFCs, and SF6

The first step of this PSD evaluation consists of determining whether the facility is an existing PSD Major Source or not (See Section VII.C.5 of this document)

The facility concedes that it is an existing PSD Major Source.

In the case the facility is an existing PSD Major Source, the second step of the PSD evaluation is to determine if the project results in a PSD significant increase.

I. Project Location Relative to Class 1 Area

As demonstrated in the "PSD Major Source Determination" Section above, the facility was determined to be a existing major source for PSD. Because the project is not located within 10 km of a Class 1 area – modeling of the emission increase is not required to determine if the project is subject to the requirements of Rule 2410.

II. Significance of Project Emission Increase Determination

a. Potential to Emit of attainment/unclassified pollutant for New or Modified Emission Units vs PSD Significant Emission Increase Thresholds

As a screening tool, the potential to emit from all new and modified units is compared to the PSD significant emission increase thresholds, and if total potential to emit from all new and modified units is below this threshold, no further analysis will be needed

PSD Significant Emission Increase Determination: Potential to Emit (tons/year)						
	NO2	SO2	CO	PM	PM10	CO2e
Total PE from New and Modified Units	6.3	0.4	2.2	2.2	2.2	32,029
PSD Significant Emission Increase Thresholds	40	40	100	25	15	75,000
PSD Significant Emission Increase?	No	No	No	No	No	No

As demonstrated above, because the project has a total potential to emit from all new and modified emission units below the PSD significant emission increase thresholds, this project is not subject to the

requirements of Rule 2410 due to a significant emission increase and no further discussion is required.

10. 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 - BE, where:

- QNEC = Quarterly Net Emissions Change for each emissions unit, lb/qtr.
- PE2 = Post Project Potential to Emit for each emissions unit, lb/qtr.
- BE = Baseline Emissions (per Rule 2201) 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 BE is calculated in the following tables:

QNEC S-8282-113-1 (lb/qtr)			
Pollutant	PE2	BE	CNEC
VOC	40	40	0

QNEC S-8282-123-0 (lb/qtr)			
Pollutant	PE2	BE	QNEC
NO _x	3148	0	3148
SO _x	192	0	192
PM ₁₀	1095	0	1095
CO	1095	0	1095
VOC	557	0	557

VIII. Compliance

Rule 2201 - New and Modified Stationary Source Review Rule

Per FYI-111, Allowing a vapor control system to vent to a different permitted disposal device is not a change in the method of operation of the vapor control system provided that the vapor control system can continue to meet it's control efficiency requirement. The control efficiency will remain at 95% control; therefore, tank S-8282-113 is not being modified and is not subject to Rule 2201.

A. Best Available Control Technology (BACT)

1. BACT Applicability

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

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

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

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

As seen in Section VII.C.2 above, the applicant is proposing to install a VDD with a PE greater than 2 lb/day for NO_x, SO_x, PM₁₀, CO, and VOC. BACT is triggered for NO_x, SO_x, PM₁₀, CO, and VOC since the PEs are greater than 2 lbs/day.

Additionally, the fugitive VOC emissions associated with the unit are not greater than 2 lbs/day. Therefore, BACT is not triggered for fugitive emissions.

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

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

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

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

d. SB 288/Federal Major Modification

As discussed in Section VII.C.7 above, this project does not constitute an SB 288 Major Modification. Therefore, BACT for SB288 major Modification purposes is not triggered for any pollutant.

As discussed in Section VII.C.8 above, this project does constitute a Federal Major Modification for NO_x and VOC emissions. Therefore, BACT is triggered for NO_x and VOC for the VDD.

2. BACT Guideline

BACT Guideline 1.4.1, applies to the VDD. [waste gas flare – 15.3 MMBtu/hr, serving a tank vapor control system] (See **Attachment B**)

3. Top-Down BACT Analysis

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

- NO_x: use of VDD
- SO_x: use of VDD
- PM₁₀: use of VDD
- CO: use of VDD
- VOC: use of VDD

B. Offsets

1. Offset Applicability

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

The SSPE2 is compared to the offset thresholds in the following table.

Offset Determination (lb/year)					
	NO _x	SO _x	PM ₁₀	CO	VOC
SSPE2	<20,000	<54,750	<29,200	<200,000	<20,000
Offset Thresholds	20,000	54,750	29,200	200,000	20,000
Offsets triggered?	Yes	Yes	Yes	Yes	Yes

2. Quantity of Offsets Required

As seen above, the SSPE2 is greater than the offset thresholds for NO_x, SO_x, PM₁₀, CO, and VOC. Therefore offset calculations will be required for this project.

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

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

Where,

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

BE = Baseline Emissions, (lb/year)

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

DOR = Distance Offset Ratio, determined pursuant to Section 4.8

BE = PE1 for:

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

otherwise,

BE = HAE

As calculated in Section VII.C.6 above, the BE from this unit are equal to zero since the unit is new. Also, there is only one emissions unit associated with this project and there are no increases in cargo carrier emissions. Therefore offsets can be determined as follows and shown in the table below:

Offsets Required (lb/year) = $([PE2 - BE] + ICCE) \times DOR$

ICCE = 0 lb/year

Pollutant	Offsets required (lb/yr)		
	PE	BE	Offsets Required
NO _x	12,593	0	12,593
SO _x	767	0	767
PM ₁₀	4380	0	4380
CO	4380	0	4380
VOC	2190	0	2190

Assuming an offset ratio of 1.5:1, the amount of ERCs that need to be withdrawn is:

NOx

$$\begin{aligned}\text{Offsets Required (lb/year)} &= 12,593 \times 1.5 \\ &= 18,890 \text{ lb NO}_x/\text{year}\end{aligned}$$

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

$$\begin{array}{cccc}\frac{1^{\text{st}} \text{ Quarter}}{4723} & \frac{2^{\text{nd}} \text{ Quarter}}{4723} & \frac{3^{\text{rd}} \text{ Quarter}}{4723} & \frac{4^{\text{th}} \text{ Quarter}}{4723}\end{array}$$

SOx

$$\begin{aligned}\text{Offsets Required (lb/year)} &= 767 \times 1.5 \\ &= 1151 \text{ lb SO}_x/\text{year}\end{aligned}$$

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

$$\begin{array}{cccc}\frac{1^{\text{st}} \text{ Quarter}}{288} & \frac{2^{\text{nd}} \text{ Quarter}}{288} & \frac{3^{\text{rd}} \text{ Quarter}}{288} & \frac{4^{\text{th}} \text{ Quarter}}{288}\end{array}$$

PM₁₀

$$\begin{aligned}\text{Offsets Required (lb/year)} &= 4380 \times 1.5 \\ &= 6570 \text{ lb PM}_{10}/\text{year}\end{aligned}$$

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

$$\begin{array}{cccc}\frac{1^{\text{st}} \text{ Quarter}}{1642} & \frac{2^{\text{nd}} \text{ Quarter}}{1642} & \frac{3^{\text{rd}} \text{ Quarter}}{1642} & \frac{4^{\text{th}} \text{ Quarter}}{1642}\end{array}$$

The applicant has stated that the facility plans to use ERC N-1082-5 to offset the increases in PM₁₀ emissions associated with this project. Note that the interpollutant offset ratio for SOx and PM10 is 1:0.1 by District policy.

CO

$$\text{PE2} = 4380 \text{ lb/yr}$$

Notwithstanding the above, Section 4.6.1 of Rule 2201 states that emissions offsets are not required for increases in carbon monoxide in attainment areas provided the applicant demonstrates to the satisfaction of the APCO that the Ambient Air Quality Standards are not violated in the areas to be affected, and

such emissions will be consistent with Reasonable Further Progress, and will not cause or contribute to a violation of Ambient Air Quality Standards. The District performed an Ambient Air Quality Analysis (discussed later) and determined that this project will not result in or contribute to a violation of an Ambient Air Quality Standard for CO (see **Attachment VII**). Therefore, CO offsets are not required for this project.

VOC

$$\begin{aligned} \text{Offsets Required (lb/year)} &= 2190 \times 1.5 \\ &= 3285 \text{ lb CO/year} \end{aligned}$$

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

<u>1st Quarter</u>	<u>2nd Quarter</u>	<u>3rd Quarter</u>	<u>4th Quarter</u>
821	821	821	821

Proposed Rule 2201 (offset) Conditions:

- {GC# 4447 - edited} Prior to operating equipment under this Authority to Construct, permittee shall surrender NO_x emission reduction credits for the following quantity of emissions: 1st quarter - 4723 lb, 2nd quarter - 4723 lb, 3rd quarter - 4723 lb, and fourth quarter - 4723 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 4/21/11) for the ERC specified below. [District Rule 2201]
- {GC# 4447 - edited} Prior to operating equipment under this Authority to Construct, permittee shall surrender SO_x emission reduction credits for the following quantity of emissions. 1st quarter - 1930 lb, 2nd quarter - 1930 lb, 3rd quarter - 1930 lb, and fourth quarter - 1930 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 4/21/11) for the ERC specified below. [District Rule 2201]
- {GC# 4447 - edited} Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 821 lb, 2nd quarter - 821 lb, 3rd quarter - 821 lb, and fourth quarter - 821 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 4/21/11) for the ERC specified below. [District Rule 2201]
- {GC# 1983} ERC Certificate Numbers S-2669-4, N-783-2, N-1047-1, and N-1088-5 (or a certificate split from this certificate) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original

public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201]

C. Public Notification

1. Applicability

Public noticing is required for.

- a. New Major Sources, Federal Major Modifications, and SB 288 Major Modifications,
- b. Any new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any one pollutant,
- c. Any project which results in the offset thresholds being surpassed, 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 SB 288 Major Modifications

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

As demonstrated in Sections VII.C.7, this project does not constitute an SB 288 Major Modification, therefore, public noticing for SB 288 Major Modification purposes is not required.

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

b. PE > 100 lb/day

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

c. Offset Threshold

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

Offset Thresholds				
Pollutant	SSPE1 (lb/year)	SSPE2 (lb/year)	Offset Threshold	Public Notice Required?
NO _x	>20,000 lb/year	>20,000 lb/year	20,000 lb/year	No
SO _x	>54,750 lb/year	>54,750 lb/year	54,750 lb/year	No
PM ₁₀	>29,200 lb/year	>29,200 lb/year	29,200 lb/year	No
CO	>200,000 lb/year	>200,000 lb/year	200,000 lb/year	No
VOC	>20,000 lb/year	>20,000 lb/year	20,000 lb/year	No

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

d. SSIPE > 20,000 lb/year

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

SSIPE Public Notice Thresholds					
Pollutant	PE2 (lb/year)	PE1 (lb/year)	SSIPE (lb/year)	SSIPE Public Notice Threshold	Public Notice Required?
NO _x	12,593	0	12,593	20,000 lb/year	No
SO _x	767	0	767	20,000 lb/year	No
PM ₁₀	4380	0	4380	20,000 lb/year	No
CO	4380	0	4380	20,000 lb/year	No
VOC	2190	0	2190	20,000 lb/year	No

2. Public Notice Action

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

D. Daily Emission Limits (DELs)

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

practicable manner, on a daily basis. DELs are also required to enforce the applicability of BACT.

For the VDD, the DELs are stated in the form of emission factors and the maximum unit combustion rating.

Proposed Rule 2201 (DEL) Conditions:

- Emission rates from this unit shall not exceed any of the following limits: 0.023 lb-NO_x/MMBtu; 0.014 lb-SO_x/MMBtu; 0.008 lb-PM₁₀/MMBtu; 0.008 lb-CO/MMBtu; or 0.004 lb-VOC/MMBtu. [District Rule 2201]

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

No monitoring is required to demonstrate compliance with Rule 2201.

3. Recordkeeping

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

- Records of monthly natural gas combusted shall be maintained, retained on-site for a period of at least five years and made available for District inspection upon request. [District Rule 2201]

4. Reporting

No reporting is required to demonstrate compliance with Rule 2201.

Rule 2520 Federally Mandated Operating Permits

This facility is subject to this Rule, and has received their Title V Operating Permit. Since this project is a Federal Major Modification, the proposed project is considered to be a modification under the Federal Clean Air Act. As a result, the proposed project constitutes a Significant Modification to the Title V Permit.

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

Rule 4001 New Source Performance Standards

This rule incorporates the New Source Performance Standards from 40 CFR Part 60.

Subparts, K, Ka and Kb could potentially apply to the storage tanks located at this facility. However, pursuant to 40 CFR 60.110 (b), 60.110(a) (b), and 60.110(b) (b), these subparts do not apply to storage vessels less than 10,000 bbls, used for petroleum or condensate, that is stored, processed, and/or treated at a drilling and production facility prior to custody transfer.

Subpart OOOO could potentially apply to the tanks. However, pursuant to 40 CFR 60 60.5395, this subpart does not apply since the emissions from each of the uncontrolled tanks are estimated to be less than 6 tons per year as shown in Attachment D.

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

Rule 4101 - Visible Emissions

Rule 4101 states that no air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity.

As long as the equipment is properly maintained and operated, compliance with visible emissions limits is expected under normal operating conditions.

Rule 4102 Nuisance

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

California Health & Safety Code 41700 (Health Risk Assessment)

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

An HRA is not required for a project with a total facility prioritization score of less than one. According to the Technical Services Memo for this project (**Appendix E**), the total facility prioritization score including this project was greater than one. Therefore, an HRA was required to determine the short-term acute and long-term chronic exposure from this project.

The cancer risk for this project is shown below:

HRA Summary		
Unit	Cancer Risk	T-BACT Required
S-8282-113-1	0 per million	No
S-8282-123-0	5.36 per million	Yes

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 required for this project because the HRA indicates that the risk is above the District's thresholds for triggering T-BACT requirements.

For this project T-BACT is triggered for PAHs which are VOC. T-BACT is satisfied with BACT for VOC (see Attachment B), which is the use of a VDD; therefore, compliance with the District's Risk Management Policy is expected.

To ensure that human health risks will not exceed District allowable levels; the following permit conditions must be included for:

Unit # 123-0

1. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]

Compliance is expected.

Rule 4311 Flares

This Rule applies to operations involving the use of flares. This Rule defines a flare as:

A direct combustion device in which air and all combustible gases react at the burner with the objective of complete and instantaneous oxidation of the combustible gases. Flares are used either continuously or intermittently and are not equipped with devices for fuel-air mix control or for temperature control.

The VDD pre-mixes air and combustion gas; therefore, this Rule does not apply.

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

The facility is subject to 4409 as seen by permit conditions on their facility wide permit. Continued compliance is expected. The tanks & components within 5 feet of the tanks are subject to Rule 4623, therefore these components are not subject to Rule 4409.

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.

Tanks S-8282-113 is equipped with a vapor control system with a VOC control efficiency of 95%. No throughput/TVP records are required to be kept for fixed-roof tanks equipped with vapor control. Applicant has elected to participate in the voluntary tank preventive inspection, maintenance, and tank cleaning program. Tank cleaning will be conducted according to the requirements of Table 6.

Compliance with the requirements of this rule is expected.

CH&SC 42301.6 California Health & Safety Code (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.
- Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

Greenhouse Gas (GHG) Significance Determination

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

This facility complies with the California Air Resources Board (ARB) Cap and Trade regulation. Consistent with CCR §15064(h)(3), the District finds that compliance with ARB's Cap and Trade regulation would avoid or substantially lessen the impact of project-specific GHG emissions on global climate change. Therefore the project has a less than significant individual and cumulative impact on global climate change and Best Performance Standards or the mitigation of greenhouse gases are not required.

District CEQA Findings

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. Recommendations

Issue Authorities to S-8282-113-1 and 123-0 subject to the permit conditions on the attached draft Authority to Construct.

X. Billing Information

Permit Number	Fee Schedule	Fee Description	Annual Fee
S-8282-113-1	3020-5-C	21,000 gallons	\$135
S-8282-123-0	3020-2-H	80 MMBtu/hr	\$1030

- ATTACHMENT A Existing ATC
- ATTACHMENT B BACT Guideline 1 3 1 and Top-down BACT Analysis
- ATTACHMENT C Health Risk Assessment
- ATTACHMENT D 40 CFR 60 subpart OOOO calculations
- ATTACHMENT E VDD Manufacture's Information
- ATTACHMENT F GHG Calculations
- ATTACHMENT G Draft ATC's

ATTACHMENT A

Existing ATC



AUTHORITY TO CONSTRUCT

PERMIT NO: S-8282-113-0

ISSUANCE DATE: 11/20/2012

LEGAL OWNER OR OPERATOR: VINTAGE PRODUCTION CALIFORNIA LLC

MAILING ADDRESS: 9600 MING AVE, SUITE 300
BAKERSFIELD, CA 93311

LOCATION: LIGHT OIL WESTERN STATIONARY SOURCE
KERN COUNTY, CA

EQUIPMENT DESCRIPTION:

500 BBL PORTABLE FIXED ROOF TANK WITH WELL TEST SEPARATOR, 3-PHASE SEPARATOR, AND SERVED BY VAPOR CONTROL SYSTEM CONSISTING OF VAPOR COMPRESSOR, AND PIPING, VENTED TO APPROVED GAS GATHERING SYSTEM, SERVING TANKS S-8282-114, '-115, '-116, '-117, '-118, '-119, '-120, AND '-121 (REISSUE OF ATC S-1216-179-0)

CONDITIONS

1. The facility shall submit an application to modify the Title V permit in accordance with the timeframes and procedures of District Rule 2520. [District Rule 2520] Federally Enforceable Through Title V Permit
2. The portable well test operation shall not operate within 1,000 feet of the nearest receptor. [District Rule 4102]
3. Permittee shall notify the District Compliance Division in writing of each location at which the operation is located in excess of 24 hours. Such notification shall be made no later than 48 hours after starting operation at the location. [District Rule 1070]
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. Vapors shall be discharged to field gas gathering system. [District Rule 4623] Federally Enforceable Through Title V Permit
5. All piping, valves, and fittings shall be constructed and maintained in a leak-free condition. [District Rules 4409 and 4623] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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

Sayed Sadredin, Executive Director / APCO

6. A leak-free condition is defined as a condition without a gas leak. A gas leak is defined as a reading in excess of 2,000 ppmv, above background, as measured by a portable hydrocarbon detection instrument in accordance with the procedures specified in EPA Test Method 21. [District Rules 4409 and 4623] Federally Enforceable Through Title V Permit
7. 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] Federally Enforceable Through Title V Permit
8. VOC fugitive emissions from the components in gas service on tank and tank vapor collection system shall not exceed 0.44 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit
9. Permittee shall maintain accurate component count for tank according to EPA's "Protocol for Equipment Leak Emission Estimate," Table 2-4, Oil and Gas Production Operations Average Emission Factors. Permittee shall update such records when new components are approved and installed. [District Rule 2201] Federally Enforceable Through Title V Permit
10. All piping, fittings, and valves on this tank shall be inspected annually by the facility operator in accordance with EPA Method 21, with the instrument calibrated with methane, to ensure compliance with the leaking provisions of this permit. [District Rules 2201 and 4623] Federally Enforceable Through Title V Permit
11. Any component found to be leaking on two consecutive annual inspections is in violation of the District Rule 4623, even if it is under the voluntary inspection and maintenance program. [District Rule 4623] Federally Enforceable Through Title V Permit
12. Operator shall maintain an inspection log containing the following 1) Type of component leaking; 2) Date and time of leak detection, and method of detection; 3) Date and time of leak repair, and emission level of recheck after leak is repaired; 4) Method used to minimize the leak to lowest possible level within 8 hours after detection. [District Rules 2201 and 4623] Federally Enforceable Through Title V Permit
13. Operator shall visually inspect tank shell, hatches, seals, seams, cable seals, valves, flanges, connectors, and any other piping components directly affixed to the tank and within five feet of the tank at least once per year for liquid leaks, and with a portable hydrocarbon detection instrument conducted in accordance with EPA Method 21 for gas leaks. Operator shall also visually or ultrasonically inspect as appropriate, the external shells and roofs of uninsulated tanks for structural integrity annually. [District Rule 4623] Federally Enforceable Through Title V Permit
14. Upon detection of a liquid leak, defined as a leak rate of greater than or equal to 30 drops per minute, operator shall repair the leak within 8 hours. For leaks with a liquid leak rate of between 3 and 30 drops per minute, the leaking component shall be repaired within 24 hours after detection. [District Rule 4623] Federally Enforceable Through Title V Permit
15. Upon detection of a gas leak, defined as a VOC concentration of greater than 2,000 ppmv measured in accordance with EPA Method 21, operator shall take on of the following actions: 1) eliminate the leak within 8 hours after detection; or 2) if the leak cannot be eliminated, then minimize the leak to the lowest possible level within 8 hours after detection by using best maintenance practices, and eliminate the leak within 48 hours after minimization. In no event shall the total time to minimize and eliminate a leak exceed 56 hours after detection. [District Rule 4623] Federally Enforceable Through Title V Permit
16. Components found to be leaking either liquids or gases shall be immediately affixed with a tag showing the component to be leaking. Operator shall maintain records of the liquid or gas leak detection readings, date/time the leak was discovered, and date/time the component was repaired to a leak-free condition. [District Rule 4623] Federally Enforceable Through Title V Permit
17. Leaking components that have been discovered by the operator that have been immediately tagged and repaired within the timeframes specified in District Rule 4623, Table 3 shall not constitute a violation of this rule. Leaking components as defined by District Rule 4623 discovered by District staff that were not previously identified and/or tagged by the operator, and/or any leaks that were not repaired within the timeframes specified in District Rule 4623, Table 3 shall constitute a violation of this rule. [District Rule 4623] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

18. If a component type for a given tank is found to leak during an annual inspection, operator shall conduct quarterly inspections of that component type on the tank or tank system for four consecutive quarters. If no components are found to leak after four consecutive quarters, the operator may revert to annual inspections. [District Rule 4623] Federally Enforceable Through Title V Permit
19. Any component found to be leaking on two consecutive annual inspections is in violation of this rule, even if covered under the voluntary inspection and maintenance program. [District Rule 4623] Federally Enforceable Through Title V Permit
20. While performing tank cleaning activities, operators may only use the following cleaning agents: diesel, solvents with an initial boiling point of greater than 302 degrees F, solvents with a vapor pressure of less than 0.5 psia, or solvents with 50 grams of VOC per liter or less. [District Rule 4623] Federally Enforceable Through Title V Permit
21. Steam cleaning shall only be allowed at locations where wastewater treatment facilities are limited, or during the months of December through March. [District Rule 4623] Federally Enforceable Through Title V Permit
22. During sludge removal, the operator shall control emissions from the sludge receiving vessel by operating an APCO-approved vapor control device that reduces emissions of organic vapors by at least 95%. [District Rule 4623] Federally Enforceable Through Title V Permit
23. Permittee shall only transport removed sludge in closed, liquid leak-free containers. [District Rule 4623] Federally Enforceable Through Title V Permit
24. Permittee shall store removed sludge, until final disposal, in vapor leak-free containers, or in tanks complying with the vapor control requirements of District Rule 4623. Sludge that is to be used to manufacture roadmix, as defined in District Rule 2020, is not required to be stored in this manner. Roadmix manufacturing operations exempt pursuant to District Rule 2020 shall maintain documentation of their compliance with Rule 2020, and shall readily make said documentation available for District inspection upon request. [District Rules 2020 and 4623] Federally Enforceable Through Title V Permit
25. Operator shall maintain all records of required monitoring data and support information for inspection at any time for a period of five years. [District Rule 2520] Federally Enforceable Through Title V Permit

ATTACHMENT B

BACT Guideline 1.3.1 and Top-down BACT Analysis

San Joaquin Valley
Unified Air Pollution Control District

Best Available Control Technology (BACT) Guideline 1.4.1*

Last Update 11/9/1995

Waste Gas Flare - 15.3 MMBtu/hr, Serving a Tank Vapor Control System

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
CO	Steam-assisted or air-assisted when steam unavailable		
NOx	Steam-assisted or air-assisted when steam unavailable		
PM10	Steam-assisted with smokeless combustion or Air-assisted flare with smokeless combustion when steam unavailable Pilot Light Fired Solely on LPG or Natural Gas		
SOx	Pilot Light Fired Solely on LPG or Natural Gas		
VOC	Steam-assisted or air-assisted 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**

Top Down BACT Analysis

1. BACT Analysis for NO_x Emissions:

a. Step 1 - Identify all control technologies

Steam-assisted
air assisted when steam unavailable
VOC Destruction Device (VDD)

b. Step 2 - Eliminate technologically infeasible options

There are no technologically infeasible options to eliminate from step 1.

c. Step 3 - Rank remaining options by control effectiveness

All of the control technologies have the same control effectiveness

d. Step 4 - Cost Effectiveness Analysis

The applicant has proposed the VDD which has equivalent control effectiveness as the other control technologies; therefore, a cost analysis is not required .

e. Step 5 - Select BACT

BACT for NO_x emissions from this operation is the VDD; therefore BACT for NO_x emissions is satisfied.

2. BACT Analysis for SO_x Emissions:

a. Step 1 - Identify all control technologies

Pilot Light Fired Solely on LPG or Natural Gas
VDD with no pilot light

b. Step 2 - Eliminate technologically infeasible options

There are no technologically infeasible options to eliminate from step 1.

c. Step 3 - Rank remaining options by control effectiveness

VDD with no pilot light
Pilot Light Fired Solely on LPG or Natural Gas

d. Step 4 - Cost Effectiveness Analysis

The applicant has proposed the VDD which the greatest control; therefore, a cost analysis is not required.

e. Step 5 - Select BACT

BACT for SO_x emissions from operation is the VDD; therefore BACT for NO_x emissions is satisfied.

3. BACT Analysis for PM₁₀ Emissions:

a. Step 1 - Identify all control technologies

Steam-assisted with smokeless combustion

Air-assisted with smokeless combustion when steam unavailable.

Pilot Light Fired Solely on LPG or Natural Gas

VDD

b. Step 2 - Eliminate technologically infeasible options

There are no technologically infeasible options to eliminate from step 1.

c. Step 3 - Rank remaining options by control effectiveness

All of the control technologies have the same control effectiveness

The VDD does not have a pilot light

d. Step 4 - Cost Effectiveness Analysis

The applicant has proposed the VDD which has an equivalent control effectiveness as the other technologies; therefore, a cost analysis is not required.

e. Step 5 - Select BACT

BACT for PM₁₀ emissions from operation is the VDD; therefore BACT for PM₁₀ emissions is satisfied.

4. BACT Analysis for CO Emissions:

a. Step 1 - Identify all control technologies

Steam-assisted with smokeless combustion

Air-assisted with smokeless combustion when steam unavailable.

VDD

b. Step 2 - Eliminate technologically infeasible options

There are no technologically infeasible options to eliminate from step 1.

c. Step 3 - Rank remaining options by control effectiveness

All of the control technologies have the same control effectiveness

d. Step 4 - Cost Effectiveness Analysis

The applicant has proposed the VDD which has an equivalent control effectiveness as the other technologies; therefore, a cost analysis is not required.

e. Step 5 - Select BACT

BACT for CO emissions from operation is the VDD; therefore BACT for CO emissions is satisfied.

NO_x, SO_x, PM₁₀, CO, and VOC

3. BACT Analysis for VOC Emissions:

a. Step 1 - Identify all control technologies

Steam-assisted with smokeless combustion

Air-assisted with smokeless combustion when steam unavailable.

VDD

b. Step 2 - Eliminate technologically infeasible options

There are no technologically infeasible options to eliminate from step 1.

c. Step 3 - Rank remaining options by control effectiveness

All of the control technologies have the same control effectiveness

d. Step 4 - Cost Effectiveness Analysis

The applicant has proposed the VDD which has an equivalent control effectiveness as the other technologies; therefore, a cost analysis is not required.

e. Step 5 - Select BACT

BACT for VOC emissions from operation is the VDD; therefore BACT for VOC emissions is satisfied.

ATTACHMENT C

Health Risk Assessment

San Joaquin Valley Air Pollution Control District Risk Management Review

To: Steve Leonard – Permit Services
 From: Yu Vu – Technical Services
 Date: April 4, 2013
 Facility Name: Vintage Production CA LLC
 Location: NW12, 32S, 24E, L.O.W.
 Application #(s): S-8282-113-1 and 123-0
 Project #: S-1130506

A. RMR SUMMARY

RMR Summary				
Categories	Fixed-Roof Tank (Unit 113-1)	Two Enclosed Flares (Unit 123-0)	Project Totals	Facility Totals
Prioritization Score	0.00	1.08	1.08	1.08
Acute Hazard Index	0.00	0.02	0.02	0.02
Chronic Hazard Index	0.00	0.00	0.00	0.00
Maximum Individual Cancer Risk (10^{-6})	0.00	5.36	5.36	5.36
T-BACT Required?	No	Yes		
Special Permit Conditions?	No	Yes		

Proposed Permit Conditions

To ensure that human health risks will not exceed District allowable levels, the following permit conditions must be included for:

Unit # 123-0

2. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]

T-BACT is required for this unit because of emissions of PAHs which are VOCs. In accordance with District policy, BACT for this unit will be considered to be T-BACT.

B. RMR REPORT

I. Project Description

Technical Services received a request on March 29, 2013, to perform a Risk Management Review and an Ambient Air Quality Analysis for a proposed modification to a fixed roof tank (unit 113-1) and the installation of two (2) 40 MMBtu/hr enclosed flares (unit 123-0). The flares will be serving several other permitted units, include unit 113-1. The emissions associated with this project all stem from unit 123-0.

II. Analysis

Technical Services performed a prioritization using the District's HEARTs database. Since the total facility prioritization score was greater than one, a refined health risk assessment was required. Emissions calculated using the District's "Oilfield NG and WG Flare" spreadsheet were input into the HEARTs database. The AERMOD model was used, with the parameters outlined below and meteorological data for 2005-2009 from Bakersfield to determine the dispersion factors (i.e., the predicted concentration or X divided by the normalized source strength or Q) for a receptor grid. These dispersion factors were input into the Hot Spots Analysis and Reporting Program (HARP) risk assessment module to calculate the chronic and acute hazard indices and the carcinogenic risk for the project.

The following parameters were used for the review.

Analysis Parameters Unit 123-0 (each flare)			
Source Type	Point	Location Type	Rural
Stack Height (m)	7.01	Closest Receptor (m)	~600
Stack Diameter. (m)	0.914	Type of Receptor	Business
Stack Exit Velocity (m/s)	8 504	Max Hours per Year	8760
Stack Exit Temp. (°K)	1477 594	Fuel Type	NG+WG
Flare Rating (MMBtu/hr)	40		

Technical Services also performed modeling for criteria pollutants CO, NOx, SOx, PM₁₀, and PM_{2.5}. The emission rates used for criteria pollutant modeling were 0.64 lb/hr CO, 1.84 lb/hr NOx, 0.11 lb/hr SOx, 0.64lb/hr PM₁₀, and 0.64 lb/hr PM_{2.5} (combined emissions for both flares).

The results from the Criteria Pollutant Modeling are as follows:

Criteria Pollutant Modeling Results*

Diesel ICE	1 Hour	3 Hours	8 Hours	24 Hours	Annual
CO	Pass	X	Pass	X	X
NO _x	Pass	X	X	X	Pass
SO _x	Pass	Pass	X	Pass	Pass
PM ₁₀	X	X	X	Pass ²	Pass ²
PM _{2.5}	X	X	X	Pass ²	Pass ²

*Results were taken from the attached PSD spreadsheet

¹The project was compared to the 1-hour NO₂ National Ambient Air Quality Standard that became effective on April 12, 2010 using the District's approved procedures

²The criteria pollutants are below EPA's level of significance as found in 40 CFR Part 51 165 (b)(2)

III. Conclusion

The acute and chronic indices are below 1.0 and the cancer risk associated with the project is greater than 1.0 in a million, but less than 10 in a million. **In accordance with the District's Risk Management Policy, the project is approved with Toxic Best Available Control Technology (T-BACT).**

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

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

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

IV. Attachments

- A. RMR request from the project engineer
- B. Additional information from the applicant/project engineer
- C. Toxic emissions summary
- D. Prioritization score
- E. Facility Summary

ATTACHMENT D

40 CFR 60 Subpart OOOO Calculations

TANKS 4.0.9d Emissions Report - Detail Format Tank Identification and Physical Characteristics

Identification
 User Identification: Typical 500 Bbl (21,000 gal) Portable Storage Tank
 City: Bakersfield
 State: California
 Company: Occidental of Elk Hills
 Type of Tank: Horizontal Tank
 Description: OEH Early Production Test Facility 500 Bbl Portable Organic Liquid Storage Tank, 4 turnovers/day,

Tank Dimensions
 Shell Length (ft): 35 00
 Diameter (ft): 10 11
 Volume (gallons): 21,000 00
 Turnovers: 1,460 00
 Net Throughput(gal/yr): 30,660,000 00
 Is Tank Heated (y/n): N
 Is Tank Underground (y/n): N

Paint Characteristics
 Shell Color/ShaDe: White/White
 Shell Condition: Good

Breather Vent Settings
 Vacuum Settings (psig): -0.03
 Pressure Settings (psig): 0.03

Metarological Data used in Emissions Calculations Bakersfield, California (Avg Atmospheric Pressure = 14.47 psia)

TANKS 4.0.9d Emissions Report - Detail Format Liquid Contents of Storage Tank

Typical 500 Bbl (21,000 gal) Portable Storage Tank - Horizontal Tank
 Bakersfield, California

Mixture/Component	Month	Daily Liquid Surf Temperature (deg F)			Liquid Bulk Temp (deg F)	Vapor Pressure (psia)			Vapor Mol Weight	Liquid Mass Fract	Vapor Mass Fract	Mol Weight	Basis for Vapor Pressure Calculations
		Avg	Min	Max		Avg	Min	Max					
Crude Oil (RVP 3.5)	Jan	58.62	54.46	62.76	65.42	1.7127	1.5959	1.8705	50.0000			207.00	Option 4 RVP=3.5
Crude Oil (RVP 3.5)	Feb	61.49	56.39	68.58	65.42	1.8201	1.6327	2.0248	50.0000			207.00	Option 4 RVP=3.5
Crude Oil (RVP 3.5)	Mar	63.85	57.94	69.77	65.42	1.9129	1.8877	2.1621	50.0000			207.00	Option 4 RVP=3.5
Crude Oil (RVP 3.5)	Apr	68.98	60.01	73.95	65.42	2.0416	1.7640	2.3558	50.0000			207.00	Option 4 RVP=3.5
Crude Oil (RVP 3.5)	May	71.00	63.30	78.70	65.42	2.2171	1.8908	2.5879	50.0000			207.00	Option 4 RVP=3.5
Crude Oil (RVP 3.5)	Jun	74.47	66.32	82.63	65.42	2.3788	2.0140	2.7957	50.0000			207.00	Option 4 RVP=3.5
Crude Oil (RVP 3.5)	Jul	77.01	68.80	85.22	65.42	2.5028	2.1197	2.9403	50.0000			207.00	Option 4 RVP=3.5
Crude Oil (RVP 3.5)	Aug	78.03	68.25	83.61	65.42	2.4542	2.0958	2.8810	50.0000			207.00	Option 4 RVP=3.5
Crude Oil (RVP 3.5)	Sep	72.96	65.93	79.88	65.42	2.3070	1.9976	2.8545	50.0000			207.00	Option 4 RVP=3.5
Crude Oil (RVP 3.5)	Oct	68.33	62.00	74.66	65.42	2.0991	1.8388	2.3875	50.0000			207.00	Option 4 RVP=3.5
Crude Oil (RVP 3.5)	Nov	62.38	57.33	67.44	65.42	1.8549	1.6658	2.0612	50.0000			207.00	Option 4 RVP=3.5
Crude Oil (RVP 3.5)	Dec	58.39	54.32	62.46	65.42	1.7041	1.5810	1.8577	50.0000			207.00	Option 4 RVP=3.5

TANKS 4.0.9d Emissions Report - Detail Format Detail Calculations (AP-42)

Typical 500 Bbl (21,000 gal) Portable Storage Tank - Horizontal Tank
 Bakersfield, California

Month	January	February	March	April	May	June	July	August	September	October	November	December
Standing Losses (lb)	29.6904	35.7954	48.7031	59.8418	74.4958	82.0970	89.9605	83.3874	68.1659	57.4285	38.7750	29.1437
Vapor Space Volume (cu ft)	1,788.2032	1,788.2032	1,788.2032	1,788.2032	1,788.2032	1,788.2032	1,788.2032	1,788.2032	1,788.2032	1,788.2032	1,788.2032	1,788.2032
Vapor Density (lb/cu ft)	0.0154	0.0163	0.0170	0.0181	0.0195	0.0208	0.0217	0.0213	0.0202	0.0185	0.0166	0.0153
Vapor Space Expansion Factor	0.0513	0.0653	0.0782	0.0955	0.1100	0.1207	0.1247	0.1166	0.1019	0.0874	0.0653	0.0500
Ventled Vapor Saturation Factor	0.8858	0.6723	0.6612	0.6465	0.6274	0.6109	0.5687	0.6034	0.6181	0.6401	0.6681	0.6886
Tank Vapor Space Volume												
Vapor Space Volume (cu ft)	1,788.2032	1,788.2032	1,788.2032	1,788.2032	1,788.2032	1,788.2032	1,788.2032	1,788.2032	1,788.2032	1,788.2032	1,788.2032	1,788.2032
Tank Diameter (ft)	10.1060	10.1060	10.1060	10.1060	10.1060	10.1060	10.1060	10.1060	10.1060	10.1060	10.1060	10.1060
Effective Diameter (ft)	21.2270	21.2270	21.2270	21.2270	21.2270	21.2270	21.2270	21.2270	21.2270	21.2270	21.2270	21.2270

TANKS 4 0 Report

Vapor Space Outage (ft)	5 0530	5 0530	5 0530	5 0530	5 0530	5 0530	5 0530	5 0530	5 0530	5 0530	5 0530	5 0530
Tank Shell Length (ft)	35 0000	35 0000	35 0000	35 0000	35 0000	35 0000	35 0000	35 0000	35 0000	35 0000	35 0000	35 0000
Vapor Density												
Vapor Density (lb/cu ft)	0 0154	0 0163	0 0170	0 0181	0 0185	0 0208	0 0217	0 0213	0 0202	0 0185	0 0188	0 0153
Vapor Molecular Weight (lb/lb-mole)	50 0000	50 0000	50 0000	50 0000	50 0000	50 0000	50 0000	50 0000	50 0000	50 0000	50 0000	50 0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia)	1 7127	1 8201	1 9129	2 0415	2 2171	2 3788	2 5028	2 4542	2 3070	2 0991	1 8549	1 7041
Daily Avg. Liquid Surface Temp. (deg. R)	518 2922	521 1571	523 5218	528 8478	530 8869	534 1445	538 8832	535 7010	532 8258	527 9988	522 0547	518 0594
Daily Average Ambient Temp. (deg. F)	47 7500	51 2500	57 3500	63 0000	70 9500	78 2000	84 0500	82 5500	78 8000	87 7500	95 7500	47 4000
Ideal Gas Constant R. (psia-cu-ft / (lb-mol deg. R))	10 731	10 731	10 731	10 731	10 731	10 731	10 731	10 731	10 731	10 731	10 731	10 731
Liquid Bulk Temperature (deg. R)	525 0900	525 0900	525 0900	525 0900	525 0900	525 0900	525 0900	525 0900	525 0900	525 0900	525 0900	525 0900
Tank Paint Solar Absorbance (Shell)	0 1700	0 1700	0 1700	0 1700	0 1700	0 1700	0 1700	0 1700	0 1700	0 1700	0 1700	0 1700
Daily Total Solar Insulation Factor (Btu/sq ft day)	727 5001	1,058 7300	1 478 2573	1 952 7969	2,340 8181	2,554 8753	2,528 6419	2,288 7858	1,882 8902	1,401 0643	908 0267	668 5843
Vapor Space Expansion Factor												
Vapor Space Expansion Factor	0 0513	0 0853	0 0782	0 0953	0 1100	0 1207	0 1247	0 1168	0 1019	0 0874	0 0653	0 0500
Daily Vapor Temperature Range (deg. R)	18 8389	20 3758	23 8500	27 8713	30 7983	32 8097	32 8443	31 1288	28 1138	25 3171	20 2342	18 2769
Daily Vapor Pressure Range (psia)	0 3045	0 3921	0 4743	0 5886	0 6970	0 7817	0 8205	0 7652	0 6570	0 5477	0 3954	0 2987
Breather Vent Press. Setting Range (psia)	0 0600	0 0600	0 0600	0 0600	0 0600	0 0600	0 0600	0 0600	0 0600	0 0600	0 0600	0 0600
Vapor Pressure at Daily Average Liquid Surface Temperature (psia)	1 7127	1 8201	1 9129	2 0415	2 2171	2 3788	2 5028	2 4542	2 3070	2 0991	1 8549	1 7041
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia)	1 5659	1 0327	1 8877	1 7840	1 6908	2 0140	2 1197	2 0956	1 9975	1 8398	1 6658	1 5610
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia)	1 8705	2 0248	2 1821	2 3558	2 5879	2 7957	2 9403	2 8810	2 8545	2 3875	2 0812	1 8577
Daily Avg. Liquid Surface Temp. (deg. R)	518 2922	521 1571	523 5218	528 8478	530 8869	534 1445	538 8832	535 7010	532 8258	527 9988	522 0547	518 0594
Daily Min. Liquid Surface Temp. (deg. R)	514 1325	518 0632	517 6071	519 8000	522 9673	525 9821	528 4721	527 9184	525 5973	521 8578	518 8961	513 9872
Daily Max. Liquid Surface Temp. (deg. R)	522 4520	526 2510	529 4366	533 0166	538 3865	542 2970	544 8942	543 4827	539 6540	534 3281	527 1132	522 1257
Daily Ambient Temp. Range (deg. R)	18 3000	21 3000	23 1000	25 8000	27 3000	28 4000	28 9000	28 1000	26 0000	25 9000	22 1000	18 2000
Vented Vapor Saturation Factor												
Vented Vapor Saturation Factor	0 8856	0 8723	0 8812	0 8465	0 8274	0 8109	0 5987	0 6034	0 6181	0 8401	0 6681	0 6686
Vapor Pressure at Daily Average Liquid Surface Temperature (psia)	1 7127	1 8201	1 9129	2 0415	2 2171	2 3788	2 5028	2 4542	2 3070	2 0991	1 8549	1 7041
Vapor Space Outage (ft)	5 0530	5 0530	5 0530	5 0530	5 0530	5 0530	5 0530	5 0530	5 0530	5 0530	5 0530	5 0530
Working Losses (lb)	731 4484	777 3423	818 9764	871 8888	948 8833	1,018 9400	1 068 8947	1,048 1481	985 2912	898 5004	792 1970	727 7719
Vapor Molecular Weight (lb/lb-mole)	50 0000	50 0000	50 0000	50 0000	50 0000	50 0000	50 0000	50 0000	50 0000	50 0000	50 0000	50 0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia)	1 7127	1 8201	1 9129	2 0415	2 2171	2 3788	2 5028	2 4542	2 3070	2 0991	1 8549	1 7041
Net Throughput (gal/mo)	2,555 000 0000	2,555 000 0000	2,555 000 0000	2,555 000 0000	2,555 000 0000	2,555 000 0000	2,555 000 0000	2,555 000 0000	2,555 000 0000	2,555 000 0000	2,555 000 0000	2,555 000 0000
Annual Turnovers	1,460 0000	1,460 0000	1,460 0000	1,460 0000	1,460 0000	1,460 0000	1,460 0000	1,460 0000	1,460 0000	1,460 0000	1,460 0000	1,460 0000
Turnover Factor	0 1872	0 1872	0 1872	0 1872	0 1872	0 1872	0 1872	0 1872	0 1872	0 1872	0 1872	0 1872
Tank Diameter (ft)	10 1060	10 1060	10 1060	10 1060	10 1060	10 1060	10 1060	10 1060	10 1060	10 1060	10 1060	10 1060
Working Loss Product Factor	0 7500	0 7500	0 7500	0 7500	0 7500	0 7500	0 7500	0 7500	0 7500	0 7500	0 7500	0 7500
Total Losses (lb)	781 4478	813 1377	865 7898	931 7316	1 021 3790	1,098 0378	1,168 8552	1 131 5358	1,053 4571	953 9289	830 8720	756 9158

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: January, February, March, April, May, June, July, August, September, October, November, December

Typical 500 Bbl (21,000 gal) Portable Storage Tank - Horizontal Tank
 Bakersfield, California

Components	Losses(lbs)		
	Working Loss	Breathing Loss	Total Emissions
Crude Oil (RVP 3.5)	10,679.28	897.88	11,377.17

ATTACHMENT E

VDD Manufacture's Information



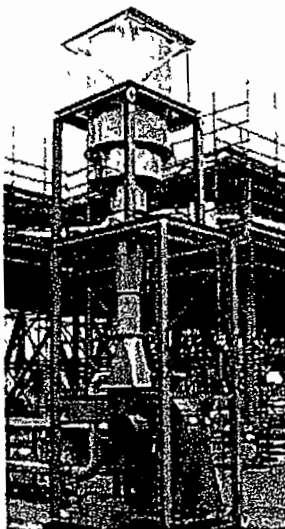
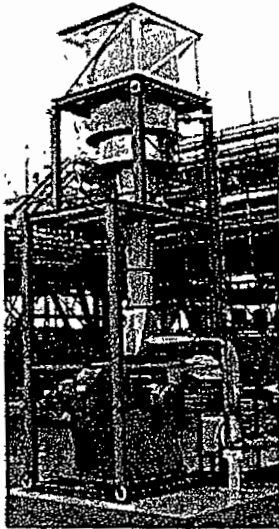
better together

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Bekaert CEB 800 & CEB 1200

The cleanest solution for your waste gas combustion



CEB 800 & CEB 1200

Keep the environment clean when combusting your waste gases

- No luminous flame
- No odor
- No heat radiation
- No smoke
- Low height
- Small footprint
- Heat recovery available

Achievable emissions levels

Nox < 15 ppm < 0.023 lbs/MMBtu
CO < 10 ppm < 0.008 lbs/MMBtu
Cxhy < 10 ppm < 0.004 lbs/MMBtu

Combustion efficiency
99.99% DRE over full operational range

	CEB 800	CEB 1200
Capacity*	614,000 SCFD	921,000 SCFD
Maximum Thermal Capacity	27 MMBtu/h	40 MMBtu/h
Turndown ratio**	10:1	
Footprint and height***	5'10" x 6'3" x 22'10"	
Weight	5,511 lbs	
Waste gas pressure range	10 - 80"WC	
Fan motor size	16 hp	21.5 hp
Waste gas connection	4" ANSI 150 lbs RF	
Support gas connection	2" ANSI 150 lbs RF	
Ignition system	Spark or Pilot ignition	
Operating temperature	2,000 - 2,200 F	
Ground Temperature	Ambient during operation	

* Capacity is based on natural gas with gross heating value of 1,069 Btu/SCF.
 ** Turndown ratio can be increased for specific projects with customized units.
 *** Stack height based on minimum height that meets EPA's Protocol for position of emission testing parts.

CEB 800 & CEB 1200 are products of
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ATTACHMENT F

Green House Gas Calculations

62.54 MMBtu VDD

Basis and Assumptions:

- The VDD is fired with natural gas at a rate of 62.5 MMBtu/hour (HHV)
- The VDD operates 8,760 hours per year and is in commercial/institutional service
- Emission factors and global warming potentials (GWP) are taken from the California Climate Change Action Registry (CCAR), Version 3.1, January, 2009 (Appendix C, Tables C.7 and C.8):

CO₂ 53.06 kg/MMBtu (HHV) natural gas (116.7 lb/MMBtu)

CH₄ 0.005 kg/MMBtu (HHV) natural gas (0.011 lb/MMBtu)

N₂O 0.0001 kg/MMBtu (HHV) natural gas (0.00022 lb/MMBtu)

GWP for CH₄ = 21 lb-CO₂e per lb-CH₄

GWP for N₂O = 310 lb-CO₂e per lb-N₂O

Calculations

Hourly Emissions

CO₂ Emissions = 62.5 MMBtu/hr x 116.7 lb/MMBtu = 7293.8 lb-CO₂e/hour

CH₄ Emissions = 62.5 MMBtu/hr x 0.011 lb/MMBtu x 21 lb-CO₂e per lb-CH₄ = 15.0 lb-CO₂e/hour

N₂O Emissions = 62.5 MMBtu/hr x 0.00022 lb/MMBtu x 310 lb-CO₂e per lb-N₂O = 3.8 lb-CO₂e/hour

Total = 7293.8 + 15.0 + 3.8 = 7312.6 lb-CO₂e/hour

Annual Emissions.

7312.6 lb-CO₂e/hour x 8,760 hr/year ÷ 2,000 lb/ton = 32,029 tons-CO₂e/year

Metric Conversion

32,029 short tons-CO₂e/year x 0.9072 metric tons/short ton = **29,057 metric tons**

ATTACHMENT G

Draft ATC's

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT
DRAFT

PERMIT NO: S-8282-113-1

LEGAL OWNER OR OPERATOR: VINTAGE PRODUCTION CALIFORNIA LLC
MAILING ADDRESS: 9600 MING AVE, SUITE 300
BAKERSFIELD, CA 93311

LOCATION: LIGHT OIL WESTERN STATIONARY SOURCE
KERN COUNTY, CA

EQUIPMENT DESCRIPTION:

MODIFICATION OF 500 BBL PORTABLE FIXED ROOF TANK WITH WELL TEST SEPARATOR, 3-PHASE SEPARATOR, AND SERVED BY VAPOR CONTROL SYSTEM CONSISTING OF VAPOR COMPRESSOR, AND PIPING, VENTED TO APPROVED GAS GATHERING SYSTEM, SERVING TANKS S-8282-114, '-115, '-116, '-117, '-118, '-119, '-120, AND '-121 ADD OPTIONAL USE OF UP TO TWO 40 MMBTU/HR BEKAERT CEB 1200 VAPOR DESTRUCTION DEVICES IN PARALLEL LISTED ON PERMIT S-8282-123

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5 3.4] Federally Enforceable Through Title V Permit
3. The portable well test operation shall not operate within 1,000 feet of the nearest receptor. [District Rule 4102]
4. Permittee shall notify the District Compliance Division in writing of each location at which the operation is located in excess of 24 hours. Such notification shall be made no later than 48 hours after starting operation at the location [District Rule 1070]
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. Vapors shall be discharged to field gas gathering system or the VOC destruction device listed on permit S-8282-123. [District Rule 4623] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director, APCO

DAVID WARNER, Director of Permit Services
S 8282-113-1 May 30 2013 7 12AM - DAVIDSOS Joint Inspection NOT Required

6. All piping, valves, and fittings shall be constructed and maintained in a leak-free condition. [District Rules 4409 and 4623] Federally Enforceable Through Title V Permit
7. For the components associated with the tank and components within 5 foot of the tank, a leak-free 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 [District Rules 2201 and 4623] Federally Enforceable Through Title V Permit
8. For the components associated with the vapor control equipment and other equipment at the facility, a leak-free condition is defined as a condition without a gas leak. A gas leak is defined as a reading in excess of 2,000 ppmv, above background, as measured by a portable hydrocarbon detection instrument in accordance with the procedures specified in EPA Test Method 21. [District Rule 2201] Federally Enforceable Through Title V Permit
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] Federally Enforceable Through Title V Permit
10. VOC fugitive emissions from the components in gas service on tank and tank vapor collection system shall not exceed 0.44 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit
11. Permittee shall maintain accurate component count for tank according to EPA's "Protocol for Equipment Leak Emission Estimate," Table 2-4, Oil and Gas Production Operations Average Emission Factors. Permittee shall update such records when new components are approved and installed. [District Rule 2201] Federally Enforceable Through Title V Permit
12. All piping, fittings, and valves on this tank shall be inspected annually by the facility operator in accordance with EPA Method 21, with the instrument calibrated with methane, to ensure compliance with the leaking provisions of this permit. [District Rules 2201 and 4623] Federally Enforceable Through Title V Permit
13. Any component found to be leaking on two consecutive annual inspections is in violation of the District Rule 4623, even if it is under the voluntary inspection and maintenance program. [District Rule 4623] Federally Enforceable Through Title V Permit
14. Operator shall maintain an inspection log containing the following 1) Type of component leaking, 2) Date and time of leak detection, and method of detection; 3) Date and time of leak repair, and emission level of recheck after leak is repaired; 4) Method used to minimize the leak to lowest possible level within 8 hours after detection. [District Rules 2201 and 4623] Federally Enforceable Through Title V Permit
15. Operator shall visually inspect tank shell, hatches, seals, seams, cable seals, valves, flanges, connectors, and any other piping components directly affixed to the tank and within five feet of the tank at least once per year for liquid leaks, and with a portable hydrocarbon detection instrument conducted in accordance with EPA Method 21 for gas leaks. Operator shall also visually or ultrasonically inspect as appropriate, the external shells and roofs of uninsulated tanks for structural integrity annually [District Rule 4623] Federally Enforceable Through Title V Permit
16. Upon detection of a liquid leak, defined as a leak rate of greater than or equal to 30 drops per minute, operator shall repair the leak within 8 hours. For leaks with a liquid leak rate of between 3 and 30 drops per minute, the leaking component shall be repaired within 24 hours after detection. [District Rule 4623] Federally Enforceable Through Title V Permit
17. Upon detection of a gas leak, the operator shall take one of the following actions: 1) eliminate the leak within 8 hours after detection; or 2) if the leak cannot be eliminated, then minimize the leak to the lowest possible level within 8 hours after detection by using best maintenance practices, and eliminate the leak within 48 hours after minimization. In no event shall the total time to minimize and eliminate a leak exceed 56 hours after detection. [District Rules 2201 and 4623] Federally Enforceable Through Title V Permit
18. Components found to be leaking either liquids or gases shall be immediately affixed with a tag showing the component to be leaking. Operator shall maintain records of the liquid or gas leak detection readings, date/time the leak was discovered, and date/time the component was repaired to a leak-free condition [District Rule 4623] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

19. Leaking components that have been discovered by the operator that have been immediately tagged and repaired within the timeframes specified in District Rule 4623, Table 3 shall not constitute a violation of this rule. Leaking components as defined by District Rule 4623 discovered by District staff that were not previously identified and/or tagged by the operator, and/or any leaks that were not repaired within the timeframes specified in District Rule 4623, Table 3 shall constitute a violation of this rule. [District Rule 4623] Federally Enforceable Through Title V Permit
20. If a component type for a given tank is found to leak during an annual inspection, operator shall conduct quarterly inspections of that component type on the tank or tank system for four consecutive quarters. If no components are found to leak after four consecutive quarters, the operator may revert to annual inspections. [District Rule 4623] Federally Enforceable Through Title V Permit
21. While performing tank cleaning activities, operators may only use the following cleaning agents: diesel, solvents with an initial boiling point of greater than 302 degrees F, solvents with a vapor pressure of less than 0.5 psia, or solvents with 50 grams of VOC per liter or less. [District Rule 4623] Federally Enforceable Through Title V Permit
22. Steam cleaning shall only be allowed at locations where wastewater treatment facilities are limited, or during the months of December through March. [District Rule 4623] Federally Enforceable Through Title V Permit
23. During sludge removal, the operator shall control emissions from the sludge receiving vessel by operating an APCO-approved vapor control device that reduces emissions of organic vapors by at least 95%. [District Rule 4623] Federally Enforceable Through Title V Permit
24. Permittee shall only transport removed sludge in closed, liquid leak-free containers. [District Rule 4623] Federally Enforceable Through Title V Permit
25. Permittee shall store removed sludge, until final disposal, in vapor leak-free containers, or in tanks complying with the vapor control requirements of District Rule 4623. Sludge that is to be used to manufacture roadmix, as defined in District Rule 2020, is not required to be stored in this manner. Roadmix manufacturing operations exempt pursuant to District Rule 2020 shall maintain documentation of their compliance with Rule 2020, and shall readily make said documentation available for District inspection upon request. [District Rules 2020 and 4623] Federally Enforceable Through Title V Permit
26. Operator shall maintain all records of required monitoring data and support information for inspection at any time for a period of five years. [District Rule 2520] Federally Enforceable Through Title V Permit

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT
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PERMIT NO: S-8282-123-0

LEGAL OWNER OR OPERATOR: VINTAGE PRODUCTION CALIFORNIA LLC
MAILING ADDRESS: 9600 MING AVE, SUITE 300
BAKERSFIELD, CA 93311

LOCATION: LIGHT OIL WESTERN STATIONARY SOURCE
KERN COUNTY, CA

EQUIPMENT DESCRIPTION:
TANK VAPOR CONTROL SYSTEM INCLUDING UP TO TWO 40 MMBTU/HR BEKAERT CEB 1200 VAPOR
DESTRUCTION DEVICES SERVING TANKS S-8282-113, '-114, '-115, '-116, '-117, '-118, '-119, '-120, '-121 AND
SUBJECT TEST WELL(S)

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4 [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
4. 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] Federally Enforceable Through Title V Permit
5. Emission rates from this unit shall not exceed any of the following limits: 0.023 lb-NOx/MMBtu; 0.014 lb-SOx/MMBtu; 0.008 lb-PM10/MMBtu, 0.008 lb-CO/MMBtu; or 0.004 lb-VOC/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit
6. Total heat input of these units shall not exceed 54,750 MMBtu/yr [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director, APCO

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DAVID WARNER, Director of Permit Services

S 8282 123-0 May 30 2013 7:12AM - DAVIDS08 Joint Inspection NOT Required

7. Permittee shall document compliance with the annual heat input limit required by this permit by calculation using the volume of gas combusted at each location and the HHV of the gas. The HHV of the gas shall be determined by sampling and testing at each location of operation within a week of startup at that location. [District Rule 2201] Federally Enforceable Through Title V Permit
8. A flame shall be present at all times when combustible gases are vented. [District Rule 2201] Federally Enforceable Through Title V Permit
9. Prior to operating equipment under this Authority to Construct, permittee shall surrender NOX emission reduction credits for the following quantity of emissions: 1st quarter - 4723 lb, 2nd quarter - 4723 lb, 3rd quarter - 4723 lb, and fourth quarter - 4723 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 4/21/11) for the ERC specified below. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Prior to operating equipment under this Authority to Construct, permittee shall surrender SOX emission reduction credits for the following quantity of emissions. 1st quarter - 1930 lb, 2nd quarter - 1930 lb, 3rd quarter - 1930 lb, and fourth quarter - 1930 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 4/21/11) for the ERC specified below. [District Rule 2201] Federally Enforceable Through Title V Permit
11. Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 821 lb, 2nd quarter - 821 lb, 3rd quarter - 821 lb, and fourth quarter - 821 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 4/21/11) for the ERC specified below. [District Rule 2201] Federally Enforceable Through Title V Permit
12. ERC Certificate Numbers S-2669-4, N-783-2, N-1047-1, and N-1088-5 (or a certificate split from this certificate) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
13. Records of monthly natural gas combusted shall be maintained, retained on-site for a period of at least five years and made available for District inspection upon request. [District Rule 2201] Federally Enforceable Through Title V Permit

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