



San Joaquin Valley

AIR POLLUTION CONTROL DISTRICT



JUN 10 2015

Ms. Ashley Dahlstrom
Chevron USA
PO Box 1392
Bakersfield, CA 93302

**Re: Proposed ATC / Certificate of Conformity (Significant Mod)
District Facility # S-1128
Project # S-1140935**

Dear Ms. Dahlstrom:

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. Chevron proposes to modify two 500 bbl crude oil tanks (Baker style) by increasing the throughput, increasing the TVP, and allowing the tank to operate at various unspecified locations within Chevron's Heavy Oil Western stationary source.

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.

Sayed Sadredin
Executive Director/Air Pollution Control Officer

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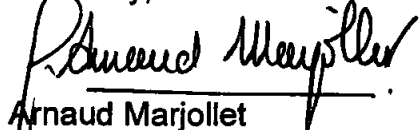
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Ms. Ashley Dahlstrom
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Thank you for your cooperation in this matter.

Sincerely,


Arnaud Marjollet
Director of Permit Services

AM:sd/ya

Enclosures

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

Authority to Construct Application Review

Fixed Roof Oil Field Production Tank < 5000 BBLs

Uncontrolled Emissions Less than 6 tons/year

Heavy Oil, Not Connected to Vapor Control

Facility Name: Chevron USA
Mailing Address: PO Box 1392
Bakersfield, CA 93302
Contact Person: Ashley Dahlstrom
Telephone: (661) 654-7293
Application #(s): S-1128-991-1 and S-1128-992-1
Project #: S-1140935
Deemed Complete: March 6, 2014

Date: May 11, 2015
Engineer: Steve Davidson
Lead Engineer: Dan Klevann

DK 5-20-15

I. Proposal

Chevron USA is applying for Authority to Construct (ATC) permits authorizing the modification of two fixed roof, up to 500 bbl crude oil tanks (Baker style) with a tank pressure relief or pressure/vacuum relief device by increasing the throughput, increasing the TVP, and allowing the tank to operate at the following specified locations within Chevron's Heavy Oil Western stationary source:

- 2F (NW/4 of Sec 2, T12N, R24W)
- 31E (SW/4 of Sec 31, T12N, R23W)
- 26C (SE/4 of Sec 26, T32S, R23E)
- Station 1-09 (SW/4 of Sec 9, T32S, R23E)
- Station 2-22 (SE/4 of Sec 22, T31S, R22E)

Chevron received their Title V Permit on September 5, 2002. This modification can be classified as a Title V minor modification pursuant to Rule 2520, and can be processed with a Certificate of Conformity (COC). Since the facility has specifically requested that this project be processed in that manner, the 45-day EPA comment period will be satisfied prior to the issuance of the Authority to Construct. Chevron 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 2410 prevention of Significant Deterioration (6/16/11)
Rule 2520 Federally Mandated Operating Permits (6/21/01)
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 4623 Storage of Organic Liquids (05/19/05)
CH&SC 41700 Health Risk Assessment
CH&SC 42301.6 School Notice
Public Resources Code 21000-21177: California Environmental Quality Act (CEQA)
California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387: CEQA Guidelines

III. Project Location

The tanks will be allowed to operate at any location within the Kern County Heavy Oil Western stationary source. The location 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 tanks are two fixed roof, transportable, 500 bbl crude oil tanks (Baker style) with a tank pressure relief or pressure/vacuum relief devices. The tanks are used to store crude oil prior to transfer offsite.

V. Equipment Listing

Pre-Project Equipment Description:

S-1128-991-1: UP TO 500 BBL FIXED ROOF CRUDE OIL TANK WITH PV VALVE

S-1128-992-1: UP TO 500 BBL FIXED ROOF CRUDE OIL TANK WITH PV VALVE

Proposed Modification:

S-1128-991-2: MODIFICATION OF UP TO 500 BBL FIXED ROOF CRUDE OIL TANK WITH PV VALVE: INCREASE THROUGHPUT, INCREASE TVP, AND ALLOW TO OPERATE IN VARIOUS SPECIFIED LOCATIONS WITH THE HOW STATIONARY SOURCE

S-1128-992-2: MODIFICATION OF UP TO 500 BBL FIXED ROOF CRUDE OIL TANK WITH PV VALVE: INCREASE THROUGHPUT, INCREASE TVP, AND ALLOW TO OPERATE IN VARIOUS SPECIFIED LOCATIONS WITH THE HOW STATIONARY SOURCE

Post-Project Equipment Description:

S-1128-991-2: UP TO 500 BBL FIXED ROOF CRUDE OIL TANK WITH PV VALVE ALLOWED TO OPERATE

S-1128-992-2: UP TO 500 BBL FIXED ROOF CRUDE OIL TANK WITH PV VALVE ALLOWED TO OPERATE

VI. Emission Control Technology Evaluation

The tanks will be equipped with a pressure-vacuum (PV) relief vent valve set to within 10% of the maximum allowable working pressure of the tank. The PV-valve will reduce VOC wind induced emissions from the tank vent.

VII. Emissions Calculations

A. Assumptions

- Facility will operate 24 hours per day, 7 days per week, and 52 weeks per year.
- The tanks emit only volatile organic compounds (VOCs),
- The tank paint conditions are good, the color is gray, and the shade is medium.
- Tank temperature, 120° F
- VOCs molecular weight, 100 lb/lbmol

Pre-Project:

- Maximum TVP of oil = 0.075 psia (Applicant)
- 40 bbl/day throughput

Post-Project:

- Maximum TVP of oil = 0.49 psia (Applicant)
- 475 bbl/day throughput

B. Emission Factors

Both the daily and annual PE's for each permit unit will be based on the results from the District's Microsoft Excel spreadsheets for Tank Emissions - Fixed Roof Crude Oil less than 26° API located in Attachment B. The spreadsheet for tanks was developed using the equations for fixed-roof tanks from EPA AP-42, Chapter 7.1. (See Attachment B)

C. Calculations

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

Permit Unit	VOC - Daily PE1 (lb/day)	VOC - Annual PE1 (lb/Year)
S-1128-991-1	0.5	178
S-1128-992-1	0.5	178

2. Post Project Potential to Emit, (PE₂)

Permit Unit	VOC - Daily PE2 (lb/day)	VOC - Annual PE2 (lb/Year)
S-1128-991-2	24.4	11,921
S-1128-992-2	24.4	11,921

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

Pursuant to Section 4.9 of District Rule 2201, the pre-project stationary source Potential to Emit (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 that have occurred at the source, and which have not been used on-site

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

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

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

Facility emissions are already above the Offset and Major Source Thresholds for VOC emissions; 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 VOC emissions and will remain a Major Source for VOC. No change in other pollutants are proposed or expected as a result of this project.

Rule 2410 Major Source Determination:

The facility concedes it is an existing major source for PSD for at least one pollutant. Therefore the facility is an existing major source for PSD.

6. Baseline Emissions (BE)

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

Pursuant to District Rule 2201, BE = PE1 for:

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

otherwise,

BE = Historic Actual Emissions (HAE), calculated pursuant to Section 3.22

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

These tanks are equipped with PV valves, which meets the requirements for achieved-in-practice BACT. Therefore, BE=PE1.

7. SB 288 Major Modification

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

Since this facility is a major source, 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	0	50,000	No
SO _x	0	80,000	No
PM ₁₀	0	30,000	No
VOC	23,842	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.

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 existing emissions units, the increase in emissions is calculated as follows.

$$\text{Emission Increase} = \text{PAE} - \text{BAE} - \text{UBC}$$

Where: PAE = Projected Actual Emissions, and
BAE = Baseline Actual Emissions
UBC = Unused baseline capacity

If there is no increase in design capacity or potential to emit, the PAE is equal to the annual emission rate at which the unit is projected to emit in any one year, selected by the operator, within 5 years after the unit resumes normal operation (10 years for existing units with an increase in design capacity or potential to emit). If detailed PAE are not provided, the PAE is equal to the PE2 for each permit unit.

The BAE is calculated based on historical emissions and operating records for any 24 month period, selected by the operator, within the previous 10 year period (5 years for electric utility steam generating units). The BAE must be adjusted to exclude any non-compliant operation emissions and emissions that are no longer allowed due to lower applicable emission limits that were in effect when this application was deemed complete.

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?
VOC*	23,842	0	yes

Since there is an increase in 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 any pollutant regulated under the Clean Air Act, except those for which the District has been classified nonattainment. Only VOC emissions are associated with this project. There are no VOC attainment standards; therefore, this rule does not apply 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 can be calculated as follows:

$$\begin{aligned}
 PE2_{\text{quarterly}} &= PE2_{\text{annual}} + 4 \text{ quarters/year} \\
 &= 11,921 \text{ lb/year} + 4 \text{ qtr/year} \\
 &= 2980 \text{ lb VOC/qtr} \\
 \\
 BE_{\text{quarterly}} &= BE_{\text{annual}} + 4 \text{ quarters/year} \\
 &= 178 \text{ lb/year} + 4 \text{ qtr/year} \\
 &= 44 \text{ lb VOC/qtr}
 \end{aligned}$$

Quarterly NEC [QNEC]			
Permit #	PE2 (lb/qtr)	BE1 (lb/qtr)	QNEC (lb/qtr)
S-1128-991-0	2980	44	2936
S-1128-992-0	2980	44	2936

VIII. Compliance

Rule 2201 New and Modified Stationary Source Review Rule

A. Best Available Control Technology (BACT)

1. BACT Applicability

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

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

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

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

As discussed in Section I above, there are no new emissions units associated with this project. Therefore BACT for new units with PE > 2 lb/day purposes is not triggered.

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

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

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

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

Where,

AIPE = Adjusted Increase in Permitted Emissions, (lb/day)

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

HAPE = Historically Adjusted Potential to Emit, (lb/day)

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

Where,

PE1 = The emissions unit's PE prior to modification or relocation, (lb/day)

EF2 = The emissions unit's permitted emission factor for the pollutant after modification or relocation. If EF2 is greater than EF1 then EF2/EF1 shall be set to 1

EF1 = The emissions unit's permitted emission factor for the pollutant before the modification or relocation

$$\text{AIPE} = \text{PE2} - (\text{PE1} * (\text{EF2} / \text{EF1}))$$

$$\text{EF2} = \text{EF1}$$

$$\begin{aligned}\text{AIPE} &= 24.4 - (0.5 * (1)) \\ &= 23.9 \text{ lb/day}\end{aligned}$$

As demonstrated above, the AIPE is greater than 2.0 lb/day for VOC. Therefore, BACT is 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 is not triggered.

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

triggered for VOC for all emissions units in the project for which there is an emission increase.

2. BACT Guideline

BACT Guideline 7.3.1, applies to the tanks. [Petroleum and Petrochemical Production - Fixed Roof Organic Liquid Storage or Processing Tank, < 5,000 bbl Tank capacity] (See Attachment C)

3. Top-Down BACT Analysis

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

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

VOC: PV-vent set to within 10% of maximum allowable pressure

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 Chevron concedes that the facility exceeds the offset threshold for VOCs.

2. Quantity of Offsets Required

As seen above, the facility is an existing Major Source for VOC and the SSPE2 is greater than the offset thresholds. Therefore, offset calculations will be required for this project.

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

Offsets Required (lb/year) = $(\sum[PE2 - BE] + ICCE) \times DOR$, 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 these units are equal to the PE1 since the unit is a Clean Emissions Unit.

Also, there are no increases in cargo carrier emissions. Therefore, offsets can be determined as follows:

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

For Both Units:

PE2 (VOC) = 11,921 lb/year
BE (VOC) = 178 lb/year
ICCE = 0 lb/year

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

Offsets Required (lb/year) = $([11,921 - 178] + [11,921 - 178] + 0) \times 1.5$
= 35,229 lb VOC/year

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>
8807	8807	8807	8807

The applicant has stated that the facility plans to use ERC certificate S-3722-1 to offset the increases in VOC emissions associated with this project. The above certificate has available quarterly VOC credits as follows:

	<u>1st Quarter</u>	<u>2nd Quarter</u>	<u>3rd Quarter</u>	<u>4th Quarter</u>
ERC #S-3722-1	127,895	129,399	130,902	130,902

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

Proposed Rule 2201 (offset) Conditions (each permit):

- {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 - 4404 lb, 2nd quarter - 4404 lb, 3rd quarter - 4404 lb, and fourth quarter - 4404 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 Number S-3722-1 (or a certificate split from this certificate) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201]

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 Section VII.C.7, this project does not constitute a SB 288 Major Modification; therefore, public noticing for SB 288 Major Modification purposes is not required.

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

b. PE > 100 lb/day

Applications which include a new emissions unit with a PE greater than 100 pounds during any one day for any pollutant will trigger public noticing requirements. There are no new emissions units associated with this project. Therefore, public noticing is not required for this project for PE > 100 lb/day.

c. Offset Threshold

The facility is above the offset threshold before and after 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	Project PE2 (lb/year)	Project PE1 (lb/year)	SSIPE (lb/year)	SSIPE Public Notice Threshold	Public Notice Required?
VOC	23,842	356	23,486	20,000 lb/year	No

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

2. Public Notice Action

As discussed above, public noticing is required for this project for Federal Major Modification and the SSIPE exceeding 20,000 lb-VOC/year. 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 Emissions Limits (DEL)

Daily Emissions Limitations (DELs) and other enforceable conditions are required by Section 3.15 to restrict a unit's maximum daily emissions, to a level at or below the emissions associated with the maximum design capacity. Per Sections 3.15.1 and 3.15.2, the DEL must be contained in the latest ATC and contained in or enforced by the latest PTO and enforceable, in a practicable manner, on a daily basis. DELs are also required to enforce the applicability of BACT.

DELs for the emission units in this project will be included on the ATCs in the form of tanks' throughput and the tank contents' maximum true vapor pressure (TVP). The permittee will be required to maintain accurate records of tank content TVP and tanks monthly average daily throughput to validate the DEL.

E. Compliance Assurance

The following measures shall be taken to ensure continued compliance with District Rules:

1. Source Testing

The permittee will be required to perform periodic TVP testing for all tanks in this project using the latest EPA and CARB approved version of the Lawrence Berkeley National Laboratory "Test Method for Vapor Pressure of Reactive Organic Compounds in Heavy Crude Oil Using Gas Chromatograph" to validate non-applicability of Rule 4623. The testing shall be conducted once every 24 month period or every time when the source of liquid stored is changed.

2. Monitoring

Monitoring is not required.

3. Record Keeping

Record keeping is required to demonstrate compliance with the offset, public notification and daily emission limit requirements of Rule 2201. The following conditions will appear on the permits:

- Permittee shall maintain monthly records of average daily crude oil throughput and shall keep accurate records of each organic liquid stored in the tank, including its storage temperature, TVP, and API gravity. [District Rule 2201] N
- All records required to be maintained by this permit shall be maintained for a period of at least five years and shall be made readily available for District inspection upon request. [District Rule 2201] N

4. Reporting

No reporting is required to demonstrate compliance with Rule 2201.

F. Ambient Air Quality Analysis

Section 4.14.1 of this Rule requires that an ambient air quality analysis (AAQA) be conducted for the purpose of determining whether a new or modified Stationary Source will cause or make worse a violation of an air quality standard. However, since VOCs are the only criteria pollutant associated with the project and VOCs are not evaluated in an AAQA, no further review was performed for the Ambient Air Quality Analysis.

G. Compliance Certification

Section 4.15.2 of this Rule requires the owner of a new Major Source or a source undergoing a Title I Modification to demonstrate to the satisfaction of the District that all other Major Sources owned by such person and operating in California are in compliance or are on a schedule for compliance with all applicable emission limitations and standards. As discussed in Sections VIII-Rule 2201-C.1.a and VIII-Rule 2201-C.1.b, this facility is a new major source and this project does constitute a Title I modification, therefore this requirement is

applicable. Included in Attachment F is Chevron's compliance certification.

H. Alternate Siting Analysis

The current project occurs at an existing facility. The applicant proposes to operate portable tanks at various specified locations with the Heavy Oil Western stationary source.

Since the project will provide oil storage and processing at the locations Chevron USA currently operates, the existing site will result in the least possible impact from the project. Alternative sites would involve the relocation and/or construction of various support structures on a much greater scale, and would therefore result in a much greater impact.

Rule 2520 Federally Mandated Operating Permits

This facility is subject to this Rule, and has received their Title V Operating Permit. A significant permit modification is defined as a "permit amendment that does not qualify as a minor permit modification or administrative amendment." This project is a Federal Major Modification; therefore, it is a significant modification.

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. 40 CFR Part 60, Subparts, K, Ka, Kb, and OOOO and could potentially apply to the storage tanks located at this facility.

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.

40 CFR Part 60, Subpart OOOO—Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution

(constructed, reconstructed, or modified after 8/23/11) applies to single storage vessel, located in the oil and natural gas production segment, natural gas processing segment or natural gas transmission and storage segment. The subject tanks are subject to this subpart. However, Subpart OOOO has no standards for tanks with annual VOC emissions less than 6 tons per year. Therefore, the subject tanks are not an affected facility and subpart OOOO does not apply.

Therefore, the requirements of this subpart 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 - Public Nuisance

Rule 4102 states that no air contaminant shall be released into the atmosphere which causes a public nuisance. Compliance 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 (**Attachment 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 health risk for this project is shown below:

RMR Summary				
Categories	Oil Tank (991-2)	Oil Tank (992-2)	Project Totals	Stationary Source Facility Totals
Prioritization Score	NA ¹	NA ¹	>1	>1
Acute Hazard Index	7.73E-03	7.71E-03	1.54E-02	0.80
Chronic Hazard Index	2.19E-04	2.19E-04	4.38E-04	0.03
Maximum Individual Cancer Risk (10 ⁻⁶)	1.99E-08	1.99E-08	3.98E-08	6.27
T-BACT Required?	No	No		
Special Permit Conditions?	No	No		

¹Prioritization for this unit was not conducted since the total facility prioritization score is greater than 1, and therefore requires a refined risk analysis.

Discussion of T-BACT

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

Rule 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.

According to Section 4.4, tanks exclusively receiving and or storing organic liquids with a TVP less than 0.5 psia are exempt from this Rule except for complying with Sections 6.2, 6.3.6, 6.4 and 7.2. Therefore, the following condition shall be placed on the ATC:

{2480} This tank shall only store, place, or hold organic liquid with a true vapor pressure (TVP) of less than 0.49psia under all storage conditions. [District Rules 2201 and 4623] N

{Modified 2910} Permittee shall conduct true vapor pressure (TVP) testing of the organic liquid stored in this tank at least once every 24 months during summer (July - September), and/or whenever there is a

change in the source or type of organic liquid stored in this tank in order to maintain exemption from the rule. [District Rule 2201 and 4623] N

{Modified 2911} The TVP testing shall be conducted at actual storage temperature of the organic liquid in the tank. [District Rule 4623]

{Modified 2483} For crude oil with an API gravity of 26 degrees or less, the TVP shall be determined using the latest version of the Lawrence Berkeley National Laboratory "Test Method for Vapor pressure of Reactive Organic Compounds in Heavy Crude Oil Using Gas Chromatograph", as approved by ARB and EPA. [District Rules 2201 and 4623] N

{Modified 2482} The API gravity of crude oil or petroleum distillate shall be determined by using ASTM Method D 287 e1 "Standard Test Method for API Gravity of Crude Petroleum and Petroleum Products (Hydrometer Method). Sampling for API gravity shall be performed in accordance with ASTM Method D 4057 "Standard Practices for Manual Sampling of Petroleum and Petroleum Products." [District Rules 2201 and 4623] N

{Modified 2912} Permittee shall submit the records of TVP and API gravity testing to the APCO within 45 days after the date of testing. The records shall include the tank identification number, Permit to Operate number, type of stored organic liquid, TVP and API gravity of the organic liquid, test methods used, and a copy of the test results. [District Rules 2201 and 462] N

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.

The tanks are equipped with a PV-vent set to within 10% of maximum allowable pressure satisfies the Best Performance Standards (BPS) for Front-line Organic Liquid Storage Tanks, Fixed Roof Tanks < 5,000 bbl. The District therefore concludes that the project would have a less than cumulatively significant impact on global climate change and no other discussion for greenhouse gas emissions is 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 Construct S-1128-991-2 and '1-992-2 subject to the permit conditions on the attached draft Authority to Construct.

X. Billing Information

Permit Number	Fee Schedule	Fee Description	Annual Fee
S-1128-991-2	3020-05-C	500 BBLs	\$135
S-1128-992-2	3020-05-C	500 BBLs	\$135

Attachment A: Existing Permits
Attachment B: Emissions Calculations
Attachment C: BACT Guideline
Attachment D: Top-Down BACT Analysis
Attachment E: Health Risk Assessment
Attachment F: Compliance Certifications
Attachment G: Draft ATC(s) & Emissions Profiles

**Attachment A:
Existing Permits**

San Joaquin Valley Air Pollution Control District

PERMIT UNIT: S-1128-991-1

EXPIRATION DATE: 02/29/2016

SECTION: 21 **TOWNSHIP:** 32S **RANGE:** 23E

EQUIPMENT DESCRIPTION:

UP TO 500 BBL FIXED ROOF CRUDE OIL TANK WITH PV VALVE

PERMIT UNIT REQUIREMENTS

1. This tank shall only store, place, or hold organic liquid with a true vapor pressure (TVP) of less than 0.075 psia under all storage conditions. [District Rules 2201 and 4623] Federally Enforceable Through Title V Permit
2. Crude oil throughput shall not exceed 40 barrels per day based on a monthly average. [District Rule 2201] Federally Enforceable Through Title V Permit
3. VOC emission rate from the tank shall not exceed 0.5 lb/day [District Rule 2201] Federally Enforceable Through Title V Permit
4. The tank shall be equipped with a fixed roof with no holes or openings. [District Rule 2201] Federally Enforceable Through Title V Permit
5. This tank shall be equipped with a pressure-vacuum (PV) relief valve set to within 10% of the maximum allowable working pressure of the tank, permanently labeled with the operating pressure settings, and properly maintained in good operating order in accordance with the manufacturer's instructions. [District Rule 2201] Federally Enforceable Through Title V Permit
6. Permittee shall conduct true vapor pressure (TVP) testing of the organic liquid stored in this tank at least once every 24 months during summer (July - September), and/or whenever there is a change in the source or type of organic liquid stored in this tank in order to maintain exemption from the rule. [District Rule 2201 and 4623] Federally Enforceable Through Title V Permit
7. The TVP testing shall be conducted at actual storage temperature of the organic liquid in the tank. [District Rule 4623] Federally Enforceable Through Title V Permit
8. For crude oil with an API gravity of 26 degrees or less, the TVP shall be determined using the latest version of the Lawrence Berkeley National Laboratory "Test Method for Vapor pressure of Reactive Organic Compounds in Heavy Crude Oil Using Gas Chromatograph", as approved by ARB and EPA. [District Rules 2201 and 4623] Federally Enforceable Through Title V Permit
9. Permittee shall maintain monthly records of average daily crude oil throughput and shall keep accurate records of each organic liquid stored in the tank, including its storage temperature and TVP. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Permittee shall submit the records of TVP testing to the APCO within 45 days after the date of testing. The records shall include the tank identification number, Permit to Operate number, type of stored organic liquid, TVP of the organic liquid, test methods used, and a copy of the test results [District Rules 2201 and 4623] Federally Enforceable Through Title V Permit
11. All records required to be maintained by this permit shall be maintained for a period of at least five years and shall be made readily available for District inspection upon request. [District Rule 1070]

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

San Joaquin Valley Air Pollution Control District

PERMIT UNIT: S-1128-992-1

EXPIRATION DATE: 02/29/2016

SECTION: 21 **TOWNSHIP:** 32S **RANGE:** 23E

EQUIPMENT DESCRIPTION:

UP TO 500 BBL FIXED ROOF CRUDE OIL TANK WITH PV VALVE

PERMIT UNIT REQUIREMENTS

1. This tank shall only store, place, or hold organic liquid with a true vapor pressure (TVP) of less than 0.075 psia under all storage conditions. [District Rules 2201 and 4623] Federally Enforceable Through Title V Permit
2. Crude oil throughput shall not exceed 40 barrels per day based on a monthly average. [District Rule 2201] Federally Enforceable Through Title V Permit
3. VOC emission rate from the tank shall not exceed 0.5 lb/day [District Rule 2201] Federally Enforceable Through Title V Permit
4. The tank shall be equipped with a fixed roof with no holes or openings. [District Rule 2201] Federally Enforceable Through Title V Permit
5. This tank shall be equipped with a pressure-vacuum (PV) relief valve set to within 10% of the maximum allowable working pressure of the tank, permanently labeled with the operating pressure settings, and properly maintained in good operating order in accordance with the manufacturer's instructions. [District Rule 2201] Federally Enforceable Through Title V Permit
6. Permittee shall conduct true vapor pressure (TVP) testing of the organic liquid stored in this tank at least once every 24 months during summer (July - September), and/or whenever there is a change in the source or type of organic liquid stored in this tank in order to maintain exemption from the rule. [District Rule 2201 and 4623] Federally Enforceable Through Title V Permit
7. The TVP testing shall be conducted at actual storage temperature of the organic liquid in the tank. [District Rule 4623] Federally Enforceable Through Title V Permit
8. For crude oil with an API gravity of 26 degrees or less, the TVP shall be determined using the latest version of the Lawrence Berkeley National Laboratory "Test Method for Vapor pressure of Reactive Organic Compounds in Heavy Crude Oil Using Gas Chromatograph", as approved by ARB and EPA. [District Rules 2201 and 4623] Federally Enforceable Through Title V Permit
9. Permittee shall maintain monthly records of average daily crude oil throughput and shall keep accurate records of each organic liquid stored in the tank, including its storage temperature and TVP. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Permittee shall submit the records of TVP testing to the APCO within 45 days after the date of testing. The records shall include the tank identification number, Permit to Operate number, type of stored organic liquid, TVP of the organic liquid, test methods used, and a copy of the test results [District Rules 2201 and 4623] Federally Enforceable Through Title V Permit
11. All records required to be maintained by this permit shall be maintained for a period of at least five years and shall be made readily available for District inspection upon request. [District Rule 1070]

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

Facility Name: CHEVRON USA INC
Location: HEAVY OIL WESTERN STATIONARY SOURCE, KERN COUNTY
S-1128-992-1 May 11 2015 9:06AM -- DAVIDSOS

**Attachment B:
Emissions Calculations**

Tank Input Data	
permit number (S-xxxx-xx-xx)	Pre-Project
facility tank I.D.	1128
nearest city {1: Bakersfield, 2: Fresno, 3: Stockton}	1
tank ROC vapor pressure (psia)	0.075
liquid bulk storage temperature, Tb (°F)	100
is this a constant-level tank? {yes, no}	no
will flashing losses occur in this tank (only if first-line tank)? {yes, no}	yes
breather vent pressure setting range (psi)	0.06
diameter of tank (feet)	18
capacity of tank (bbl)	500
conical or dome roof? {c, d}	c
shell height of tank (feet)	11
average liquid height (feet)	9
are the roof and shell the same color? {yes,no}	yes
For roof:	
color {1:Spec Al, 2:Diff Al, 3:Light, 4:Med, 5:Red, 6:White}	4
condition {1: Good, 2: Poor}	1
-----This row only used if shell is different color from roof-----	3
-----This row only used if shell is different color from roof-----	1

Liquid Input Data	A	B
maximum daily fluid throughput (bbl)		40
maximum annual fluid throughput (bbl)		14,600
maximum daily oil throughput (bbl)(used to calculate flashing loss)		40
maximum annual oil throughput (bbl)(used to calculate flashing loss)	14600	14,600
molecular weight, Mw (lb/lb-mol)		100

Calculated Values	A	B
daily maximum ambient temperature, T _{ax} (°F)		77.65
daily minimum ambient temperature, T _{an} (°F)		53.15
daily total solar insulation factor, I (Btu/ft ² -day)		1648.9
atmospheric pressure, P _a (psia)		14.47
water vapor pressure at daily maximum liquid surface temperature (T _{lx}), P _{vx} (psia)	99.0	0.9259
water vapor pressure at daily minimum liquid surface temperature (T _{ln}), P _{vn} (psia)	88.2	0.6653
water vapor pressure at average liquid surface temperature (T _{la}), P _{va} (psia)	93.6	0.7903
roof outage, H _{ro} (feet)		0.1875
vapor space volume, V _v (cubic feet)		556.65
paint factor, alpha		0.68
vapor density, W _v (lb/cubic foot)		0.0013
daily vapor temperature range, delta T _v (degrees Rankine)		49.04
vapor space expansion factor, K _e		0.1032

Results	lb/year	lb/day
Standing Storage Loss	26	0.07
Working Loss	110	0.30
Flashing Loss	42	0.11

Total Uncontrolled Tank VOC Emissions	178	0.5
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Summary Table	
Permit Number	Pre-Project
Facility Tank I.D.	1128
Tank capacity (bbl)	500
Tank diameter (ft)	18
Tank shell height (ft)	11
Conical or Dome Roof	Conical
Maximum Daily Fluid Throughput (bbl/day)	40
Maximum Annual Fluid Throughput (bbl/year)	14,600
Maximum Daily Oil Throughput (bbl/day)	40
Maximum Annual Oil Throughput (bbl/year)	14,600
Total Uncontrolled Daily Tank VOC Emissions (lb/day)	0.5
Total Uncontrolled Annual Tank VOC Emissions (lb/year)	178

Tank Input Data	
permit number (S-xxxx-xx-xx)	Post-Project
facility tank I.D.	1128
nearest city (1: Bakersfield, 2: Fresno, 3: Stockton)	1
tank ROC vapor pressure (psia)	0.49
liquid bulk storage temperature, T_b (°F)	100
is this a constant-level tank? {yes, no}	no
will flashing losses occur in this tank (only if first-line tank)? {yes, no}	yes
breather vent pressure setting range (psi)	0.06
diameter of tank (feet)	18
capacity of tank (bbt)	500
conical or dome roof? {c, d}	c
shell height of tank (feet)	11
average liquid height (feet)	9
are the roof and shell the same color? {yes,no}	yes
For roof:	
color {1:Spec Al, 2:Diff Al, 3:Light, 4:Med, 5:Red, 6:White}	4
condition {1: Good, 2: Poor}	1
-----This row only used if shell is different color from roof-----	3
-----This row only used if shell is different color from roof-----	1

Liquid Input Data	A	B
maximum daily fluid throughput (bbt)		475
maximum annual fluid throughput (bbt)		173,375
maximum daily oil throughput (bbt)(used to calculate flashing loss)		36
maximum annual oil throughput (bbt)(used to calculate flashing loss)	173375	173,375
molecular weight, M_w (lb/lb-mol)		100

Calculated Values	A	B
daily maximum ambient temperature, T_{ax} (°F)		77.65
daily minimum ambient temperature, T_{an} (°F)		53.15
daily total solar insulation factor, I (Btu/ft ² -day)		1648.9
atmospheric pressure, P_a (psia)		14.47
water vapor pressure at daily maximum liquid surface temperature (T_{lx}), P_{vx} (psia)	99.0	0.9259
water vapor pressure at daily minimum liquid surface temperature (T_{ln}), P_{vn} (psia)	88.2	0.6653
water vapor pressure at average liquid surface temperature (T_{la}), P_{va} (psia)	93.6	0.7903
roof outage, H_{ro} (feet)		0.1875
vapor space volume, V_v (cubic feet)		556.65
paint factor, α		0.68
vapor density, W_v (lb/cubic foot)		0.0082
daily vapor temperature range, ΔT_v (degrees Rankine)		49.04
vapor space expansion factor, K_e		0.1032

Results	lb/year	lb/day
Standing Storage Loss	173	0.47
Working Loss	8,495	23.28
Flashing Loss	3,253	0.88

Total Uncontrolled Tank VOC Emissions	11,921	24.4
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Summary Table	
Permit Number	Post-Project
Facility Tank I.D.	1128
Tank capacity (bbl)	500
Tank diameter (ft)	18
Tank shell height (ft)	11
Conical or Dome Roof	Conical
Maximum Daily Fluid Throughput (bbl/day)	475
Maximum Annual Fluid Throughput (bbl/year)	173,375
Maximum Daily Oil Throughput (bbl/day)	36
Maximum Annual Oil Throughput (bbl/year)	173,375
Total Uncontrolled Daily Tank VOC Emissions (lb/day)	24.4
Total Uncontrolled Annual Tank VOC Emissions (lb/year)	11,921

**Attachment C:
BACT Guideline**

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

Best Available Control Technology (BACT) Guideline 7.3.1*

Last Update 10/1/2002

**Petroleum and Petrochemical Production - Fixed Roof Organic
Liquid Storage or Processing Tank, < 5,000 bbl Tank capacity ****

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC	PV-vent set to within 10% of maximum allowable pressure	99% control (Waste gas incinerated in steam generator, heater treater, or other fired equipment and inspection and maintenance program; transfer of noncondensable vapors to gas pipeline; reinjection to formation (if appropriate wells are available); or equal).	

** Converted from Determinations 7.1.11 (10/01/02).

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**

**Attachment D:
Top-Down BACT
Analysis**

Top Down BACT Analysis

VOC emissions may occur when the produced fluids from the crude oil production wells enter the oil storage tanks.

Step 1 - Identify All Possible Control Technologies

BACT Guideline 7.3.1 lists the controls that are considered potentially applicable to fixed-roof organic liquid storage or processing tank <5,000 bbl tank capacity. The VOC control measures are summarized below.

Technologically feasible:

99% control (waste gas incinerated in steam generator, heater treater, or other fired equipment and inspection and maintenance program; transfer of uncondensed vapors to gas pipeline or reinjection to formation (if appropriate wells are available).

Achieved in Practice:

PV relief valve set to within 10% of maximum allowable pressure.

Step 2 - Eliminate Technologically Infeasible Options

All of the above identified control options are technologically feasible.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

1. 99% control (waste gas incinerated in steam generator, heater treater, or other fired equipment and inspection and maintenance program; transfer of uncondensed vapors to gas pipeline or reinjection to formation (if appropriate wells are available).
2. PV relief valve set to within 10% of maximum allowable pressure.

Step 4 - Cost Effectiveness Analysis

The capital cost for a vapor control system to address the technologically feasible control option is \$1,889,000

The annualized capital cost is

$AP = (P) \{[(i) (1 + i)^n]/[(1 + i)^n - 1]\}$, where
AP = Equivalent Annual Capital Cost of Control Equip.
P = Present value of the control equipment, including installation cost.
\$51,000
i = interest rate (use 10% per policy)
n = equipment life (assume 10 years per policy)

$$AP = (P) \{[(0.1) (1 + 0.1)^{10}]/[(1 + 0.1)^{10} - 1]\}$$
$$AP = (P) \times (0.16274) = (\$1,889,000) (0.1627) = \$307,340/\text{year}$$

For calculation of the amount of VOCs removed from each tank (emissions unit) with the vapor control system, 100% control is assumed. The VOCs removed annually are

$$\text{Tons/yr} = 11,921 \text{ lb/yr}/2000 \text{ lb/ton} = 6.0 \text{ tons/yr}$$

$$\begin{aligned} \text{Annualized cost} &= \$307,340/\text{yr}/6.0 \text{ tons/yr} \\ &= \$51,223/\text{ton} \end{aligned}$$

This exceeds the cost effectiveness threshold for VOCs of \$5000/ton. Therefore the vapor control system is not cost effective.

Step 5 - Select BACT

PV relief valve set to within 10% of maximum allowable pressure of the tank

**Attachment E:
Health Risk Assessment
San Joaquin Valley Air Pollution Control District
Risk Management Review**

To: Steve Davidson– Permit Services
From: Kou Thao – Technical Services
Date: 4-22-15
Facility Name: Kou Thao
Location: 2F (NW/4 of Sec 2, T12N, R24W)
31E (SW/4 of Sec 31, T12N, R23W)
26C (SE/4 of Sec 26, T32S, R23E)
Station 1-09 (SW/4 of Sec 9, T32S, R23E)
Station 2-22 (SE/4 of Sec 22, T31S, R22E)
Application #(s): S-1128- 991-2 & 992-2
Project #: S-1140935

A. RMR SUMMARY

RMR Summary				
Categories	Oil Tank (991-2)	Oil Tank (992-2)	Project Totals	Stationary Source Facility Totals
Prioritization Score	NA ¹	NA ¹	>1	>1
Acute Hazard Index	7.73E-03	7.71E-03	1.54E-02	0.80
Chronic Hazard Index	2.19E-04	2.19E-04	4.38E-04	0.03
Maximum Individual	1.99E-08	1.99E-08	3.98E-08	6.27

Cancer Risk (10 ⁻⁶)				
T-BACT Required?	No	No		
Special Permit Conditions?	No	No		

*Prioritization for this unit was not conducted since the total facility prioritization score is greater than 1, and therefore requires a refined risk analysis.

1. Proposed Permit Conditions

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

Units # 991-2 & 992-2

1. No special permit condition required.

B. RMR REPORT

I. Project Description

Technical Services received a request to perform a Risk Management Review for a proposed modification to two existing 500 bbl oil field tanks. The modification consist of approving each of these units to operate at other Chevron facilities that include the following locations: 2F (NW/4 of Sec 2, T12N, R24W), 31E (SW/4 of Sec 31, T12N, R23W), 26C (SE/4 of Sec 26, T32S, R23E), Station 1-09 (SW/4 of Sec 9, T32S, R23E), and Station 2-22 (SE/4 of Sec 22, T31S, R22E).

II. Analysis

Since the total facility prioritization score was greater than one, a refined health risk assessment was required. Therefore prioritization for each unit was not performed. Toxic emissions for these tanks were calculated using District approved emission factors for Oil field fugitive VOC emissions. The AERMOD model was used, with the parameters outlined below and meteorological data for 2004-2008 from Fellow, CA 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 Each Permit Unit 991-2 & 992-2			
Source Type	Circular Area	Location Type	Rural
Tank Height (m)	3.35	Closest Receptor (m)	1700
Tank Diameter (m)	2.74	Type of Receptor	Business
VOC Emissions	1.34 lb/hr	Max Hours per Year	8760
	11,742 lb/yr		

An Ambient Air Quality Analysis was not performed for this project due to VOC emissions being the only emissions from each tank. Therefore, an AAQA was not required.

III. Conclusion

The acute and chronic indices are below 1.0 and the cancer risk factor associated with the project is less than 1.0 in a million. **In accordance with the District's Risk Management Policy, the project is approved without Toxic Best Available Control Technology (T-BACT).**

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.

- 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 F:
Compliance Certification**

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

TITLE V MODIFICATION - COMPLIANCE CERTIFICATION FORM

I. TYPE OF PERMIT ACTION (Check appropriate box)

☐ SIGNIFICANT PERMIT MODIFICATION
☒ MINOR PERMIT MODIFICATION


☐ ADMINISTRATIVE
AMENDMENT

COMPANY NAME: CHEVRON U.S.A. INC.		FACILITY ID: S-1128
1. Type of Organization: <input checked="" type="checkbox"/> Corporation <input type="checkbox"/> Sole Ownership <input type="checkbox"/> Government <input type="checkbox"/> Partnership <input type="checkbox"/> Utility		
2. Owner's Name: CHEVRON U.S.A. INC.		
3. Agent to the Owner: N/A		

II. COMPLIANCE CERTIFICATION (Read each statement carefully and initial all circles for confirmation):

- ☒ Based on information and belief formed after reasonable inquiry, the equipment identified in this application will continue to comply with the applicable federal requirement(s).
- ☒ Based on information and belief formed after reasonable inquiry, the equipment identified in this application will comply with applicable federal requirement(s) that will become effective during the permit term, on a timely basis.
- ☒ Corrected information will be provided to the District when I become aware that incorrect or incomplete information has been submitted.
- ☒ Based on information and belief formed after reasonable inquiry, information and statements in the submitted application package, including all accompanying reports, and required certifications are true accurate and complete.

I declare, under penalty of perjury under the laws of the state of California, that the foregoing is correct and true:



Signature of Responsible Official

3/10/2014

Date

Hernan Andonegui

Name of Responsible Official (please print)

Operations Supervisor

Title of Responsible Official (please print)

Attachment G:
Draft ATC(s) & Emissions Profiles

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: S-1128-991-2

LEGAL OWNER OR OPERATOR: CHEVRON USA INC
MAILING ADDRESS: P O BOX 1392
BAKERSFIELD, CA 93302

LOCATION: HEAVY OIL WESTERN STATIONARY SOURCE
KERN COUNTY

SECTION: 21 TOWNSHIP: 32S RANGE: 23E

EQUIPMENT DESCRIPTION:

MODIFICATION OF UP TO 500 BBL FIXED ROOF CRUDE OIL TANK WITH PV VALVE: INCREASE THROUGHPUT, INCREASE TVP, AND ALLOW TO OPERATE IN VARIOUS SPECIFIED LOCATIONS WITH THE HOW STATIONARY SOURCE

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 4404 lb, 2nd quarter - 4404 lb, 3rd quarter - 4404 lb, and fourth quarter - 4404 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
4. ERC Certificate Number S-3722-1 (or a certificate split from this certificate) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director, APCO

Arnaud Marjolle, Director of Permit Services

S-1128-991-2; May 20 2016 11:16AM - DAVIDSOB : Joint Inspection NOT Required

5. This tank is permitted to operate at the following locations: 2F (NW/4 of Sec 2, T12N, R24W) 31E (SW/4 of Sec 31, T12N, R23W) 26C (SE/4 of Sec 26, T32S, R23E) Station 1-09 (SW/4 of Sec 9, T32S, R23E) Station 2-22 (SE/4 of Sec 22, T31S, R22E). [District Rules 2201 and 4102] Federally Enforceable Through Title V Permit
6. The permittee shall notify the District Compliance Division 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 2080]
7. This tank shall only store, place, or hold organic liquid with a true vapor pressure (TVP) of less than 0.49 psia under all storage conditions. [District Rules 2201 and 4623] Federally Enforceable Through Title V Permit
8. Crude oil throughput shall not exceed 475 barrels per day based on a monthly average. [District Rule 2201] Federally Enforceable Through Title V Permit
9. VOC emission rate from the tank shall not exceed 24.4 lb/day [District Rule 2201] Federally Enforceable Through Title V Permit
10. The tank shall be equipped with a fixed roof with no holes or openings. [District Rule 2201] Federally Enforceable Through Title V Permit
11. This tank shall be equipped with a pressure-vacuum (PV) relief valve set to within 10% of the maximum allowable working pressure of the tank, permanently labeled with the operating pressure settings, and properly maintained in good operating order in accordance with the manufacturer's instructions. [District Rule 2201] Federally Enforceable Through Title V Permit
12. Permittee shall conduct true vapor pressure (TVP) testing of the organic liquid stored in this tank at least once every 24 months during summer (July - September), and/or whenever there is a change in the source or type of organic liquid stored in this tank in order to maintain exemption from the rule. [District Rule 2201 and 4623] Federally Enforceable Through Title V Permit
13. The TVP testing shall be conducted at actual storage temperature of the organic liquid in the tank. [District Rule 4623] Federally Enforceable Through Title V Permit
14. For crude oil with an API gravity of 26 degrees or less, the TVP shall be determined using the latest version of the Lawrence Berkeley National Laboratory "Test Method for Vapor pressure of Reactive Organic Compounds in Heavy Crude Oil Using Gas Chromatograph", as approved by ARB and EPA. [District Rules 2201 and 4623] Federally Enforceable Through Title V Permit
15. The API gravity of crude oil or petroleum distillate shall be determined by using ASTM Method D 287 e1 "Standard Test Method for API Gravity of Crude Petroleum and Petroleum Products (Hydrometer Method). Sampling for API gravity shall be performed in accordance with ASTM Method D 4057 "Standard Practices for Manual Sampling of Petroleum and Petroleum Products." [District Rules 2201 and 4623]
16. Permittee shall maintain monthly records of average daily crude oil throughput and shall keep accurate records of each organic liquid stored in the tank, including its storage temperature and TVP. [District Rule 2201] Federally Enforceable Through Title V Permit
17. Permittee shall submit the records of TVP testing to the APCO within 45 days after the date of testing. The records shall include the tank identification number, Permit to Operate number, type of stored organic liquid, TVP of the organic liquid, test methods used, and a copy of the test results [District Rules 2201 and 4623] Federally Enforceable Through Title V Permit
18. All records required to be maintained by this permit shall be maintained for a period of at least five years and shall be made readily available for District inspection upon request. [District Rule 1070]

DRAFT

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: S-1128-992-2

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MAILING ADDRESS: P O BOX 1392
BAKERSFIELD, CA 93302

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KERN COUNTY

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Seyed Sadredin, Executive Director, APCD

Arnaud Marjollet, Director of Permit Services

S-1128-992-2: May 20 2016 11:10AM - DAVIDSOS : Joint Inspection NOT Required

5. This tank is permitted to operate at the following locations: 2F (NW/4 of Sec 2, T12N, R24W) 31E (SW/4 of Sec 31, T12N, R23W) 26C (SE/4 of Sec 26, T32S, R23E) Station 1-09 (SW/4 of Sec 9, T32S, R23E) Station 2-22 (SE/4 of Sec 22, T31S, R22E). [District Rules 2201 and 4102] Federally Enforceable Through Title V Permit
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DRAFT

Permit #: S-1128-991-2	Last Updated
Facility: CHEVRON USA INC	05/20/2015 DAVIDSOS

Equipment Pre-Baselined: NO

	<u>NOX</u>	<u>SOX</u>	<u>PM10</u>	<u>CO</u>	<u>VOC</u>
Potential to Emit (lb/Yr):	0.0	0.0	0.0	0.0	11921.0
Daily Emis. Limit (lb/Day)	0.0	0.0	0.0	0.0	24.4
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	0.0	0.0	0.0	0.0	2936.0
Q2:	0.0	0.0	0.0	0.0	2936.0
Q3:	0.0	0.0	0.0	0.0	2936.0
Q4:	0.0	0.0	0.0	0.0	2936.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					1.5
Quarterly Offset Amounts (lb/Qtr)					
Q1:					4404.0
Q2:					4404.0
Q3:					4404.0
Q4:					4404.0

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	<u>NOX</u>	<u>SOX</u>	<u>PM10</u>	<u>CO</u>	<u>VOC</u>
Potential to Emit (lb/Yr):	0.0	0.0	0.0	0.0	11921.0
Daily Emis. Limit (lb/Day)	0.0	0.0	0.0	0.0	24.4
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	0.0	0.0	0.0	0.0	2938.0
Q2:	0.0	0.0	0.0	0.0	2938.0
Q3:	0.0	0.0	0.0	0.0	2938.0
Q4:	0.0	0.0	0.0	0.0	2938.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					1.5
Quarterly Offset Amounts (lb/Qtr)					
Q1:					4404.0
Q2:					4404.0
Q3:					4404.0
Q4:					4404.0