



MAR 10 2020

Mr. Jason Goklaney
Sentinel Peak Resources California, LLC
1200 Discovery Drive, Suite 100
Bakersfield, CA 93309

Re: Proposed ATC / Certificate of Conformity (Significant Mod)
Facility Number: S-1372
Project Number: S-1200016

Dear Mr. Goklaney

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. The modification authorizes installation of vapor control on three tanks and installing two tanks.

The notice of preliminary decision for this project has been posted on the District's website (www.valleyair.org). After addressing all comments made during the 30-day public notice and the 45-day EPA comment periods, the District intends to issue the 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.

Samir Sheikh

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Thank you for your cooperation in this matter.

Sincerely,



Arnaud Marjollet
Director of Permit Services

Enclosures

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

Authority to Construct Application Review

Fixed Roof Oil Field Production Tanks

Facility Name: Sentinel Peak Resources California, LLC Date: February 10, 2020

Mailing Address: 1200 Discovery Drive, Suite 100 Bakersfield, CA 93309 Engineer: Steve Davidson
Lead Engineer: Richard Karrs

Contact Person: Jason Goklaney
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Application #(s): S-1372-100-36, '-220-4, '-221-4, '-416-2, '-441-0, and '-442-0

Project #: S-1200016

I. Proposal

Sentinel Peak Resources is applying for Authorities to Construct (ATC) permits for the installation of the following:

- Install shared vapor recovery system listed on tank S-1372-220-4 and serving existing tanks S-1372-220-4, '-221-4, '-416-2, and new tank S-1372-441-0
- Connecting the new shared vapor recovery system listed on tank S-1372-220-4 to the casing collection system listed on permit S-1372-100-36
- Increase the capacity of tank S-1372-221-4 to 2000 BBLs
- Install 5000 BBL fixed roof crude oil storage/clarifier tank served by the vapor control system listed on permit S-1372-220-4
- Install new 500 BBL fixed roof crude oil drain tank with PVRV

The vapor control system serving tanks S-1372-220-4, '-221-4, '-416-2, and '-441-0 is required in order to satisfy CARB's Greenhouse Gas Emission Standards for Crude Oil and Natural Gas Facilities (CARB Methane Rule).

Sentinel Peak Resources has a Title V Permit. This modification can be classified as a Title V minor modification pursuant to Rule 2520, Section 3.20, 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. Sentinel Peak Resources must apply to administratively amend their Title V Operating Permit to include the requirements of the ATC(s) issued with this project.

II. Applicable Rules

- Rule 2201 New and Modified Stationary Source Review Rule (8/15/19)
- Rule 2410 Prevention of Significant Deterioration (Adopted 6/16/11, effective 11/26/12)
- Rule 2520 Federally Mandated Operating Permits (8/15/19)
- 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)
- 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
- California Code of Regulations, Title 17, Division 3, Chapter 1, Subchapter 10, Article 4 Sections 95665-95677: Greenhouse Gas Emission Standards for Crude Oil and Natural Gas Facilities (Methane Rule).

III. Project Location

The facility is located at Star Fee Lease in the Cymric oilfield (SW/4 Section 6, T30S, R22E). 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 tanks and vessels at the tank setting receive production prior to custody transfer. The tanks in this project operate as clarify tank, stock tanks, and a drain tank.

VOC emissions from tanks S-1372-220-4, '-221-4, '-416-2, and '-441-0 will be controlled by a new shared vapor control system in accordance with the vapor control systems permit conditions listed on tank permit S-1372-220-4. The vapor control system collects vapors from the tanks and routes the uncondensed vapors to the casing vent control system listed on TEOR permit S-1372-100. The vapor control system on TEOR permit S-1372-100 vents vapors to be incinerated in steam generators S-1372-1, -2, -4, -30, -32, -33, -127, -317, -334 or a standby flare and/or injected into DOGGR approved gas injection wells which all reduce inlet VOC emissions by at least 95% by weight.

As stated in the proposal section, the VCS on tanks '-220-4, '-221-4, -416-2, and '-441-0 is required by the CARB methane Rule.

New tank S-1372-442-0 will operate as an uncontrolled drain tank.

V. Equipment Listing

Pre-Project Equipment Description:

- ATC S-1372-100-35: MODIFICATION OF TEOR OPERATION WITH WELL CASING COLLECTION SYSTEM WITH VAPOR PIPING TO UNIT S-1372-99 SERVING 633 STEAM ENHANCED WELLS WITH 3-PHASE SEPARATORS, STANDBY FLARE, SLUG CATCHER, SCRUBBERS, HEAT EXCHANGERS, COMPRESSORS, PUMPS, SULFA CHECK AND LIQUID SULFUR REMOVAL SYSTEMS (GAMBLE/MCKITTRICK FRONT): AUTHORIZE THE RECEIPT OF VAPORS FROM THE VAPOR RECOVERY SYSTEM LISTED ON PERMIT '-209 FOR CARB'S GREENHOUSE GAS EMISSION STANDARDS FOR CRUDE OIL AND NATURAL GAS FACILITIES COMPLIANCE
- S-1372-220-3: 2,019 BBL FIXED ROOF CRUDE OIL STORAGE TANK (#8707)
- S-1372-221-3: 1,600 BBL FIXED ROOF CRUDE OIL STORAGE TANK (#10602)
- S-1372-416-1: 2000 BBL FIXED-ROOF CRUDE OIL STORAGE TANK WITH P/V VALVE (STAR FEE)

Proposed Modification:

- S-1372-100-36: MODIFICATION OF TEOR OPERATION WITH WELL CASING COLLECTION SYSTEM WITH VAPOR PIPING TO UNIT S-1372-99 SERVING 633 STEAM ENHANCED WELLS WITH 3-PHASE SEPARATORS, STANDBY FLARE, SLUG CATCHER, SCRUBBERS, HEAT EXCHANGERS, COMPRESSORS, PUMPS, SULFA CHECK AND LIQUID SULFUR REMOVAL SYSTEMS (GAMBLE/MCKITTRICK FRONT): CONNECT THE TANK VAPOR RECOVERY LISTED ON PERMIT S-1372-220 TO THE CASING COLLECTION SYSTEM
- S-1372-220-4: MODIFICATION OF 2,019 BBL FIXED ROOF CRUDE OIL STORAGE TANK (#8707): ADD VAPOR RECOVERY SYSTEM SHARED WITH TANKS S-1372-221, '-416, AND '-441 VENTED TO VAPOR RECOVERY SYSTEM LISTED ON S-1372-100
- S-1372-221-3: MODIFICATION OF 1,600 BBL FIXED ROOF CRUDE OIL STORAGE TANK (#10602): INCREASE CAPACITY TO 2,000 BBLs AND CONNECT TO VAPOR RECOVERY SYSTEM LISTED ON S-1372-220
- S-1372-416-1: MODIFICATION OF 2000 BBL FIXED-ROOF CRUDE OIL STORAGE TANK WITH P/V VALVE (STAR FEE): CONNECT TO VAPOR RECOVERY SYSTEM LISTED ON S-1372-220
- S-1372-441-0: 5,000 BBL FIXED ROOF CRUDE OIL STORAGE/CLARIFIER TANK SERVED BY VAPOR RECOVERY SYSTEM LISTED ON S-1372-220
- S-1372-442-0: 500 BBL FIXED ROOF CRUDE OIL DRAIN TANK WITH PVRV

Post Project Equipment Description:

- S-1372-100-36: TEOR OPERATION WITH WELL CASING COLLECTION SYSTEM WITH VAPOR PIPING TO UNIT S-1372-99 SERVING 633 STEAM ENHANCED WELLS WITH 3-PHASE SEPARATORS, STANDBY FLARE, SLUG CATCHER, SCRUBBERS, HEAT EXCHANGERS, COMPRESSORS, PUMPS, SULFA CHECK AND LIQUID SULFUR REMOVAL SYSTEMS (GAMBLE/MCKITTRICK FRONT)
- S-1372-220-4: 2,000 BBL FIXED ROOF CRUDE OIL STORAGE TANK (#8707) WITH VAPOR RECOVERY SYSTEM SHARED WITH TANKS S-1372-221, '-416, AND '-441 VENTED TO CASING VAPOR COLLECTION SYSTEM LISTED ON S-1372-100 (STAR FEE)

- S-1372-221-3: 2000 BBL FIXED ROOF CRUDE OIL STORAGE TANK (#10602) CONNECTED TO THE VAPOR RECOVERY SYSTEM LISTED ON S-1372-220 (STAR FEE)
- S-1372-416-1: 2000 BBL FIXED-ROOF CRUDE OIL STORAGE TANK WITH P/V VALVE CONNECTED TO THE VAPOR RECOVERY SYSTEM LISTED ON S-1372-220 (STAR FEE)
- S-1372-441-0: 5,000 BBL FIXED ROOF CRUDE OIL STORAGE/CLARIFIER TANK CONNECTED TO THE VAPOR RECOVERY SYSTEM LISTED ON S-1372-220 (STAR FEE)
- S-1372-442-0: 500 BBL FIXED ROOF CRUDE OIL DRAIN TANK WITH PVRV (STAR FEE)

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 steam generators, a standby flare or to DOGGR approved disposal wells. The efficiency of the vapor control system is at least 95%.

The control equipment listed above all meet the control requirements of the CARB Methane Rule except the standby flare. The CARB Methane Rule requires the flare to achieve at least 95% percent vapor control efficiency of total emissions and to not generate more than 15 parts per million volume (ppmv) NO_x when measured at 3% oxygen and does not require the use of supplemental fuel gas, other than gas required for a pilot burner, to operate. The flare does not meet the NO_x limit set by this Rule.

However the CARB Methane Rule allows for the vapor collection system and control device to be taken out of service for up to 30 calendar days per calendar year for performing maintenance. During this time, emissions from the tanks will be uncontrolled or vented to the flare as the flare is required to meet the 15 ppmv NO_x requirement during the maintenance Activities (less than 30 days per year).

VII. General Calculations

Modifying a vapor control system to connect a new tank to the system is not a NSR modification; therefore, Permit S-1372-100 is not being modified and does not require calculations.

A. Assumptions

- Facility will operate 24 hours per day, 7 days per week, and 52 weeks per year.

- Only VOC emissions are associated with this project

Pre-project Tanks S-1372-220, '-221, and '-416:

- The tank paint conditions are good, the color is gray, and the shade is medium. –
 - TVP of oil = 0.5 psia (Current PTO)
 - Tank temperature, 120° F
 - Applicant proposes one turnover per day throughput
 - VOCs molecular weight, 100 lb/lbmol

Post-project:

Tanks S-1372-220, '-221, '-416, and '-441:

Applicant proposes a post project VOC content of the vapors from the tank to be less than 10% by weight. Piping and components handling fluid streams with a VOC content of 10% or less by weight (i.e. VOCs as a percentage of the entire gas stream) are not assessed emissions. Therefore, no post project emissions are quantified for tanks S-1372-220, '-221, '-416, and '-441.

Tank S-1372-442-0:

- The tank paint conditions are good, the color is gray, and the shade is medium.
- TVP of oil = 0.5 psia (Applicant)
- Tank temperature, 120° F (unheated)
- Applicant proposes 10 bbl/day throughput

B. Emission Factors

Pre-project:

Both the daily and annual pre project 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 26o API. The spreadsheet for tanks was developed using the equations for fixed-roof tanks from EPA AP-42, Chapter 7.1. See Calculations Appendix B

There are no VOC emissions associated with the post project Potential to Emit associated with tanks S-1372-220, '-221, '-416, and '-441 (see Assumptions).

Tank S-1372-442-0's daily and annual PE's 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 Appendix B. The spreadsheet for tanks was developed using the equations for fixed-roof tanks from EPA AP-42, Chapter 7.1.

C. Calculations

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

Tanks S-1372-220-4, '-221-4, and '-416-2

Permit Unit	VOC - Daily PE1 (lb/day)	VOC - Annual PE1 (lb/Year)
S-1372-220-3	104.3	38,075
S-1372-221-3	84.3	30,775
S-1372-416-1	104.3	38,075

See Appendix B for calculations

Since tanks S-1372-441-0 and '-442-0 are new tanks, the PE₁ = 0

2. Post Project Potential to Emit, (PE₂)

Post-project potential to emit is calculated based on the fugitive component counts. The following table summarizes the post-project potential to emit for units included in this project.

Permit Unit	VOC - Daily PE2 (lb/day)	VOC - Annual PE2 (lb/Year)
S-1372-220-4	0	0
S-1372-221-4	0	0
S-1372-416-2	0	0
S-1372-441-0	0	0
S-1372-442-0	1.8	653

See appendix B for tanks S-1372-442-0 tank calculations

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

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

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

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

Pursuant to District Rule 2201, the SSPE2 is the PE from all units with valid ATCs or PTOs at the Stationary Source and the quantity of ERCs which

have been banked since September 19, 1991 for AER that have occurred at the source, and which have not been used on-site.

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

5. Major Source Determination

Rule 2201 Major Source Determination:

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

- any ERCs associated with the stationary source
- Emissions from non-road IC engines (i.e. IC engines at a particular site at the facility for less than 12 months)
- 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. No change in other pollutants are proposed or expected as a result of this project.

Rule 2410 Major Source Determination:

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

PSD Major Source Determination¹ (tons/year)						
	NO₂	VOC	SO₂	CO	PM	PM₁₀
Estimated Facility PE before Project Increase	-	-	-	1,458	-	-
PSD Major Source Thresholds	250	250	250	250	250	250
PSD Major Source?	-	-	-	Yes	-	-

¹From Project S1193689

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

6. Baseline Emissions (BE)

a. Annual BE

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

Pursuant to District Rule 2201, BE = PE1 for:

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

otherwise,

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

Clean Emissions Unit, Located at a Major Source

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

Tanks S-1372-220-4, '-221-4, and '-416-2 are equipped with an PV vent, which meets the requirements for achieved-in-practice BACT. Therefore, BE=PE1.

Tanks S-1372-441-0, and '-442-0 are new tanks, the BE is equal zero.

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 source is not included in the 28 specific source categories specified in 40 CFR 51.165, the, increases in fugitive emissions associated with tanks S-1372-220-4, '-221-4, '-416-2 and 441-0, are not included in the SB 288 Major Modification calculation.

Since this facility is a major source for VOC, the project's non-fugitive emissions from tank S-1372-442 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?
VOC	653	50,000	No

Since 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 associated with tanks S-1372-220-4, '-221-4, '-416-2 and 441-0 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?
VOC*	653	0	Yes

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

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

Federal Offset Quantities:

The Federal offset quantity is only calculated only for the pollutants for which the project is a Federal Major Modification. The Federal offset quantity is the sum of the annual emission changes for all new and modified emission units in a project calculated as the potential to emit after the modification (PE2) minus the actual emissions (AE) during the baseline period for each emission unit multiplied by the applicable federal offset ratio. There are no special calculations performed for units covered by an SLC.

VOC			Federal Offset Ratio	1.5
Permit No.	Actual Emissions (lb/year)	Potential Emissions (lb/year)	Emissions Change (lb/yr)	
S-1372-442-0	0	653	653	
Net Emission Change (lb/year):			653	
Federal Offset Quantity: (NEC * 1.5)			980	

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

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

I. Project Emissions Increase - New Major Source Determination

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

PSD Major Source Determination: Potential to Emit (tons/year)						
	NO₂	VOC	SO₂	CO	PM	PM₁₀
Total PE from New and Modified Units	0	0.4	0	0	0	0
PSD Major Source threshold	250	250	250	250	250	250
New PSD Major Source?	N	N	N	N	N	N

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

10. Quarterly Net Emissions Change (QNEC)

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

VIII. Compliance

Rule 2201 - New and Modified Stationary Source Review Rule

Modifying the vapor control system to connect a new tank to the system is not a NSR modification; therefore, permit S-1372-100 is not being modified and this rule does not apply to permit S-1372-100.

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

The applicant is proposing to install two new emissions unit each with a PE less than 2.0 lb/day for VOC as calculated in section VII.C.2. Since the daily VOC emissions are less than 2.0 lbs/day, BACT will not be 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

AIPE = PE2 – HAPE where,

- AIPE = Adjusted Increase in Permitted Emissions, lb/day.
- PE2 = the emission unit's post project Potential to Emit, lb/day.
- HAPE = the emission unit's Historically Adjusted Potential to Emit, lb/day.

Historically Adjusted Potential to Emit (HAPE) Calculations:

HAPE = PE1 x (EF2 / EF1) where,

- PE1 = The emission unit's Potential to Emit prior to modification or relocation.
- EF2 = The emission 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 emission unit's permitted emission factor for the pollutant before the modification or relocation.

Assume EF1 = EF2

$$AIPE \text{ (lb/day)} = PE2 \text{ (lb/day)} - [PE1 \text{ (lb/day)} \times (EF2 / EF1)]$$

Permit Unit	AIPE (lb/day)		
	PE2	PE1	AIPE
S-1372-220-4	0	104.3	-104.3
S-1372-221-4	0	84.3	-84.3
S-1372-416-2	0	104.3	-104.3

As shown in the calculation above, the applicant is proposing to modify its existing emissions unit with an AIPE of less than 0.0 lb/day for VOC. Since the daily increase in VOC emissions is less than 2.0 lbs/day, BACT will not be 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 for any pollutant. Therefore, BACT is not triggered for any pollutant.

As discussed in Section VII.C.8 above, the installation of tank S-1372-442-0 constitutes a Federal Major Modification for VOC emissions. Therefore, BACT is triggered for VOC for tank S-1372-442-0.

2. BACT Guidance

Per District Policy APR 1305, Section IX, "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 for source categories or classes covered in the BACT Clearinghouse, relevant information under each of the following steps may be simply cited from the Clearinghouse without further analysis."

BACT Guideline 7.3.1, applies to Petroleum and Petrochemical Production – Fixed Roof Organic Liquid Storage or Processing Tank, < 5,000 bbl tank capacity (see Appendix D)

3. Top-Down BACT Analysis

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

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

The applicant is proposing to use PV relief valve. The proposed equipment is the most effective control technology listed in BACT Guideline 7.3.1; therefore, the proposed equipment satisfies the BACT requirement.

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 Applicability			
Pollutant	SSPE2 (lb/yr)	Offset Threshold Levels (lb/yr)	Offsets Required?
VOC	➤ 20,000	20,000	Yes

2. Quantity of Offsets Required

The SSPE2 exceeds the offset threshold levels for VOCs. Therefore, offsets will be required.

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 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 VII.C.8, this project constitutes a Federal Major Modification; therefore, public noticing for Federal Major Modification purposes is required.

b. PE > 100 lb/day

The PE2 for unit S-1372-442-0 is compared to the daily PE Public Notice thresholds in the following table:

PE > 100 lb/day Public Notice Thresholds			
Pollutant	PE2 (lb/day)	Public Notice Threshold	Public Notice Triggered?
VOC	1.8	100 lb/day	No

Therefore, public noticing for PE > 100 purposes is not required

c) Offset Threshold

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

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

Since the SSPE2 does not surpass the offset threshold levels, public noticing is not triggered for this project.

d) SSIPE > 20,000 lb/yr

The SSIPE (NEC) is calculated and shown as follows:

Project SSIPE			
Permit Unit	VOC - Annual PE2 (lb/Year)	VOC - Annual PE1 (lb/Year)	SSIPE (lb/Year)
S-1372-220-4	0	38,075	-38,075
S-1372-221-4	0	30,775	-30,775
S-1372-416-2	0	38,075	-38,075
S-1372-441-0	0	0	0
S-1372-442-0	653	0	653
Total			> 0

As shown in the above table, the SSIPE for this project does not exceed the 20,000 lb/yr public notice threshold.

Therefore, public noticing is not required for SSIPE purposes.

2. Public Notice Action

As discussed above, public noticing pursuant to District Rule 2201 is required for this project a Federal Major Modification. Therefore, public notice documents will be submitted to the California Air Resources Board (CARB) and a public notice will be electronically published on the District's website prior to the issuance of the ATC for this equipment.

D. Daily Emissions Limits (DEL)

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.

DELs for emission units S-1372-220-4, '-221-4, '-416-2, and '-441-0, will be included on the ATCs in the form of a condition limiting the VOC content of the gas to not exceed 10% by weight.

- The VOC content of the gas shall not exceed 10% by weight. [District Rule 2201]

Operator shall conduct quarterly gas sampling for gas exiting the separator pressure vessel to qualify for exemption from fugitive component counts for components handling fluids with VOC content equal to or less than 10% by weight. If gas samples are equal to or less than 10% VOC by weight for 8

consecutive quarterly samplings, sampling frequency shall only be required annually. [District Rule 2201]

The DEL for the emission unit S-1372-442-0 will be included on the ATC in the form of the 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

Source testing is not required to demonstrate compliance with Rule 2201.

2. Monitoring

Quarterly monitoring will be required for tank S-1372-220-4, '-221-4, '-416-2, and '-441-0:

- Operator shall conduct quarterly gas sampling for gas exiting the separator pressure vessel to qualify for exemption from fugitive component counts for components handling fluids with VOC content equal to or less than 10% by weight. If gas samples are equal to or less than 10% VOC by weight for 8 consecutive quarterly samplings, sampling frequency shall only be required annually. [District Rule 2201]

Monitoring will not be required for tank S-1372-442-0

3. Record Keeping

Recordkeeping 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 S-1372-220-4, '-221-4, '-416-2, and '-441-0:

- *The permittee shall keep accurate records of the dates of inspection and monitoring and the components inspected and monitored. [District Rule 2201]*

- {2490} All records required to be maintained by this permit shall be maintained for a period of at least five years and shall be made readily available for District inspection upon request. [District Rule 4623] N

The following conditions will appear on permit S-1372-442-0:

- 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 (AAQA)

An AAQA shall be conducted for the purpose of determining whether a new or modified Stationary Source will cause or make worse a violation of an air quality standard. The project emissions are VOCs which does not have a Federal or State Air Quality standard. AAQA is not required.

G. Compliance Certification

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

H. Alternate Siting Analysis

The current project occurs at an existing facility. The applicant proposes to install a install the capacity of a tank, install vapor control on existing tanks, and install a new drain tank.

Since the project will provide crude oil storage to be used at the same location, the existing site will result in the least possible impact from the project. Alternative sites would involve the relocation and/or construction of various support

structures on a much greater scale, and would therefore result in a much greater impact.

Rule 2410 Prevention of Significant Deterioration

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

Rule 2520 Federally Mandated Operating Permits

This facility is subject to this rule, and has received their Title V Operating Permit. The proposed modification is a Significant Permit Modification to the Title V Permit pursuant to Section 3.29 of this rule. 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.

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 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.

CH&SC 41700 - California Health and Safety Code

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 G**), 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
220-4	4.40E-10	No
221-4	1.98E-10	No
416-2	1.90E-10	No
441-0	2.14E-10	No
442-0	2.43E-10	No

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.

District policy APR 1905 also specifies that the increase in emissions associated with a proposed new source or modification not have acute or chronic indices, or a cancer risk greater than the District's significance levels (i.e. acute and/or

chronic indices greater than 1 and a cancer risk greater than 20 in a million). As outlined by the HRA Summary in Appendix G of this report, the emissions increase(s) for this project was(were) determined to be less than significant.

Rule 4311 Flares

The purpose of this rule is to limit the emissions of volatile organic compounds (VOC), oxides of nitrogen (NOx), and sulfur oxides (SOx) from the operation of flares. The units modified in this project are currently in compliance with the requirements of this rule. Continued compliance 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 conditions 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 0.5 psia 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 upon initial start-up, 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 4623] N

The permittee shall conduct API gravity testing upon initial start-up. [District Rules 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 Rule 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 Rule 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 Rule 4623] 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)

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

- Inform governmental decision-makers and the public about the potential, significant environmental effects of proposed activities;
- Identify the ways that environmental damage can be avoided or significantly reduced;
- Prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible; and
- Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

Greenhouse Gas (GHG) Significance Determination

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

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

The District is a Responsible Agency for the project because of its discretionary approval power over the project via its Permits Rule (Rule 2010) and New Source Review Rule (Rule 2201), (CEQA Guidelines §15381). As a Responsible Agency, the District is limited to mitigating or avoiding impacts for which it has statutory authority. The District does not have statutory authority for regulating GHGs. The District has determined that the applicant is responsible for implementing GHG mitigation measures imposed in the EIR by the Kern County for the Kern County Zoning Ordinance.

District CEQA Findings

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

In 2015, Kern County revised their *Kern County Zoning Ordinance* in regards to exploration, drilling and production of hydrocarbon resources projects. Kern County, as the lead agency, is the agency that will enforce the mitigation measures identified in the EIR, including the mitigation requirements of the Oil and Gas ERA. As a responsible agency the District complies with CEQA by considering the EIR prepared by the Lead Agency, and by reaching its own conclusion on whether and how to approve the project involved (CCR §15096). The District has reviewed the EIR prepared by Kern County, the Lead Agency for the project, and finds it to be adequate. The District also prepared a full findings document. The full findings document, *California Environmental Quality Act (CEQA) Statement of Findings for the Kern County Zoning Ordinance EIR* contains the details of the District's findings regarding the Project. The District's implementation of the Kern Zoning Ordinance and its EIR applies to ATC applications received for any new/modified equipment used in oil/gas production in Kern County, including new wells. The full findings applies to the Project and the Project's related activity equipment(s) is covered under the Kern Zoning Ordinance. To reduce project related impacts on air quality, the District evaluates emission controls for the project such as Best Available Control Technology (BACT) under District Rule 2201 (New and Modified Stationary

Source Review). In addition, the District is requiring the applicant to surrender emission reduction credits (ERC) for stationary source emissions above the offset threshold.

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

Indemnification Agreement/Letter of Credit Determination

According to District Policy APR 2010 (CEQA Implementation Policy), when the District is the Lead or Responsible Agency for CEQA purposes, an indemnification agreement and/or a letter of credit may be required. The decision to require an indemnity agreement and/or a letter of credit is based on a case-by-case analysis of a particular project's potential for litigation risk, which in turn may be based on a project's potential to generate public concern, its potential for significant impacts, and the project proponent's ability to pay for the costs of litigation without a letter of credit, among other factors.

The revision to the *Kern County Zoning Ordinance* went through an extensive public process that included a Notice of Preparation, a preparation of an EIR, scoping meetings, and public hearings. The process led to the certification of the final EIR and approval of the revised *Kern County Zoning Ordinance* in November 2015 by the Kern County Board of Supervisors. As mentioned above, the proposed project will be fully mitigated and will result in no net increase in emissions. In addition, the proposed project is not located at a facility of concern; therefore, an Indemnification Agreement and/or a Letter of Credit will not be required for this project in the absence of expressed public concern.

California Code of Regulations, Title 17, Division 3, Chapter 1, Subchapter 10, Article 4 Sections 95665-95677: Greenhouse Gas Emission Standards for Crude Oil and Natural Gas Facilities (Methane Rule)

The tanks in this project have been "flash tested" and the tank settings were found to emit >10 metric tons of methane annually and therefore is required to meet the requirements of the ARB Methane Rule which requires tank vapor recovery on "separator and tank systems" define as "the first separator in a crude oil or natural gas production system and any tank or sump connected directly to the first separator."

By January 1, 2019, tank vapors must be controlled using a vapor collection system which directs the collected vapors to a 1) sales gas system, 2) fuel gas system, or 3) DOGGR gas disposal well unless none are available at the facility. The rule defines "fuel gas system" as any system "that supplies natural gas as a fuel source to on-site natural gas powered equipment other than a vapor control device." For this project, gas

from the TVR systems will be sent to an existing fuel gas system that consists of nine steam generators, DOGGR approved injection wells, and a standby flare.

The flare does not qualify as part of a "fuel gas system;" However, Section 95671(e) allows vapor collection system and control device will be allowed to be taken out of service for up to 30 calendar days per calendar year for performing maintenance. In lieu venting to atmosphere during these 30 days, the vapors from the tanks will be allowed to be combusted in the standby flare listed on permit S-1372-100.

The facility will also be required to comply with the Leak Detection and Repair (LDAR) requirements of Section 95669. This requirement is satisfied with the facility registration requirement.

The following conditions will be placed on the permits to ensure compliance with this Rule:

- Except during maintenance, vessel shall be connected to the vapor collection system listed on S-8452-220. [17 CCR 95668] N
- The vapors may only be vented to a non-destructive vapor control device that achieves at least 95 percent vapor control efficiency of total emissions and does not result in emissions of nitrogen oxides (NO_x); or, a vapor control device that achieves at least 95 percent vapor control efficiency of total emissions and does not generate more than 15 parts per million volume (ppmv) NO_x when measured at 3 percent oxygen and does not require the use of supplemental fuel gas, other than gas required for a pilot burner, to operate.
- Vapor collection systems and control devices are allowed to be taken out of service for up to 30 calendar days per calendar year for performing maintenance. In lieu of taking the vapor collection systems and control devices out of service, the vapors may be vented to the standby flare listed on permit S-1372-100. A time extension to perform maintenance not to exceed 14 calendar days per calendar year may be granted by the ARB Executive Officer. The owner or operator is responsible for maintaining a record of the number of calendar days per calendar year that the vapor collection system or vapor control device is out of service and shall provide a record of such activity at the request of the District. If an alternate vapor control device compliant with 17 CCR Section 95671 is installed prior to conducting maintenance and the vapor collection and control system continues to collect and control vapors during the maintenance operation consistent with the applicable standards specified in 17 CCR Section 95671, the event does not count towards the 30 calendar day limit. Vapor collection system and control device shutdowns that result from utility power outages are not subject to enforcement action provided the equipment resumes normal operation as soon as normal utility power is restored. Vapor collection system and control device shutdowns that result from utility power outages do not count towards the 30 calendar day limit for maintenance. [17 CCR 95671(f)(1)(2)(3)] N

- Fugitive emissions inspections and repairs pursuant to Leak Detection and Repair 17 CCR 95669 shall be implemented for subject equipment. [17 CCR 95669] N

Compliance is expected.

IX. Recommendations

Compliance with all applicable rules and regulations is expected. Pending a successful EPA Public Noticing period, issue Authority to Construct S-1372-218-5, '-235-5, '-256-5, '-257-5, '-319-19, '-419-0, '-420-0, and '-421-0 subject to the permit conditions on the attached draft Authority to Construct in Appendix H.

X. Billing Information

Permit Number	Fee Schedule	Fee Description	Annual Fee
S-1372-100-37	3020-09-A	633 Wells	\$7108.00
S-1372-220-4	3020-05-D	2000 BBLs	\$223.00
S-1372-221-4	3020-05-D	2000 BBLs	\$223.00
S-1372-416-0	3020-05-D	2000 BBLs	\$223.00
S-1372-441-0	3020-05-E	5000 BBLs	\$296.00
S-1372-442-0	3020-05-C	500 BBLs	\$165.00

- APPENDIX A: Current Permits
- APPENDIX B: Emissions Calculations
- APPENDIX C: QNEC & Emissions Profile
- APPENDIX D: BACT Guideline
- APPENDIX E: Top down BACT Analysis
- APPENDIX F: Compliance Certification
- APPENDIX G: Health Risk Assessment
- APPENDIX H: Draft ATCs

APPENDIX A

Current PTOs

San Joaquin Valley

Air Pollution Control District

PERMIT UNIT: S-1372-100-33

EXPIRATION DATE: 05/31/2021

SECTION: 06 **TOWNSHIP:** 30S **RANGE:** 22E

EQUIPMENT DESCRIPTION:

TEOR OPERATION WITH WELL CASING COLLECTION SYSTEM WITH VAPOR PIPING TO UNIT S-1372-99 SERVING 633 STEAM ENHANCED WELLS WITH 3-PHASE SEPARATORS, STANDBY FLARE, SLUG CATCHER, SCRUBBERS, HEAT EXCHANGERS, COMPRESSORS, PUMPS, SULFA CHECK AND LIQUID SULFUR REMOVAL SYSTEMS (GAMBLE/MCKITTRICK FRONT)

PERMIT UNIT REQUIREMENTS

1. Operation shall include the following equipment: 633 steam enhanced wells, well vent vapor collection system, standby flare, slug catchers, heat exchangers, compressors, pumps, vapor piping, dry fuel gas sulfur scrubbing system and liquid sulfur removal systems, tanks and 3-phase separators. [District Rule 2201] Federally Enforceable Through Title V Permit
2. Operation shall include vapor piping from tanks S-1372-128, -412, S-1641-34, -35, -36, and -37 to vapor control system. [District Rule 2201] Federally Enforceable Through Title V Permit
3. At least one sulfur removal system shall be operated at all times. [District Rule 2201] Federally Enforceable Through Title V Permit
4. There shall be no leaks exceeding 10,000 ppmv from fugitive emissions components associated with liquid sulfur removal system. [District Rule 2201] Federally Enforceable Through Title V Permit
5. Collected condensate shall be discharged into production pipeline. [District Rule 2201] Federally Enforceable Through Title V Permit
6. Flare S-1372-100 shall only be used to incinerate TEOR vapors when one or more of steam generators S-1372-1, -2 or -4 are not in operation. [District Rule 2201] Federally Enforceable Through Title V Permit
7. Flare shall only use PUC quality natural gas as auxiliary fuel. [District Rule 2201] Federally Enforceable Through Title V Permit
8. Flare shall be designed for smokeless operation, with no visible emissions in excess of 5% opacity. [District Rule 2201] Federally Enforceable Through Title V Permit
9. The flare shall be operated according to the manufacturer's specifications, a copy of which shall be maintained on site. [District Rule 2520] Federally Enforceable Through Title V Permit
10. The flare in this permit shall be inspected every two weeks while in operation for visible emissions. If visible emissions are observed, corrective action shall be taken. If visible emissions continue, an EPA method 9 test shall be conducted within 72 hours. [District Rule 2520] Federally Enforceable Through Title V Permit
11. Flare shall comply with all of the applicable requirements of Rule 4311. [District Rule 4311] Federally Enforceable Through Title V Permit
12. The flame shall be present at all times when combustible gases are vented through the flare. [District Rule 4311] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

13. The flare outlet shall be equipped with an automatic ignition system, or, shall operate with a pilot flame present at all times when combustible gases are vented through the flare, except during purge periods for automatic-ignition equipped flares. [District Rule 4311] Federally Enforceable Through Title V Permit
14. Except for flares equipped with a flow-sensing ignition system, a heat sensing device such as a thermocouple, ultraviolet beam sensor, infrared sensor, or an equivalent device, capable of continuously detecting at least one pilot flame or the flare flame is present shall be installed and operated. [District Rule 4311] Federally Enforceable Through Title V Permit
15. Flares using flow-sensing automatic ignition systems and not using a continuous flame pilot shall use purge gas for purging. [District Rule 4311] Federally Enforceable Through Title V Permit
16. Open flares (air-assisted, steam-assisted, or non-assisted) in which the flare gas pressure is less than 5 psig shall be operated in such a manner that meets the provisions of 40 CFR 60.18. [District Rule 4311] Federally Enforceable Through Title V Permit
17. Flaring is prohibited unless it is consistent with an approved flare minimization plan (FMP), pursuant to Rule 4311, Section 6.5, and all commitments listed in that plan have been met. This standard shall not apply if the APCO determines that the flaring is caused by an emergency as defined by Section 3.7 and is necessary to prevent an accident, hazard or release of vent gas directly to the atmosphere [District Rule 4311] Federally Enforceable Through Title V Permit
18. The operator of a flare subject to flare minimization requirements pursuant to Section 5.8 shall monitor the vent gas flow to the flare with a flow measuring device or other parameters as specified in the Permit to Operate. The operator shall maintain records pursuant to Section 6.1.7. Flares that the operator can verify, based on permit conditions, are not capable of producing reportable flare events pursuant to Section 6.2.2 shall not be required to monitor vent gas flow to the flare. [District Rule 4311] Federally Enforceable Through Title V Permit
19. The following records shall be maintained, retained on-site for a minimum of five years, and made available to the APCO, ARB, and EPA upon request: 1) A copy of the compliance determination conducted pursuant to Section 6.4.1, 2) For flares used during an emergency, record of the duration of flare operation, amount of gas burned, and the nature of the emergency situation, 3) A copy of the approved flare minimization plan pursuant to Section 6.5, 4) On and after July 1, 2012, where applicable, a copy of annual reports submitted to the APCO pursuant to Section 6.2, and 5) Where applicable, monitoring data collected pursuant to Sections 5.10. [District Rule 4311] Federally Enforceable Through Title V Permit
20. The operator of a flare subject to flare minimization plans pursuant to Section 5.8 of Rule 4311 shall notify the APCO of an unplanned flaring event within 24 hours after the start of the next business day or within 24 hours of their discovery, whichever ever occurs first. The notification shall include the flare source identification, the start date and time, and the end date and time. [District Rule 4311] Federally Enforceable Through Title V Permit
21. Effective on and after July 1, 2012, and annually thereafter, the operator of a flare subject to flare minimization plans pursuant to Section 5.8 shall submit an annual report to the APCO that summarizes all Reportable Flaring Events as defined in Section 3.0 that occurred during the previous 12 month period. The report shall be submitted within 30 days following the end of the twelve month period of the previous year. The report shall include, but is not limited to all of the following: 1) The results of an investigation to determine the primary cause and contributing factors of the flaring event; 2) Any prevention measures considered or implemented to prevent recurrence together with a justification for rejecting any measures that were considered but not implemented; 3) If appropriate, an explanation of why the flaring was an emergency and necessary to prevent accident, hazard or release of vent gas to the atmosphere, or where, due to a regulatory mandate to vent a flare, it cannot be recovered, treated and used as a fuel gas at the facility; and 4) The date, time, and duration of the flaring event. [District Rule 4311] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

22. Effective on and after July 1, 2012, and annually thereafter, the operator of a flare subject to flare monitoring requirements pursuant to Rule 4311, Sections 5.10, 6.6, 6.7, 6.8, 6.9, and 6.10, as appropriate, shall submit an annual report to the APCO within 30 days following the end of each 12 month period. The report shall include the following: 1) The total volumetric flow of vent gas in standard cubic feet for each day, 2) Hydrogen sulfide content, methane content, and hydrocarbon content of vent gas composition pursuant to Section 6.6, 3) If vent gas composition is monitored by a continuous analyzer or analyzers pursuant to Section 5.11, average total hydrocarbon content by volume, average methane content by volume, and depending upon the analytical method used pursuant to Section 6.3.4, total reduced sulfur content by volume or hydrogen sulfide content by volume of vent gas flared for each hour of the month, 4) If the flow monitor used pursuant to Section 5.10 measures molecular weight, the average molecular weight for each hour of each month, 5) For any pilot and purge gas used, the type of gas used, the volumetric flow for each day and for each month, and the means used to determine flow, 6) Flare monitoring system downtime periods, including dates and times, 7) For each day and for each month provide calculated sulfur dioxide emissions, and 8) A flow verification report for each flare subject to this rule. The flow verification report shall include flow verification testing pursuant to Section 6.3.5. [District Rule 4311] Federally Enforceable Through Title V Permit
23. Total hydrocarbon content and methane content of vent gas shall be determined using ASTM Method D 1945-96, ASTM Method UOP 539-97, EPA Method 18, or EPA Method 25A or 25B. Hydrogen sulfide content of vent gas shall be determined using ASTM Method D 1945-96, ASTM Method UOP 539-97, ASTM Method D 4084-94, or ASTM Method D 4810-88. [District Rule 4311] Federally Enforceable Through Title V Permit
24. Upon request, the operator of flares that are subject to Section 5.6 shall make available to the APCO the compliance determination records that demonstrate compliance with the provisions of 40 CFR 60.18, (c)(3) through (c)(5). [District Rule 4311] Federally Enforceable Through Title V Permit
25. Operator shall monitor vent gas composition using one of the five methods pursuant to Section 6.6.1 through Section 6.6.5, as appropriate. [District Rule 4311] Federally Enforceable Through Title V Permit
26. Operator shall monitor the volumetric flows of purge and pilot gases with flow measuring devices or other parameters as specified on the Permit to Operate so that volumetric flows of pilot and purge gas may be calculated based on pilot design and the parameters monitored. [District Rule 4311] Federally Enforceable Through Title V Permit
27. All of the general monitoring provisions of Section 6.9, as applicable, shall be met. [District Rule 4311] Federally Enforceable Through Title V Permit
28. Operator shall install and maintain equipment that records a real-time digital image of the flare and flame at a frame rate of no less than one frame per minute. The recorded image of the flare shall be of sufficient size, contrast, and resolution to be readily apparent in the overall image or frame. The image shall include an embedded date and time stamp. The equipment shall archive the images for each 24-hour period. In lieu of video monitoring the operator may use an alternative monitoring method that provides data to verify date, time, vent gas flow, and duration of flaring events. [District Rule 4311] Federally Enforceable Through Title V Permit
29. Vapors from this well vent vapor control system shall be incinerated in steam generators S-1372-1, -2, -4, -30, -32, -33, -127, -317, -334 or standby flare and/or injected into DOGGR approved gas injection wells. [District Rule 2201] Federally Enforceable Through Title V Permit
30. Total sulfur oxide (SO_x as SO₂) emissions shall not exceed 1,075.2 lb/day for the following steam generators: S-1372-1, -2, -4, '127, '317, and standby flare. [District Rule 2201] Federally Enforceable Through Title V Permit
31. Fugitive emissions from vapor collection and control system shall not exceed 239.6 lb VOC/day. [District Rule 2201] Federally Enforceable Through Title V Permit
32. There shall be no more than 30 gas leaks. [District Rule 2201] Federally Enforceable Through Title V Permit
33. Permittee shall maintain accurate records of well casing vapor H₂S concentration (periodic sampling of no less than once per month), daily volume of casing vapor incinerated, and calculated daily SO₂ emissions from S-1372-1, '-2, and '-4. [District Rules 1070 and 2520] Federally Enforceable Through Title V Permit
34. Permittee shall maintain with the permit a current listing of all steam enhanced wells connected to the casing vent control system and shall make such listing readily available for District inspection upon request. [District Rule 2201] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

35. Permittee shall maintain accurate component count for TEOR operation according to CAPCOA's "California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities," Table IV-2c (Feb 1999), Screening Value Range emission factors. Permittee shall update such records when new components are installed. [District Rule 2201] Federally Enforceable Through Title V Permit
36. The following test method shall be used for fuel gas sulfur content - ASTM D3246 or double GC for H₂S and mercaptans. [District Rule 2520] Federally Enforceable Through Title V Permit
37. All required source testing shall conform to the compliance testing procedures described in District Rule 1081(amended December 16, 1993). [District Rule 1081] Federally Enforceable Through Title V Permit
38. During the time any steam-enhanced crude oil production well is undergoing service or repair while the well is not producing, it shall be exempt from the emission control requirements of District Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
39. The inspection requirements of Section 5.4.1 through Section 5.4.7 of Rule 4401 shall not apply to components exclusively handling gas/vapor or liquid with a VOC content of ten percent by weight (10%) or less, as determined by the test methods in Section 6.3.4 of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
40. Gas and liquid leaks are as defined in Section 3.20 of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
41. An operator shall not operate a steam-enhanced crude oil production well unless the operator complies with either of the following requirements: The steam-enhanced crude oil production well vent is closed and the front line production equipment downstream of the wells that carry produced fluids (crude oil or mixture of crude oil and water) is connected to a VOC collection and control system as defined in Section 3.0 of Rule 4401, the well vent may be temporarily opened during periods of attended service or repair of the well provided such activity is done as expeditiously as possible with minimal spillage of material and VOC emissions to the atmosphere, or the steam-enhanced crude oil production well vent is open and the well vent is connected to a VOC collection and control system as defined in Section 3.0 of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
42. An operator shall be in violation of this rule if any District inspection demonstrates or if any operator inspection conducted pursuant to Section 5.4 of Rule 4401 demonstrates the existence of an open-ended line or a valve located at the end of the line that is not sealed with a blind flange, plug, cap, or a second closed valve that is not closed at all times, except during attended operations as defined by Section 5.2.2.1 of Rule 4401 requiring process fluid flow through the open-ended lines, a component with a major liquid leak, or a component with a gas leak greater than 50,000 ppmv. [District Rule 4401] Federally Enforceable Through Title V Permit
43. An operator shall be in violation of this rule if any District inspection demonstrates or if any operator inspection conducted pursuant to Section 5.4 of Rule 4401 demonstrates the existence of any combination of components with minor liquid leaks, minor gas leaks, or a gas leaks greater than 10,000 ppmv up to 50,000 ppmv that totals more than number of leaks allowed by Table 2 of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
44. An operator shall not use any component with a leak as defined in Section 3.0 of Rule 4401, or that is found to be in violation of the provisions of Section 5.2.2 of Rule 4401. However, components that were found leaking may be used provided such leaking components have been identified with a tag for repair, are repaired, or awaiting re-inspection after being repaired within the applicable time frame specified in Section 5.5 of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
45. Each hatch shall be closed at all times except during sampling or adding of process material through the hatch, or during attended repair, replacement, or maintenance operations, provided such activities are done as expeditiously as possible with minimal spillage of material and VOC emissions to the atmosphere. [District Rule 4401] Federally Enforceable Through Title V Permit
46. An operator shall comply with the requirements of Section 6.7 of Rule 4401 if there is any change in the description of major components or critical components. [District Rule 4401] Federally Enforceable Through Title V Permit
47. Except for pipes and unsafe-to-monitor components, an operator shall inspect all other components pursuant to the requirements of Section 6.3.3 of Rule 4401 at least once every year. [District Rule 4401] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

48. An operator shall visually inspect all pipes at least once every year. Any visual inspection of pipes that indicates a leak that cannot be immediately repaired to meet the leak standards of this rule shall be inspected within 24 hours after detecting the leak. If a leak is found, the leak shall be repaired as soon as practicable but not later than the time frame specified in Table 3 of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
49. In addition to the inspections required by Section 5.4.1 of Rule 4401, an operator shall inspect for leaks all accessible operating pumps, compressors, and PRDs in service as follows: An operator shall audio-visually (by hearing and by sight) inspect for leaks all accessible operating pumps, compressors, and PRDs in service at least once each calendar week. Any audio-visual inspection of an accessible operating pump, compressor, and PRD performed by an operator that indicates a leak that cannot be immediately repaired to meet the leak standards of this rule shall be inspected not later than 24 hours after conducting the audio-visual inspection. If a leak is found, the leak shall be repaired as soon as practicable but not later than the time frame specified in Table 3 of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
50. In addition to the inspections required by Sections 5.4.1, 5.4.2 and 5.4.3 of Rule 4401, operator shall perform the following: initially inspect a PRD that releases to the atmosphere as soon as practicable but not later than 24 hours after the discovery of the release, re-inspect the PRD not earlier than 24 hours after the initial inspection but not later than 15 calendar days after the initial inspection, inspect all new, replaced, or repaired fittings, flanges, and threaded connections within 72 hours of placing the component in service. Except for PRDs subject to the requirements of Section 5.4.4.1 of Rule 4401, an operator shall inspect a component that has been repaired or replaced not later than 15 calendar days after the component was repaired or replaced. [District Rule 4401] Federally Enforceable Through Title V Permit
51. An operator shall inspect all unsafe-to-monitor components during each turnaround. [District Rule 4401] Federally Enforceable Through Title V Permit
52. District inspection in no way fulfills any of the mandatory inspection requirements that are placed upon operators and cannot be used or counted as an inspection required of an operator. [District Rule 4401] Federally Enforceable Through Title V Permit
53. An operator shall affix a readily visible weatherproof tag to a leaking component upon detection of the leak and shall include the following information on the tag: date and time of leak detection, date and time of leak measurement, for a gaseous leak, the leak concentration in ppmv, for a liquid leak, whether it is a major liquid leak or a minor liquid leak, whether the component is an essential component, an unsafe-to monitor component, or a critical component. [District Rule 4401] Federally Enforceable Through Title V Permit
54. An operator shall keep the tag affixed to the component until an operator has met all of the following conditions: repaired or replaced the leaking component, re-inspected the component using the test method in Section 6.3.3, and the component is found to be in compliance with the requirements of this rule. [District Rule 4401] Federally Enforceable Through Title V Permit
55. An operator shall minimize a component leak in order to stop or reduce leakage to the atmosphere immediately to the extent possible, but not later than one (1) hour after detection of the leak. [District Rule 4401] Federally Enforceable Through Title V Permit
56. Except for leaking critical components or leaking essential components subject to the requirements of Section 5.5.7 of Rule 4401, if an operator has minimized a leak but the leak still exceeds the applicable leak limits as defined in Section 3.0 of Rule 4401, an operator shall comply with at least one of the following requirements as soon as practicable but not later than the time period specified in Table 3 of Rule 4401: Repair or replace the leaking component; or vent the leaking component to a VOC collection and control system as defined in Section 3.0 of Rule 4401, or remove the leaking component from operation. [District Rule 4401] Federally Enforceable Through Title V Permit
57. The repair period in calendar days shall not exceed 14 days for minor gas leaks, 5 days for major gas leaks less than or equal to 50,000 ppmv, 2 days for gas leak greater than 50,000 ppmv, 3 days for minor liquid leaks, 2 days for major liquid leaks. [District Rule 4401] Federally Enforceable Through Title V Permit
58. The leak rate measured after leak minimization has been performed shall be the leak rate used to determine the applicable repair period specified in Table 3 of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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59. The time of the initial leak detection shall be the start of the repair period specified in Table 3 of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
60. If the leaking component is an essential component or a critical component that cannot be immediately shut down for repairs, and if the leak has been minimized but the leak still exceeds the applicable leak standard of this rule, the operator shall repair or replace the essential component or critical component to eliminate the leak during the next process unit turnaround, but in no case later than one year from the date of the original leak detection, whichever comes earlier. [District Rule 4401] Federally Enforceable Through Title V Permit
61. The operator of any steam-enhanced crude oil production well shall maintain records of the date and well identification where steam injection or well stimulation occurs. [District Rule 4401] Federally Enforceable Through Title V Permit
62. An operator of any steam-enhanced crude oil production well shall keep source test records which demonstrate compliance with the control efficiency requirements of the VOC collection and control system as defined in Section 3.0 of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
63. Operator of any steam-enhanced crude oil production well shall keep an inspection log maintained pursuant to Section 6.4 of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
64. Records of each calibration of the portable hydrocarbon detection instrument utilized for inspecting components, including a copy of current calibration gas certification from the vendor of said calibration gas cylinder, the date of calibration, concentration of calibration gas, instrument reading of calibration gas before adjustment, instrument reading of calibration gas after adjustment, calibration gas expiration date, and calibration gas cylinder pressure at the time of calibration shall be maintained. [District Rule 4401] Federally Enforceable Through Title V Permit
65. An operator shall maintain copies at the facility of the training records of the training program operated pursuant to Section 6.5 of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
66. Operator shall keep a copy of the APCO-approved Operator Management Plan at the facility. [District Rule 4401] Federally Enforceable Through Title V Permit
67. Operator shall keep a list of all gauge tanks, as defined in Section 3.17 of Rule 4401. The list shall contain the size, identification number, the location of each gauge tank and specify whether the gauge tank is upstream of all front line production equipment. [District Rule 4401] Federally Enforceable Through Title V Permit
68. The results of gauge tank TVP testing conducted pursuant to Section 6.2.3 shall be submitted to the APCO within 60 days after the completion of the testing. [District Rule 4401] Federally Enforceable Through Title V Permit
69. An operator that discovers that a PRD has released shall record the date that the release was discovered, and the identity and location of the PRD that released. An operator shall submit such information recorded during the calendar year to the APCO no later than 60 days after the end of the calendar year. [District Rule 4401] Federally Enforceable Through Title V Permit
70. An operator shall source test annually all vapor collection and control systems used to control emissions from steam-enhanced crude oil production well vents to determine the control efficiency of the device(s) used for destruction or removal of VOC. Compliance testing shall be performed annually by source testers certified by ARB. Testing shall be performed during June, July, August, or September of each year if the system's control efficiency is dependent upon ambient air temperature. A process system as defined in Section 3.30 of Rule 4401 is not subject to compliance source testing requirements. [District Rule 4401] Federally Enforceable Through Title V Permit
71. If approved by EPA, ARB, and the APCO, an operator need not comply with the annual testing requirement of Section 6.2.1 if all uncondensed VOC emissions collected by a vapor collection are controlled by an internal combustion engine subject to Rule 4702, a combustion device subject to Rule 4320, 4307 or 4308, a flare subject to Rule 4311. [District Rule 4401] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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72. An operator shall comply with the following requirements for each gauge tank, as defined in Section 3.17 of Rule 4401: Conduct periodic TVP testing of each gauge tank at least once every 24 months during summer (July - September), and whenever there is a change in the source or type of produced fluid in the gauge tank. The TVP testing shall be conducted at the actual storage temperature of the produced fluid in the gauge tank using the applicable TVP test method specified in Section 6.4 of Rule 4623 (Storage of Organic Liquids). The operator shall submit the TVP testing results to the APCO as specified in Section 6.1.9 of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
73. The control efficiency of any VOC control device, measured and calculated as carbon, shall be determined by EPA Method 25, except when the outlet concentration must be below 50 ppm in order to meet the standard, in which case EPA Method 25a may be used. EPA Method 18 may be used in lieu of EPA Method 25 or EPA Method 25a provided the identity and approximate concentrations of the analytes/compounds in the sample gas stream are known before analysis with the gas chromatograph and the gas chromatograph is calibrated for each of those known analyte/compound to ensure that the VOC concentrations are neither under- or over-reported. [District Rule 4401] Federally Enforceable Through Title V Permit
74. VOC content shall be analyzed by using the latest revision of ASTM Method E168, E169, or E260 as applicable. Analysis of halogenated exempt compounds shall be performed by using ARB Method 432. [District Rule 4401] Federally Enforceable Through Title V Permit
75. Leak inspection, other than audio-visual, and measurements of gaseous leak concentrations shall be conducted according to EPA Method 21 using an appropriate portable hydrocarbon detection instrument calibrated with methane. The instrument shall be calibrated in accordance with the procedures specified in EPA Method 21 or the manufacturer's instruction, as appropriate, not more than 30 days prior to its use. The operator shall record the calibration date of the instrument. Where safety is a concern, such as measuring leaks from compressor seals or pump seals when the shaft is rotating, a person shall measure leaks by placing the instrument probe inlet at a distance of one (1) centimeter or less from the surface of the component interface. [District Rule 4401] Federally Enforceable Through Title V Permit
76. The VOC content by weight percent (wt.%) shall be determined using American Society of Testing and Materials (ASTM) D1945 for gases and South Coast Air Quality Management District (SCAQMD) Method 304-91 or the latest revision of ASTM Method E168, E169 or E260 for liquids. [District Rule 4401] Federally Enforceable Through Title V Permit
77. Operator shall maintain an inspection log in which an operator records, at a minimum, all of the following information for each inspection performed: The total number of components inspected, total number and percentage of leaking components found by component type, location, type, and name or description of each leaking component and description of any unit where the leaking component is found, date of leak detection and the method of leak detection. For gaseous leaks, the leak concentration in ppmv, and for liquid leaks record whether the leak is a major liquid leak or a minor liquid leak. the date of repair, replacement, or removal from operation of leaking components, identify and location of essential components and critical components found leaking that cannot be repaired until the next process unit turnaround or not later than one year after leak detection, whichever comes earlier, methods used to minimize the leak from essential components and critical components found leaking that cannot be repaired until the next process unit turnaround or not later than one year after leak detection, whichever comes earlier, the date of re-inspection and the leak concentration in ppmv after the component is repaired or is replaced, the inspector's name, business mailing address, and business telephone number, date and signature of the facility operator responsible for the inspection and repair program certifying the accuracy of the information recorded in the log. [District Rule 4401] Federally Enforceable Through Title V Permit
78. Permittee shall establish and implement an employee training program for inspecting and repairing components and recordkeeping procedures, as necessary. [District Rule 4401] Federally Enforceable Through Title V Permit
79. In accordance with the approved Operator Management Plan (OMP), permittee shall meet all applicable operating, leak standards, inspection and re-inspection, leak repair, record keeping, and notification requirements of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

80. By January 30 of each year, permittee shall submit to the APCO for approval, in writing, an annual report indicating any changes to the existing, approved OMP. [District Rule 4401] Federally Enforceable Through Title V Permit
81. The crude oil production from wells associated with this permit unit shall not lie within 1000 feet of an air injection well used for in-situ combustion. [District Rule 4407] Federally Enforceable Through Title V Permit
82. The concentration of sulfur compounds in the exhaust from this unit shall not exceed 0.2% by volume as measured on a dry basis over a 15 minute period. To demonstrate compliance with this requirement the operator shall do one of the following: fire the unit only on PUC or FERC regulated natural gas; or test the sulfur content of each fuel source and demonstrate the sulfur content does not exceed 3.3% by weight for gaseous fuels; or determine that the concentration of sulfur compounds in the exhaust does not exceed the concentration limit by a combination of source testing and fuel analysis. [District Rules 4801 and 2520] Federally Enforceable Through Title V Permit
83. The requirements of SJVUAPCD Rule 4407 (Adopted 5/19/94) and SJVUAPCD Rule 4801 (Adopted 12/17/92) do not apply to the well vents. For Rule 4801 applicability, well vent emissions are fugitive emissions not considered to come from a point source. A permit shield is granted from these requirements. [District Rule 2520] Federally Enforceable Through Title V Permit

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

San Joaquin Valley
Air Pollution Control District

PERMIT UNIT: S-1372-220-3

EXPIRATION DATE: 05/31/2021

SECTION: 6 **TOWNSHIP:** 30S **RANGE:** 22E

EQUIPMENT DESCRIPTION:

2,019 BBL FIXED ROOF CRUDE OIL STORAGE TANK (#8707)

PERMIT UNIT REQUIREMENTS

1. True vapor pressure of any organic liquid introduced to the tank shall not exceed 0.5 psia at liquid temperature. [District Rule 4623, 5.1] Federally Enforceable Through Title V Permit
2. This tank shall be equipped with a pressure-vacuum (PV) relief valve set to within 10% of the maximum allowable working pressure of the tank, permanently labeled with the operating pressure settings, properly maintained in good operating order in accordance with the manufacturer's instructions, and shall remain in leak-free condition except when the operating pressure exceeds the valve's set pressure. [District Rule 4623, 5.2] Federally Enforceable Through Title V Permit
3. The operator shall conduct a TVP testing of each uncontrolled fixed roof 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 each tank. In lieu of testing each uncontrolled fixed roof tank, an operator may conduct a TVP testing of a representative tank provided the requirements of Sections 6.2.1.1.1 through 6.2.1.1.5 are met. The operator shall also comply with Section 6.2.1.2. The operator shall submit the records of TVP and/or API gravity testing to the APCO as specified in Section 6.3.6. [District Rule 4623, 6.2.2] Federally Enforceable Through Title V Permit
4. The operator shall submit the records of TVP and API gravity testing conducted in accordance with the requirements of Section 6.2 to the APCO within 45 days after the date of testing. The record shall include the tank identification number, PTO number, type of stored organic liquid, TVP and API gravity of the stored organic liquid, test methods used, and a copy of the test results. [District Rule 4623, 6.3.6] Federally Enforceable Through Title V Permit
5. For crude oil with an API gravity of 26 degrees or less, the TVP shall be determined using the latest version of the Lawrence Berkeley National Laboratory "test Method for Vapor pressure of Reactive Organic Compounds in Heavy Crude Oil Using Gas Chromatograph", as approved by ARB and EPA. [District Rule 4623, 6.4.4] Federally Enforceable Through Title V Permit
6. The operator shall keep an accurate record of each organic liquid stored in each tank, including its storage temperature, TVP, and API gravity. Such records shall be retained for at least five years and made available to the District upon request. [District Rule 4623, 6.3.1] Federally Enforceable Through Title V Permit

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

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

PERMIT UNIT: S-1372-221-3

EXPIRATION DATE: 05/31/2021

SECTION: 6 **TOWNSHIP:** 30S **RANGE:** 22E

EQUIPMENT DESCRIPTION:

1,600 BBL FIXED ROOF CRUDE OIL STORAGE TANK (#10602)

PERMIT UNIT REQUIREMENTS

1. True vapor pressure of any organic liquid introduced to the tank shall not exceed 0.5 psia at liquid temperature. [District Rule 4623, 5.1] Federally Enforceable Through Title V Permit
2. This tank shall be equipped with a pressure-vacuum (PV) relief valve set to within 10% of the maximum allowable working pressure of the tank, permanently labeled with the operating pressure settings, properly maintained in good operating order in accordance with the manufacturer's instructions, and shall remain in leak-free condition except when the operating pressure exceeds the valve's set pressure. [District Rule 4623, 5.2] Federally Enforceable Through Title V Permit
3. The operator shall conduct a TVP testing of each uncontrolled fixed roof 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 each tank. In lieu of testing each uncontrolled fixed roof tank, an operator may conduct a TVP testing of a representative tank provided the requirements of Sections 6.2.1.1.1 through 6.2.1.1.5 are met. The operator shall also comply with Section 6.2.1.2. The operator shall submit the records of TVP and/or API gravity testing to the APCO as specified in Section 6.3.6. [District Rule 4623, 6.2.2] Federally Enforceable Through Title V Permit
4. The operator shall submit the records of TVP and API gravity testing conducted in accordance with the requirements of Section 6.2 to the APCO within 45 days after the date of testing. The record shall include the tank identification number, PTO number, type of stored organic liquid, TVP and API gravity of the stored organic liquid, test methods used, and a copy of the test results. [District Rule 4623, 6.3.6] Federally Enforceable Through Title V Permit
5. For crude oil with an API gravity of 26 degrees or less, the TVP shall be determined using the latest version of the Lawrence Berkeley National Laboratory "test Method for Vapor pressure of Reactive Organic Compounds in Heavy Crude Oil Using Gas Chromatograph", as approved by ARB and EPA. [District Rule 4623, 6.4.4] Federally Enforceable Through Title V Permit
6. The operator shall keep an accurate record of each organic liquid stored in each tank, including its storage temperature, TVP, and API gravity. Such records shall be retained for at least five years and made available to the District upon request. [District Rule 4623, 6.3.1] Federally Enforceable Through Title V Permit

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

San Joaquin Valley
Air Pollution Control District

PERMIT UNIT: S-1372-416-1

EXPIRATION DATE: 05/31/2021

SECTION: 6 **TOWNSHIP:** 30S **RANGE:** 22E

EQUIPMENT DESCRIPTION:

2000 BBL FIXED-ROOF CRUDE OIL STORAGE TANK WITH P/V VALVE (STAR FEE)

PERMIT UNIT REQUIREMENTS

1. Tank shall be operated at constant level. [District Rule 2201] Federally Enforceable Through Title V Permit
2. This tank shall only store, place, or hold organic liquid with a true vapor pressure (TVP) not exceeding 0.5 psia under all storage conditions. [District Rules 2201 and 4623] Federally Enforceable Through Title V Permit
3. The tank shall be equipped with a fixed roof with no holes or openings. [District Rule 2201] Federally Enforceable Through Title V Permit
4. This tank shall be equipped with a pressure-vacuum (PV) relief valve set to within 10% of the maximum allowable working pressure of the tank, permanently labeled with the operating pressure settings, properly maintained in good operating order in accordance with the manufacturer's instructions. [District Rule 2201] Federally Enforceable Through Title V Permit
5. Permittee shall conduct true vapor pressure (TVP) testing of the organic liquid stored in this tank upon initial start-up, at least once every 24 months during summer (July - September), and/or whenever there is a change in the source or type of organic liquid stored in this tank in order to maintain exemption from the rule. [District Rules 2201 and 4623] Federally Enforceable Through Title V Permit
6. 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
7. 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
8. 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] 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, TVP, and API gravity. [District Rules 2201 and 4623] Federally Enforceable Through Title V Permit

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

APPENDIX B

Emissions Calculations

Tank Input Data	
permit number (S-xxxx-xx-xx)	--
facility tank I.D.	-220-3
nearest city {1: Bakersfield, 2: Fresno, 3: Stockton}	1
tank ROC vapor pressure (psia)	0.5
liquid bulk storage temperature, Tb (°F)	120
is this a constant-level tank? {yes, no}	no
will flashing losses occur in this tank (only if first-line tank)? {yes, no}	no
breather vent pressure setting range (psi)	0.06
diameter of tank (feet)	29
capacity of tank (bbl)	2,000
conical or dome roof? {c, d}	c
shell height of tank (feet)	16
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)		2,000
maximum annual fluid throughput (bbl)	730,000	730,000
-----This row only used if flashing losses occur in this tank-----		100
-----This row only used if flashing losses occur in this tank-----		36,500
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 insolation factor, I (Btu/ft ² -day)		1648.9
atmospheric pressure, Pa (psia)		14.47
water vapor pressure at daily maximum liquid surface temperature (T _{lx}), P _{vx} (psia)	110.2	1.2859
water vapor pressure at daily minimum liquid surface temperature (T _{ln}), P _{vn} (psia)	99.4	0.9364
water vapor pressure at average liquid surface temperature (T _{la}), P _{va} (psia)	104.8	1.1080
roof outage, H _{ro} (feet)		0.3021
vapor space volume, V _v (cubic feet)		4823.17
paint factor, alpha		0.68
vapor density, W _v (lb/cubic foot)		0.0082
daily vapor temperature range, delta T _v (degrees Rankine)		49.04
vapor space expansion factor, K _e		0.1085

Results	lb/year	lb/day
Standing Storage Loss	1,575	4.32
Working Loss	36,500	100.00
Flashing Loss	N/A	N/A
Total Uncontrolled Tank VOC Emissions	38,075	104.3

Summary Table	
Permit Number	--
Facility Tank I.D.	-220-3
Tank capacity (bbl)	2,000
Tank diameter (ft)	29
Tank shell height (ft)	16
Conical or Dome Roof	Conical
Maximum Daily Fluid Throughput (bbl/day)	2,000
Maximum Annual Fluid Throughput (bbl/year)	730,000
Maximum Daily Oil Throughput (bbl/day)	N/A
Maximum Annual Oil Throughput (bbl/year)	N/A
Total Uncontrolled Daily Tank VOC Emissions (lb/day)	104.3
Total Uncontrolled Annual Tank VOC Emissions (lb/year)	38,075

Tank Input Data	
permit number (S-xxxx-xx-xx)	--
facility tank I.D.	221
nearest city {1: Bakersfield, 2: Fresno, 3: Stockton}	1
tank ROC vapor pressure (psia)	0.5
liquid bulk storage temperature, Tb (°F)	120
is this a constant-level tank? {yes, no}	no
will flashing losses occur in this tank (only if first-line tank)? {yes, no}	no
breather vent pressure setting range (psi)	0.06
diameter of tank (feet)	29
capacity of tank (bbl)	1,600
conical or dome roof? {c, d}	c
shell height of tank (feet)	16
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-----	1
-----This row only used if shell is different color from roof-----	1

Liquid Input Data	A	B
maximum daily fluid throughput (bbl)		1,600
maximum annual fluid throughput (bbl)	584,000	584,000
-----This row only used if flashing losses occur in this tank-----		100
-----This row only used if flashing losses occur in this tank-----		36,500
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, Pa (psia)		14.47
water vapor pressure at daily maximum liquid surface temperature (T _{ix}), P _{vx} (psia)	110.2	1.2859
water vapor pressure at daily minimum liquid surface temperature (T _{in}), P _{vn} (psia)	99.4	0.9364
water vapor pressure at average liquid surface temperature (T _{ia}), P _{va} (psia)	104.8	1.1080
roof outage, H _{ro} (feet)		0.3021
vapor space volume, V _v (cubic feet)		4823.17
paint factor, alpha		0.68
vapor density, W _v (lb/cubic foot)		0.0082
daily vapor temperature range, delta T _v (degrees Rankine)		49.04
vapor space expansion factor, K _e		0.1085

Results	lb/year	lb/day
Standing Storage Loss	1,575	4.32
Working Loss	29,200	80.00
Flashing Loss	N/A	N/A
Total Uncontrolled Tank VOC Emissions	30,775	84.3

Summary Table	
Permit Number	--
Facility Tank I.D.	221
Tank capacity (bbl)	1,600
Tank diameter (ft)	29
Tank shell height (ft)	16
Conical or Dome Roof	Conical
Maximum Daily Fluid Throughput (bbl/day)	1,600
Maximum Annual Fluid Throughput (bbl/year)	584,000
Maximum Daily Oil Throughput (bbl/day)	N/A
Maximum Annual Oil Throughput (bbl/year)	N/A
Total Uncontrolled Daily Tank VOC Emissions (lb/day)	84.3
Total Uncontrolled Annual Tank VOC Emissions (lb/year)	30,775

Tank Input Data	
permit number (S-xxxx-xx-xx)	--
facility tank I.D.	-416-1
nearest city {1: Bakersfield, 2: Fresno, 3: Stockton}	1
tank ROC vapor pressure (psia)	0.5
liquid bulk storage temperature, Tb (°F)	120
is this a constant-level tank? {yes, no}	no
will flashing losses occur in this tank (only if first-line tank)? {yes, no}	no
breather vent pressure setting range (psi)	0.06
diameter of tank (feet)	29
capacity of tank (bbl)	2,000
conical or dome roof? {c, d}	c
shell height of tank (feet)	16
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-----	1
-----This row only used if shell is different color from roof-----	1

Liquid Input Data	A	B
maximum daily fluid throughput (bbl)		2,000
maximum annual fluid throughput (bbl)	730,000	730,000
-----This row only used if flashing losses occur in this tank-----		100
-----This row only used if flashing losses occur in this tank-----		36,500
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 insolation factor, I (Btu/ft ² -day)		1648.9
atmospheric pressure, Pa (psia)		14.47
water vapor pressure at daily maximum liquid surface temperature (T _{lx}), P _{vx} (psia)	110.2	1.2859
water vapor pressure at daily minimum liquid surface temperature (T _{ln}), P _{vn} (psia)	99.4	0.9364
water vapor pressure at average liquid surface temperature (T _{la}), P _{va} (psia)	104.8	1.1080
roof outage, H _{ro} (feet)		0.3021
vapor space volume, V _v (cubic feet)		4823.17
paint factor, alpha		0.68
vapor density, W _v (lb/cubic foot)		0.0082
daily vapor temperature range, delta T _v (degrees Rankine)		49.04
vapor space expansion factor, K _e		0.1085

Results	lb/year	lb/day
Standing Storage Loss	1,575	4.32
Working Loss	36,500	100.00
Flashing Loss	N/A	N/A
Total Uncontrolled Tank VOC Emissions	38,075	104.3

Summary Table	
Permit Number	--
Facility Tank I.D.	-416-1
Tank capacity (bbl)	2,000
Tank diameter (ft)	29
Tank shell height (ft)	16
Conical or Dome Roof	Conical
Maximum Daily Fluid Throughput (bbl/day)	2,000
Maximum Annual Fluid Throughput (bbl/year)	730,000
Maximum Daily Oil Throughput (bbl/day)	N/A
Maximum Annual Oil Throughput (bbl/year)	N/A
Total Uncontrolled Daily Tank VOC Emissions (lb/day)	104.3
Total Uncontrolled Annual Tank VOC Emissions (lb/year)	38,075

Tank Input Data	
permit number (S-xxxx-xx-xx)	442
facility tank I.D.	--
nearest city {1: Bakersfield, 2: Fresno, 3: Stockton}	1
tank ROC vapor pressure (psia)	0.5
liquid bulk storage temperature, Tb (°F)	120
is this a constant-level tank? {yes, no}	no
will flashing losses occur in this tank (only if first-line tank)? {yes, no}	no
breather vent pressure setting range (psi)	0.06
diameter of tank (feet)	15
capacity of tank (bbl)	500
conical or dome roof? {c, d}	c
shell height of tank (feet)	16
average liquid height (feet)	8
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)		10
maximum annual fluid throughput (bbl)	3,650	3,650
-----This row only used if flashing losses occur in this tank-----		100
-----This row only used if flashing losses occur in this tank-----		36,500
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 insolation 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)	110.2	1.2859
water vapor pressure at daily minimum liquid surface temperature (T _{ln}), P _{vn} (psia)	99.4	0.9364
water vapor pressure at average liquid surface temperature (T _{la}), P _{va} (psia)	104.8	1.1080
roof outage, H _{ro} (feet)		0.1563
vapor space volume, V _v (cubic feet)		1441.33
paint factor, alpha		0.68
vapor density, W _v (lb/cubic foot)		0.0082
daily vapor temperature range, delta T _v (degrees Rankine)		49.04
vapor space expansion factor, K _e		0.1085

Results	lb/year	lb/day
Standing Storage Loss	471	1.29
Working Loss	183	0.50
Flashing Loss	N/A	N/A
Total Uncontrolled Tank VOC Emissions	653	1.8

Summary Table	
Permit Number	442
Facility Tank I.D.	--
Tank capacity (bbl)	500
Tank diameter (ft)	15
Tank shell height (ft)	16
Conical or Dome Roof	Conical
Maximum Daily Fluid Throughput (bbl/day)	10
Maximum Annual Fluid Throughput (bbl/year)	3,650
Maximum Daily Oil Throughput (bbl/day)	N/A
Maximum Annual Oil Throughput (bbl/year)	N/A
Total Uncontrolled Daily Tank VOC Emissions (lb/day)	1.8
Total Uncontrolled Annual Tank VOC Emissions (lb/year)	653

APPENDIX C

QNEC and Emissions Profiles

Quarterly Net Emissions Change (QNEC)

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

QNEC = PE2 - PE1, where:

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

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

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

S-1372-220-4: Quarterly NEC [QNEC]			
Pollutant	PE2 (lb./qtr.)	PE1 (lb./qtr.)	QNEC (lb./qtr.)
NO _x	0	0	0
SO _x	0	0	0
PM ₁₀	0	0	0
CO	0	0	0
VOC	9518	0	-9518

S-1372-324-4: Quarterly NEC [QNEC]			
Pollutant	PE2 (lb./qtr.)	PE1 (lb./qtr.)	QNEC (lb./qtr.)
NO _x	0	0	0
SO _x	0	0	0
PM ₁₀	0	0	0
CO	0	0	0
VOC	0	7694	-7694

S-1372-416-2: Quarterly NEC [QNEC]			
Pollutant	PE2 (lb./qtr.)	PE1 (lb./qtr.)	QNEC (lb./qtr.)
NO _x	0	0	0
SO _x	0	0	0
PM ₁₀	0	0	0
CO	0	0	0
VOC	0	9518	-9518

S-1372-441-0: Quarterly NEC [QNEC]			
Pollutant	PE2 (lb./qtr.)	PE1 (lb./qtr.)	QNEC (lb./qtr.)
NO _x	0	0	0
SO _x	0	0	0
PM ₁₀	0	0	0
CO	0	0	0
VOC	0	0	0

S-1372-442-0: Quarterly NEC [QNEC]			
Pollutant	PE2 (lb./qtr.)	PE1 (lb./qtr.)	QNEC (lb./qtr.)
NO _x	0	0	0
SO _x	0	0	0
PM ₁₀	0	0	0
CO	0	0	0
VOC	163	0	163

APPENDIX D BACT Guideline

San Joaquin Valley
Unified Air Pollution Control District

Best Available Control Technology (BACT) Guideline 7.3.1*

Last Update: 10/01/2002

**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

APPENDIX E 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 applicant submitted the capital cost for a vapor control system of \$250,000.

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)

$AP = (P) \{[(0.1) (1 + 0.1)^{10}]/[(1 + 0.1)^{10} - 1]\}$

$AP = (P) \times (0.16274) = (\$250,000) (0.16274) = \$40,685/\text{year}$

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

$\text{Tons/yr} = 653 \text{ lb/yr}/2000 \text{ lb/ton} = 0.327 \text{ tons/yr}$

$\text{Annualized cost} = \$40,685/\text{yr}/[0.327] \text{ tons/yr}$
 $= \$124,418/\text{ton}$

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, or

APPENDIX F

Compliance Certification



San Joaquin Valley Air Pollution Control District



TITLE V MODIFICATION - COMPLIANCE CERTIFICATION FORM

I. TYPE OF PERMIT ACTION (Check appropriate box)

ADMINISTRATIVE AMENDMENT MINOR MODIFICATION SIGNIFICANT MODIFICATION

COMPANY NAME: Sentinel Peak Resources California, LLC	FACILITY ID: S-1372
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: Sentinel Peak Resources California, LLC	
3. Agent to the Owner: Timothy Crawford	

II. COMPLIANCE CERTIFICATION (Read each statement carefully and initial applicable 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.
- For minor modifications, this application meets the criteria for use of minor permit modification procedures pursuant to District Rule 2520.

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

Timothy Crawford
Signature of Responsible Official

Timothy Crawford
Name of Responsible Official (please print)

Executive Vice President and Chief Operating
Title of Responsible Official (please print)
Officer

1-9-2020
Date

APPENDIX G

Health Risk

San Joaquin Valley Air Pollution Control District Risk Management Review

To: Stephen Leonard – Permit Services
 From: Keanu Morin – Technical Services
 Date: January 24, 2020
 Facility Name: Sentinel Peak Resources, CA
 Location: Latitude: 35.347015; Longitude: -119.659404
 Application #(s): S-1372-220-4, -221-4, -416-2, -441-0, -442-0
 Project #: S-1200016

Summary

RMR

Units	Prioritization Score	Acute Hazard Index	Chronic Hazard Index	Maximum Individual Cancer Risk	T-BACT Required	Special Permit Requirements
220-4	0.02	0.00	0.00	4.40E-10	No	No
221-4	0.01	0.00	0.00	1.98E-10	No	No
416-2	0.01	0.00	0.00	1.90E-10	No	No
441-0	0.01	0.00	0.00	2.14E-10	No	No
442-0	0.01	0.00	0.00	2.43E-10	No	No
Project Totals	0.05	0.00	0.00	1.29E-09		
Facility Totals	>1	0.17	0.06	3.47E-06		

1.

Proposed Permit Requirements

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

Unit # 220-4, 221-4, 416-2, 441-0, 442-0

1. No special requirements.

Project Description

Technical Services received a request on January 16, 2020 to perform a Risk Management Review (RMR) and Ambient Air Quality Analysis (AAQA). An AAQA was not performed for the following because there is no standard for Volatile Organic Compounds (VOC's). A Risk Management Review was performed for the following:

- Unit -220-4: MODIFICATION OF 2,019 BBL FIXED ROOF CRUDE OIL STORAGE TANK (#8707): ADD VAPOR RECOVERY SYSTEM ROUTED TO VAPOR RECOVERY SYSTEM LISTED ON S-1372-100
- Unit -221-4: MODIFICATION OF 1,600 BBL FIXED ROOF CRUDE OIL STORAGE TANK (#10602): INCREASE CAPACITY TO 2,000 BBLS AND CONNECT TO VAPOR RECOVERY SYSTEM LISTED ON S-1372-220
- Unit -416-2: MODIFICATION OF 2000 BBL FIXED-ROOF CRUDE OIL STORAGE TANK WITH P/V VALVE (STAR FEE): CONNECT TO VAPOR RECOVERY SYSTEM LISTED ON S-1372-220
- Unit -441-0: 5,000 BBL FIXED ROOF CRUDE OIL STORAGE/CLARIFIER TANK SERVED BY VAPOR RECOVERY SYSTEM LISTED ON S-1372-220
- Unit -442-0: 500 BBL FIXED ROOF CRUDE OIL DRAIN TANK WITH PVRV

RMR Report

Analysis

The District performed an analysis pursuant to the District's Risk Management Policy for Permitting New and Modified Sources (APR 1905, May 28, 2015) to determine the possible cancer and non-cancer health impact to the nearest resident or worksite. This policy requires that an assessment be performed on a unit by unit basis, project basis, and on a facility-wide basis. If a preliminary prioritization analysis demonstrates that:

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

Then, generally no further analysis is required.

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

If a refined assessment is greater than one in a million but less than 20 in one million for carcinogenic impacts (Cancer Risk) and less than 1.0 for the Acute and Chronic hazard indices (Non-Carcinogenic) on a unit by unit basis, project basis and on a facility-wide basis the proposed application is considered less than significant. For unit's that exceed a cancer risk of 1 in one million, Toxic Best Available Control Technology (TBACT) must be implemented. Toxic emissions for this project were calculated using the following methods:

- Toxic emissions from Oilfield Fugitives were calculated using emission factors derived from 1991 source tests of central valley sites.

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

The AERMOD model was used, with the parameters outlined below and meteorological data for 2004-2008 from Missouri Triangle (rural dispersion coefficient selected) to determine the dispersion factors (i.e., the predicted concentration or X divided by the normalized source strength or Q) for a receptor grid. These dispersion factors were input into the SHARP Program, which then used the Air Dispersion Modeling and Risk Tool (ADMRT) of the Hot Spots Analysis and Reporting Program Version 2 (HARP 2) to calculate the chronic and acute hazard indices and the carcinogenic risk for the project.

The following parameters were used for the review:

Source Process Rates					
Unit ID	Process ID	Process Material	Process Units	Hourly Process Rate	Annual Process Rate
220-4	1	VOC	Lbs.	0.0108	95
221-4	1	VOC	Lbs.	0.005	44
416-2	1	VOC	Lbs.	0.005	44
441-0	1	VOC	Lbs.	0.005	44
442-0	1	VOC	Lbs.	0.005	44

Circular Area Source Parameters				
Unit ID	Unit Description	Release Height (m)	Radius (m)	Area (m ²)
220-4	2019 BBL Stock Tank	2.44	4.37	60.0
221-4	2000 BBL Stock Tank	2.44	4.26	57.0
416-2	2000 BBL Stock Tank	2.44	4.87	74.5
441-0	5000 Clarification Tank	2.44	5.62	99.2
442-0	500 Drain Tank	2.44	3.10	30.2

Conclusion

RMR

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

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

Attachments

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

APPENDIX H
Draft ATCs

*San Joaquin Valley
Air Pollution Control District*

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: S-1372-100-36

LEGAL OWNER OR OPERATOR: SENTINEL PEAK RESOURCES CA LLC
MAILING ADDRESS: 1200 DISCOVERY DR, STE 500
BAKERSFIELD, CA 93309

LOCATION: HEAVY OIL WESTERN STATIONARY SOURCE
CA

SECTION: 06 **TOWNSHIP:** 30S **RANGE:** 22E

EQUIPMENT DESCRIPTION:

MODIFICATION OF TEOR OPERATION WITH WELL CASING COLLECTION SYSTEM WITH VAPOR PIPING TO UNIT S-1372-99 SERVING 633 STEAM ENHANCED WELLS WITH 3-PHASE SEPARATORS, STANDBY FLARE, SLUG CATCHER, SCRUBBERS, HEAT EXCHANGERS, COMPRESSORS, PUMPS, SULFA CHECK AND LIQUID SULFUR REMOVAL SYSTEMS (GAMBLE/MCKITTRICK FRONT): CONNECT THE TANK VAPOR RECOVERY LISTED ON PERMIT S-1372-220 TO THE CASING COLLECTION SYSTEM

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. The VOC content of the gas shall not exceed 10% by weight. [District Rule 2201] Federally Enforceable Through Title V Permit
4. Operator shall conduct quarterly gas sampling for gas exiting the separator pressure vessel to qualify for exemption from fugitive component counts for components handling fluids with VOC content equal to or less than 10% by weight. If gas samples are equal to or less than 10% VOC by weight for 8 consecutive quarterly samplings, sampling frequency shall only be required annually. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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

Samir Sheikh, Executive Director / APCO

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Arnaud Marjolle, Director of Permit Services

S-1372-100-36 : Feb 21 2020 10:40AM - DAVIDSOS : Joint Inspection NOT Required

5. All records shall be maintained and retained on-site for a period of at least 5 years and shall be made available for District inspection upon request. [District Rule 1070 and 2201] Federally Enforceable Through Title V Permit
6. Operation shall include the following equipment: 633 steam enhanced wells, well vent vapor collection system, standby flare, slug catchers, heat exchangers, compressors, pumps, vapor piping, dry fuel gas sulfur scrubbing system and liquid sulfur removal systems, tanks and 3-phase separators. [District Rule 2201] Federally Enforceable Through Title V Permit
7. Operation shall include vapor piping from tanks S-1372-128, -323-4, -412, S-1641-34, -35, -36, and -37 to vapor control system. [District Rule 2201] Federally Enforceable Through Title V Permit
8. At least one sulfur removal system shall be operated at all times. [District Rule 2201] Federally Enforceable Through Title V Permit
9. There shall be no leaks exceeding 10,000 ppmv from fugitive emissions components associated with liquid sulfur removal system. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Collected condensate shall be discharged into production pipeline. [District Rule 2201] Federally Enforceable Through Title V Permit
11. Flare S-1372-100 shall only be used to incinerate TEOR vapors when one or more of steam generators S-1372-1, -2 or -4 are not in operation. [District Rule 2201] Federally Enforceable Through Title V Permit
12. Flare shall only use PUC quality natural gas as auxiliary fuel. [District Rule 2201] Federally Enforceable Through Title V Permit
13. Flare shall be designed for smokeless operation, with no visible emissions in excess of 5% opacity. [District Rule 2201] Federally Enforceable Through Title V Permit
14. The flare shall be operated according to the manufacturer's specifications, a copy of which shall be maintained on site. [District Rule 2520] Federally Enforceable Through Title V Permit
15. The flare in this permit shall be inspected every two weeks while in operation for visible emissions. If visible emissions are observed, corrective action shall be taken. If visible emissions continue, an EPA method 9 test shall be conducted within 72 hours. [District Rule 2520] Federally Enforceable Through Title V Permit
16. Flare shall comply with all of the applicable requirements of Rule 4311. [District Rule 4311] Federally Enforceable Through Title V Permit
17. The flame shall be present at all times when combustible gases are vented through the flare. [District Rule 4311] Federally Enforceable Through Title V Permit
18. The flare outlet shall be equipped with an automatic ignition system, or, shall operate with a pilot flame present at all times when combustible gases are vented through the flare, except during purge periods for automatic-ignition equipped flares. [District Rule 4311] Federally Enforceable Through Title V Permit
19. Except for flares equipped with a flow-sensing ignition system, a heat sensing device such as a thermocouple, ultraviolet beam sensor, infrared sensor, or an equivalent device, capable of continuously detecting at least one pilot flame or the flare flame is present shall be installed and operated. [District Rule 4311] Federally Enforceable Through Title V Permit
20. Flares using flow-sensing automatic ignition systems and not using a continuous flame pilot shall use purge gas for purging. [District Rule 4311] Federally Enforceable Through Title V Permit
21. Open flares (air-assisted, steam-assisted, or non-assisted) in which the flare gas pressure is less than 5 psig shall be operated in such a manner that meets the provisions of 40 CFR 60.18. [District Rule 4311] Federally Enforceable Through Title V Permit
22. Flaring is prohibited unless it is consistent with an approved flare minimization plan (FMP), pursuant to Rule 4311, Section 6.5, and all commitments listed in that plan have been met. This standard shall not apply if the APCO determines that the flaring is caused by an emergency as defined by Section 3.7 and is necessary to prevent an accident, hazard or release of vent gas directly to the atmosphere. [District Rule 4311] Federally Enforceable Through Title V Permit

23. The operator of a flare subject to flare minimization requirements pursuant to Section 5.8 shall monitor the vent gas flow to the flare with a flow measuring device or other parameters as specified in the Permit to Operate. The operator shall maintain records pursuant to Section 6.1.7. Flares that the operator can verify, based on permit conditions, are not capable of producing reportable flare events pursuant to Section 6.2.2 shall not be required to monitor vent gas flow to the flare. [District Rule 4311] Federally Enforceable Through Title V Permit
24. The following records shall be maintained, retained on-site for a minimum of five years, and made available to the APCO, ARB, and EPA upon request: 1) A copy of the compliance determination conducted pursuant to Section 6.4.1, 2) For flares used during an emergency, record of the duration of flare operation, amount of gas burned, and the nature of the emergency situation, 3) A copy of the approved flare minimization plan pursuant to Section 6.5, 4) On and after July 1, 2012, where applicable, a copy of annual reports submitted to the APCO pursuant to Section 6.2, and 5) Where applicable, monitoring data collected pursuant to Sections 5.10. [District Rule 4311] Federally Enforceable Through Title V Permit
25. The operator of a flare subject to flare minimization plans pursuant to Section 5.8 of Rule 4311 shall notify the APCO of an unplanned flaring event within 24 hours after the start of the next business day or within 24 hours of their discovery, whichever ever occurs first. The notification shall include the flare source identification, the start date and time, and the end date and time. [District Rule 4311] Federally Enforceable Through Title V Permit
26. Effective on and after July 1, 2012, and annually thereafter, the operator of a flare subject to flare minimization plans pursuant to Section 5.8 shall submit an annual report to the APCO that summarizes all Reportable Flaring Events as defined in Section 3.0 that occurred during the previous 12 month period. The report shall be submitted within 30 days following the end of the twelve month period of the previous year. The report shall include, but is not limited to all of the following: 1) The results of an investigation to determine the primary cause and contributing factors of the flaring event; 2) Any prevention measures considered or implemented to prevent recurrence together with a justification for rejecting any measures that were considered but not implemented; 3) If appropriate, an explanation of why the flaring was an emergency and necessary to prevent accident, hazard or release of vent gas to the atmosphere, or where, due to a regulatory mandate to vent a flare, it cannot be recovered, treated and used as a fuel gas at the facility; and 4) The date, time, and duration of the flaring event. [District Rule 4311] Federally Enforceable Through Title V Permit
27. Effective on and after July 1, 2012, and annually thereafter, the operator of a flare subject to flare monitoring requirements pursuant to Rule 4311, Sections 5.10, 6.6, 6.7, 6.8, 6.9, and 6.10, as appropriate, shall submit an annual report to the APCO within 30 days following the end of each 12 month period. The report shall include the following: 1) The total volumetric flow of vent gas in standard cubic feet for each day, 2) Hydrogen sulfide content, methane content, and hydrocarbon content of vent gas composition pursuant to Section 6.6, 3) If vent gas composition is monitored by a continuous analyzer or analyzers pursuant to Section 5.11, average total hydrocarbon content by volume, average methane content by volume, and depending upon the analytical method used pursuant to Section 6.3.4, total reduced sulfur content by volume or hydrogen sulfide content by volume of vent gas flared for each hour of the month, 4) If the flow monitor used pursuant to Section 5.10 measures molecular weight, the average molecular weight for each hour of each month, 5) For any pilot and purge gas used, the type of gas used, the volumetric flow for each day and for each month, and the means used to determine flow, 6) Flare monitoring system downtime periods, including dates and times, 7) For each day and for each month provide calculated sulfur dioxide emissions, and 8) A flow verification report for each flare subject to this rule. The flow verification report shall include flow verification testing pursuant to Section 6.3.5. [District Rule 4311] Federally Enforceable Through Title V Permit
28. Total hydrocarbon content and methane content of vent gas shall be determined using ASTM Method D 1945-96, ASTM Method UOP 539-97, EPA Method 18, or EPA Method 25A or 25B. Hydrogen sulfide content of vent gas shall be determined using ASTM Method D 1945-96, ASTM Method UOP 539-97, ASTM Method D 4084-94, or ASTM Method D 4810-88. [District Rule 4311] Federally Enforceable Through Title V Permit
29. Upon request, the operator of flares that are subject to Section 5.6 shall make available to the APCO the compliance determination records that demonstrate compliance with the provisions of 40 CFR 60.18, (c)(3) through (c)(5). [District Rule 4311] Federally Enforceable Through Title V Permit
30. Operator shall monitor vent gas composition using one of the five methods pursuant to Section 6.6.1 through Section 6.6.5, as appropriate. [District Rule 4311] Federally Enforceable Through Title V Permit

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31. Operator shall monitor the volumetric flows of purge and pilot gases with flow measuring devices or other parameters as specified on the Permit to Operate so that volumetric flows of pilot and purge gas may be calculated based on pilot design and the parameters monitored. [District Rule 4311] Federally Enforceable Through Title V Permit
32. All of the general monitoring provisions of Section 6.9, as applicable, shall be met. [District Rule 4311] Federally Enforceable Through Title V Permit
33. Operator shall install and maintain equipment that records a real-time digital image of the flare and flame at a frame rate of no less than one frame per minute. The recorded image of the flare shall be of sufficient size, contrast, and resolution to be readily apparent in the overall image or frame. The image shall include an embedded date and time stamp. The equipment shall archive the images for each 24-hour period. In lieu of video monitoring the operator may use an alternative monitoring method that provides data to verify date, time, vent gas flow, and duration of flaring events. [District Rule 4311] Federally Enforceable Through Title V Permit
34. Vapors from this well vent vapor control system shall be incinerated in steam generators S-1372-1, -2, -4, -30, -32, -33, -127, -317, -334 or standby flare and/or injected into DOGGR approved gas injection wells. [District Rule 2201] Federally Enforceable Through Title V Permit
35. Total sulfur oxide (SOx as SO2) emissions shall not exceed 1,075.2 lb/day for the following steam generators: S-1372-1, -2, -4, -127, -317, and standby flare. [District Rule 2201] Federally Enforceable Through Title V Permit
36. Fugitive emissions from vapor collection and control system shall not exceed 239.6 lb VOC/day. [District Rule 2201] Federally Enforceable Through Title V Permit
37. There shall be no more than 30 gas leaks. [District Rule 2201] Federally Enforceable Through Title V Permit
38. Permittee shall maintain accurate records of well casing vapor H2S concentration (periodic sampling of no less than once per month), daily volume of casing vapor incinerated, and calculated daily SO2 emissions from S-1372-1, -2, and -4. [District Rules 1070 and 2520] Federally Enforceable Through Title V Permit
39. Permittee shall maintain with the permit a current listing of all steam enhanced wells connected to the casing vent control system and shall make such listing readily available for District inspection upon request. [District Rule 2201] Federally Enforceable Through Title V Permit
40. Permittee shall maintain accurate component count for TEOR operation according to CAPCOA's "California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities," Table IV-2c (Feb 1999), Screening Value Range emission factors. Permittee shall update such records when new components are installed. [District Rule 2201] Federally Enforceable Through Title V Permit
41. The following test method shall be used for fuel gas sulfur content - ASTM D3246 or double GC for H2S and mercaptans. [District Rule 2520] Federally Enforceable Through Title V Permit
42. All required source testing shall conform to the compliance testing procedures described in District Rule 1081(amended December 16, 1993). [District Rule 1081] Federally Enforceable Through Title V Permit
43. During the time any steam-enhanced crude oil production well is undergoing service or repair while the well is not producing, it shall be exempt from the emission control requirements of District Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
44. The inspection requirements of Section 5.4.1 through Section 5.4.7 of Rule 4401 shall not apply to components exclusively handling gas/vapor or liquid with a VOC content of ten percent by weight (10%) or less, as determined by the test methods in Section 6.3.4 of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
45. Gas and liquid leaks are as defined in Section 3.20 of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit

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46. An operator shall not operate a steam-enhanced crude oil production well unless the operator complies with either of the following requirements: The steam-enhanced crude oil production well vent is closed and the front line production equipment downstream of the wells that carry produced fluids (crude oil or mixture of crude oil and water) is connected to a VOC collection and control system as defined in Section 3.0 of Rule 4401, the well vent may be temporarily opened during periods of attended service or repair of the well provided such activity is done as expeditiously as possible with minimal spillage of material and VOC emissions to the atmosphere, or the steam-enhanced crude oil production well vent is open and the well vent is connected to a VOC collection and control system as defined in Section 3.0 of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
47. An operator shall be in violation of this rule if any District inspection demonstrates or if any operator inspection conducted pursuant to Section 5.4 of Rule 4401 demonstrates the existence of an open-ended line or a valve located at the end of the line that is not sealed with a blind flange, plug, cap, or a second closed valve that is not closed at all times, except during attended operations as defined by Section 5.2.2.1 of Rule 4401 requiring process fluid flow through the open-ended lines, a component with a major liquid leak, or a component with a gas leak greater than 50,000 ppmv. [District Rule 4401] Federally Enforceable Through Title V Permit
48. An operator shall be in violation of this rule if any District inspection demonstrates or if any operator inspection conducted pursuant to Section 5.4 of Rule 4401 demonstrates the existence of any combination of components with minor liquid leaks, minor gas leaks, or a gas leaks greater than 10,000 ppmv up to 50,000 ppmv that totals more than number of leaks allowed by Table 2 of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
49. An operator shall not use any component with a leak as defined in Section 3.0 of Rule 4401, or that is found to be in violation of the provisions of Section 5.2.2 of Rule 4401. However, components that were found leaking may be used provided such leaking components have been identified with a tag for repair, are repaired, or awaiting re-inspection after being repaired within the applicable time frame specified in Section 5.5 of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
50. Each hatch shall be closed at all times except during sampling or adding of process material through the hatch, or during attended repair, replacement, or maintenance operations, provided such activities are done as expeditiously as possible with minimal spillage of material and VOC emissions to the atmosphere. [District Rule 4401] Federally Enforceable Through Title V Permit
51. An operator shall comply with the requirements of Section 6.7 of Rule 4401 if there is any change in the description of major components or critical components. [District Rule 4401] Federally Enforceable Through Title V Permit
52. Except for pipes and unsafe-to-monitor components, an operator shall inspect all other components pursuant to the requirements of Section 6.3.3 of Rule 4401 at least once every year. [District Rule 4401] Federally Enforceable Through Title V Permit
53. An operator shall visually inspect all pipes at least once every year. Any visual inspection of pipes that indicates a leak that cannot be immediately repaired to meet the leak standards of this rule shall be inspected within 24 hours after detecting the leak. If a leak is found, the leak shall be repaired as soon as practicable but not later than the time frame specified in Table 3 of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
54. In addition to the inspections required by Section 5.4.1 of Rule 4401, an operator shall inspect for leaks all accessible operating pumps, compressors, and PRDs in service as follows: An operator shall audio-visually (by hearing and by sight) inspect for leaks all accessible operating pumps, compressors, and PRDs in service at least once each calendar week. Any audio-visual inspection of an accessible operating pump, compressor, and PRD performed by an operator that indicates a leak that cannot be immediately repaired to meet the leak standards of this rule shall be inspected not later than 24 hours after conducting the audio-visual inspection. If a leak is found, the leak shall be repaired as soon as practicable but not later than the time frame specified in Table 3 of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit

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55. In addition to the inspections required by Sections 5.4.1, 5.4.2 and 5.4.3 of Rule 4401, operator shall perform the following: initially inspect a PRD that releases to the atmosphere as soon as practicable but not later than 24 hours after the discovery of the release, re-inspect the PRD not earlier than 24 hours after the initial inspection but not later than 15 calendar days after the initial inspection, inspect all new, replaced, or repaired fittings, flanges, and threaded connections within 72 hours of placing the component in service. Except for PRDs subject to the requirements of Section 5.4.4.1 of Rule 4401, an operator shall inspect a component that has been repaired or replaced not later than 15 calendar days after the component was repaired or replaced. [District Rule 4401] Federally Enforceable Through Title V Permit
56. An operator shall inspect all unsafe-to-monitor components during each turnaround. [District Rule 4401] Federally Enforceable Through Title V Permit
57. District inspection in no way fulfills any of the mandatory inspection requirements that are placed upon operators and cannot be used or counted as an inspection required of an operator. [District Rule 4401] Federally Enforceable Through Title V Permit
58. An operator shall affix a readily visible weatherproof tag to a leaking component upon detection of the leak and shall include the following information on the tag: date and time of leak detection, date and time of leak measurement, for a gaseous leak, the leak concentration in ppmv, for a liquid leak, whether it is a major liquid leak or a minor liquid leak, whether the component is an essential component, an unsafe-to monitor component, or a critical component. [District Rule 4401] Federally Enforceable Through Title V Permit
59. An operator shall keep the tag affixed to the component until an operator has met all of the following conditions: repaired or replaced the leaking component, re-inspected the component using the test method in Section 6.3.3, and the component is found to be in compliance with the requirements of this rule. [District Rule 4401] Federally Enforceable Through Title V Permit
60. An operator shall minimize a component leak in order to stop or reduce leakage to the atmosphere immediately to the extent possible, but not later than one (1) hour after detection of the leak. [District Rule 4401] Federally Enforceable Through Title V Permit
61. Except for leaking critical components or leaking essential components subject to the requirements of Section 5.5.7 of Rule 4401, if an operator has minimized a leak but the leak still exceeds the applicable leak limits as defined in Section 3.0 of Rule 4401, an operator shall comply with at least one of the following requirements as soon as practicable but not later than the time period specified in Table 3 of Rule 4401: Repair or replace the leaking component; or vent the leaking component to a VOC collection and control system as defined in Section 3.0 of Rule 4401, or remove the leaking component from operation. [District Rule 4401] Federally Enforceable Through Title V Permit
62. The repair period in calendar days shall not exceed 14 days for minor gas leaks, 5 days for major gas leaks less than or equal to 50,000 ppmv, 2 days for gas leak greater than 50,000 ppmv, 3 days for minor liquid leaks, 2 days for major liquid leaks. [District Rule 4401] Federally Enforceable Through Title V Permit
63. The leak rate measured after leak minimization has been performed shall be the leak rate used to determine the applicable repair period specified in Table 3 of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
64. The time of the initial leak detection shall be the start of the repair period specified in Table 3 of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
65. If the leaking component is an essential component or a critical component that cannot be immediately shut down for repairs, and if the leak has been minimized but the leak still exceeds the applicable leak standard of this rule, the operator shall repair or replace the essential component or critical component to eliminate the leak during the next process unit turnaround, but in no case later than one year from the date of the original leak detection, whichever comes earlier. [District Rule 4401] Federally Enforceable Through Title V Permit
66. The operator of any steam-enhanced crude oil production well shall maintain records of the date and well identification where steam injection or well stimulation occurs. [District Rule 4401] Federally Enforceable Through Title V Permit
67. An operator of any steam-enhanced crude oil production well shall keep source test records which demonstrate compliance with the control efficiency requirements of the VOC collection and control system as defined in Section 3.0 of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit

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68. Operator of any steam-enhanced crude oil production well shall keep an inspection log maintained pursuant to Section 6.4 of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
69. Records of each calibration of the portable hydrocarbon detection instrument utilized for inspecting components, including a copy of current calibration gas certification from the vendor of said calibration gas cylinder, the date of calibration, concentration of calibration gas, instrument reading of calibration gas before adjustment, instrument reading of calibration gas after adjustment, calibration gas expiration date, and calibration gas cylinder pressure at the time of calibration shall be maintained. [District Rule 4401] Federally Enforceable Through Title V Permit
70. An operator shall maintain copies at the facility of the training records of the training program operated pursuant to Section 6.5 of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
71. Operator shall keep a copy of the APCO-approved Operator Management Plan at the facility. [District Rule 4401] Federally Enforceable Through Title V Permit
72. Operator shall keep a list of all gauge tanks, as defined in Section 3.17 of Rule 4401. The list shall contain the size, identification number, the location of each gauge tank and specify whether the gauge tank is upstream of all front line production equipment. [District Rule 4401] Federally Enforceable Through Title V Permit
73. An operator that discovers that a PRD has released shall record the date that the release was discovered, and the identity and location of the PRD that released. An operator shall submit such information recorded during the calendar year to the APCO no later than 60 days after the end of the calendar year. [District Rule 4401] Federally Enforceable Through Title V Permit
74. An operator shall source test annually all vapor collection and control systems used to control emissions from steam-enhanced crude oil production well vents to determine the control efficiency of the device(s) used for destruction or removal of VOC. Compliance testing shall be performed annually by source testers certified by ARB. Testing shall be performed during June, July, August, or September of each year if the system's control efficiency is dependent upon ambient air temperature. A process system as defined in Section 3.30 of Rule 4401 is not subject to compliance source testing requirements. [District Rule 4401] Federally Enforceable Through Title V Permit
75. If approved by EPA, ARB, and the APCO, an operator need not comply with the annual testing requirement of Section 6.2.1 if all uncondensed VOC emissions collected by a vapor collection are controlled by an internal combustion engine subject to Rule 4702, a combustion device subject to Rule 4320, 4307 or 4308, a flare subject to Rule 4311. [District Rule 4401] Federally Enforceable Through Title V Permit
76. An operator shall comply with the following requirements for each gauge tank, as defined in Section 3.17 of Rule 4401: Conduct periodic TVP testing of each gauge tank at least once every 24 months during summer (July - September), and whenever there is a change in the source or type of produced fluid in the gauge tank. The TVP testing shall be conducted at the actual storage temperature of the produced fluid in the gauge tank using the applicable TVP test method specified in Section 6.4 of Rule 4623 (Storage of Organic Liquids). The operator shall submit the TVP testing results to the APCO as specified in Section 6.1.9 of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
77. The control efficiency of any VOC control device, measured and calculated as carbon, shall be determined by EPA Method 25, except when the outlet concentration must be below 50 ppm in order to meet the standard, in which case EPA Method 25a may be used. EPA Method 18 may be used in lieu of EPA Method 25 or EPA Method 25a provided the identity and approximate concentrations of the analytes/compounds in the sample gas stream are known before analysis with the gas chromatograph and the gas chromatograph is calibrated for each of those known analyte/compound to ensure that the VOC concentrations are neither under- or over-reported. [District Rule 4401] Federally Enforceable Through Title V Permit
78. VOC content shall be analyzed by using the latest revision of ASTM Method E168, E169, or E260 as applicable. Analysis of halogenated exempt compounds shall be performed by using ARB Method 432. [District Rule 4401] Federally Enforceable Through Title V Permit

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79. Leak inspection, other than audio-visual, and measurements of gaseous leak concentrations shall be conducted according to EPA Method 21 using an appropriate portable hydrocarbon detection instrument calibrated with methane. The instrument shall be calibrated in accordance with the procedures specified in EPA Method 21 or the manufacturer's instruction, as appropriate, not more than 30 days prior to its use. The operator shall record the calibration date of the instrument. Where safety is a concern, such as measuring leaks from compressor seals or pump seals when the shaft is rotating, a person shall measure leaks by placing the instrument probe inlet at a distance of one (1) centimeter or less from the surface of the component interface. [District Rule 4401] Federally Enforceable Through Title V Permit
80. The VOC content by weight percent (wt.%) shall be determined using American Society of Testing and Materials (ASTM) D1945 for gases and South Coast Air Quality Management District (SCAQMD) Method 304-91 or the latest revision of ASTM Method E168, E169 or E260 for liquids. [District Rule 4401] Federally Enforceable Through Title V Permit
81. Operator shall maintain an inspection log in which an operator records, at a minimum, all of the following information for each inspection performed: The total number of components inspected, total number and percentage of leaking components found by component type, location, type, and name or description of each leaking component and description of any unit where the leaking component is found, date of leak detection and the method of leak detection. For gaseous leaks, the leak concentration in ppmv, and for liquid leaks record whether the leak is a major liquid leak or a minor liquid leak. the date of repair, replacement, or removal from operation of leaking components, identify and location of essential components and critical components found leaking that cannot be repaired until the next process unit turnaround or not later than one year after leak detection, whichever comes earlier, methods used to minimize the leak from essential components and critical components found leaking that cannot be repaired until the next process unit turnaround or not later than one year after leak detection, whichever comes earlier, the date of re-inspection and the leak concentration in ppmv after the component is repaired or is replaced, the inspector's name, business mailing address, and business telephone number, date and signature of the facility operator responsible for the inspection and repair program certifying the accuracy of the information recorded in the log. [District Rule 4401] Federally Enforceable Through Title V Permit
82. Permittee shall establish and implement an employee training program for inspecting and repairing components and recordkeeping procedures, as necessary. [District Rule 4401] Federally Enforceable Through Title V Permit
83. In accordance with the approved Operator Management Plan (OMP), permittee shall meet all applicable operating, leak standards, inspection and re-inspection, leak repair, record keeping, and notification requirements of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
84. By January 30 of each year, permittee shall submit to the APCO for approval, in writing, an annual report indicating any changes to the existing, approved OMP. [District Rule 4401] Federally Enforceable Through Title V Permit
85. The crude oil production from wells associated with this permit unit shall not lie within 1000 feet of an air injection well used for in-situ combustion. [District Rule 4407] Federally Enforceable Through Title V Permit
86. The concentration of sulfur compounds in the exhaust from this unit shall not exceed 0.2% by volume as measured on a dry basis over a 15 minute period. To demonstrate compliance with this requirement the operator shall do one of the following: fire the unit only on PUC or FERC regulated natural gas; or test the sulfur content of each fuel source and demonstrate the sulfur content does not exceed 3.3% by weight for gaseous fuels; or determine that the concentration of sulfur compounds in the exhaust does not exceed the concentration limit by a combination of source testing and fuel analysis. [District Rules 4801 and 2520] Federally Enforceable Through Title V Permit
87. The requirements of SJVUAPCD Rule 4407 (Adopted 5/19/94) and SJVUAPCD Rule 4801 (Adopted 12/17/92) do not apply to the well vents. For Rule 4801 applicability, well vent emissions are fugitive emissions not considered to come from a point source. A permit shield is granted from these requirements. [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

PERMIT NO: S-1372-220-4

LEGAL OWNER OR OPERATOR: SENTINEL PEAK RESOURCES CA LLC

MAILING ADDRESS: 1200 DISCOVERY DR, STE 500
BAKERSFIELD, CA 93309

LOCATION: HEAVY OIL WESTERN STATIONARY SOURCE
CA

SECTION: 6 **TOWNSHIP:** 30S **RANGE:** 22E

EQUIPMENT DESCRIPTION:

MODIFICATION OF 2,019 BBL FIXED ROOF CRUDE OIL STORAGE TANK (#8707): ADD VAPOR RECOVERY SYSTEM VENTED TO VAPOR RECOVERY SYSTEM LISTED ON S-1372-100

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 VOC content of the gas shall not exceed 10% by weight. [District Rule 2201] Federally Enforceable Through Title V Permit
4. This tank shall only store, place, or hold organic liquid with a true vapor pressure (TVP) of less than 0.5 psia under all storage conditions. [District Rule 4623, 5.1] Federally Enforceable Through Title V Permit
5. Except during maintenance, vessel shall be connected to the vapor collection system listed on S-1372-100. [17 CCR 95668]

CONDITIONS CONTINUE ON NEXT PAGE

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

Samir Sheikh, Executive Director / APCO

Arnaud Marjolle, Director of Permit Services

S-1372-220-4 : Feb 21 2020 10:40AM - DAVIDSOS : Joint Inspection NOT Required

6. The vapors may only be vented to a non-destructive vapor control device that achieves at least 95 percent vapor control efficiency of total emissions and does not result in emissions of nitrogen oxides (NO_x); or, a vapor control device that achieves at least 95 percent vapor control efficiency of total emissions and does not generate more than 15 parts per million volume (ppmv) NO_x when measured at 3 percent oxygen and does not require the use of supplemental fuel gas, other than gas required for a pilot burner, to operate. [17 CCR 95671]
7. Vapor collection systems and control devices are allowed to be taken out of service for up to 30 calendar days per calendar year for performing maintenance. In lieu of taking the vapor collection systems and control devices out of service, the vapors may be vented to the standby flare listed on permit S-1372-100. A time extension to perform maintenance not to exceed 14 calendar days per calendar year may be granted by the ARB Executive Officer. The owner or operator is responsible for maintaining a record of the number of calendar days per calendar year that the vapor collection system or vapor control device is out of service and shall provide a record of such activity at the request of the District. If an alternate vapor control device compliant with 17 CCR Section 95671 is installed prior to conducting maintenance and the vapor collection and control system continues to collect and control vapors during the maintenance operation consistent with the applicable standards specified in 17 CCR Section 95671, the event does not count towards the 30 calendar day limit. Vapor collection system and control device shutdowns that result from utility power outages are not subject to enforcement action provided the equipment resumes normal operation as soon as normal utility power is restored. Vapor collection system and control device shutdowns that result from utility power outages do not count towards the 30 calendar day limit for maintenance. [17 CCR 95671(f)(1)(2)(3)]
8. Fugitive emissions inspections and repairs pursuant to Leak Detection and Repair 17 CCR 95669 shall be implemented for subject equipment. [17 CCR 95669]
9. Operator shall conduct quarterly gas sampling for gas exiting the separator pressure vessel to qualify for exemption from fugitive component counts for components handling fluids with VOC content equal to or less than 10% by weight. If gas samples are equal to or less than 10% VOC by weight for 8 consecutive quarterly samplings, sampling frequency shall only be required annually. [District Rule 2201] Federally Enforceable Through Title V Permit
10. All records shall be maintained and retained on-site for a period of at least 5 years and shall be made available for District inspection upon request. [District Rule 1070 and 2201] Federally Enforceable Through Title V Permit

DRAFT

*San Joaquin Valley
Air Pollution Control District*

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT
DRAFT

PERMIT NO: S-1372-221-4

LEGAL OWNER OR OPERATOR: SENTINEL PEAK RESOURCES CA LLC
MAILING ADDRESS: 1200 DISCOVERY DR, STE 500
BAKERSFIELD, CA 93309

LOCATION: HEAVY OIL WESTERN STATIONARY SOURCE
CA

SECTION: 6 TOWNSHIP: 30S RANGE: 22E

EQUIPMENT DESCRIPTION:

MODIFICATION OF 1,600 BBL FIXED ROOF CRUDE OIL STORAGE TANK (#10602): INCREASE CAPACITY TO 2,000 BBLs AND CONNECT TO VAPOR RECOVERY SYSTEM LISTED ON S-1372-220

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 VOC content of the gas shall not exceed 10% by weight. [District Rule 2201] Federally Enforceable Through Title V Permit
4. This tank shall only store, place, or hold organic liquid with a true vapor pressure (TVP) of less than 0.5 psia under all storage conditions. [District Rule 4623, 5.1] Federally Enforceable Through Title V Permit
5. Except during maintenance, vessel shall be connected to the vapor collection system listed on S-1372-220. [17 CCR 95668]

CONDITIONS CONTINUE ON NEXT PAGE

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

Samir Sheikh, Executive Director / APCO

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Arnaud Marjolle, Director of Permit Services

S-1372-221-4 : Feb 21 2020 10:40AM - DAVIDSOS : Joint Inspection NOT Required

6. The vapors may only be vented to a non-destructive vapor control device that achieves at least 95 percent vapor control efficiency of total emissions and does not result in emissions of nitrogen oxides (NO_x); or, a vapor control device that achieves at least 95 percent vapor control efficiency of total emissions and does not generate more than 15 parts per million volume (ppmv) NO_x when measured at 3 percent oxygen and does not require the use of supplemental fuel gas, other than gas required for a pilot burner, to operate. [17 CCR 95671]
7. Vapor collection systems and control devices are allowed to be taken out of service for up to 30 calendar days per calendar year for performing maintenance. In lieu of taking the vapor collection systems and control devices out of service, the vapors may be vented to the standby flare listed on permit S-1372-100. A time extension to perform maintenance not to exceed 14 calendar days per calendar year may be granted by the ARB Executive Officer. The owner or operator is responsible for maintaining a record of the number of calendar days per calendar year that the vapor collection system or vapor control device is out of service and shall provide a record of such activity at the request of the District. If an alternate vapor control device compliant with 17 CCR Section 95671 is installed prior to conducting maintenance and the vapor collection and control system continues to collect and control vapors during the maintenance operation consistent with the applicable standards specified in 17 CCR Section 95671, the event does not count towards the 30 calendar day limit. Vapor collection system and control device shutdowns that result from utility power outages are not subject to enforcement action provided the equipment resumes normal operation as soon as normal utility power is restored. Vapor collection system and control device shutdowns that result from utility power outages do not count towards the 30 calendar day limit for maintenance. [17 CCR 95671(f)(1)(2)(3)]
8. Fugitive emissions inspections and repairs pursuant to Leak Detection and Repair 17 CCR 95669 shall be implemented for subject equipment. [17 CCR 95669]
9. Operator shall conduct quarterly gas sampling for gas exiting the separator pressure vessel to qualify for exemption from fugitive component counts for components handling fluids with VOC content equal to or less than 10% by weight. If gas samples are equal to or less than 10% VOC by weight for 8 consecutive quarterly samplings, sampling frequency shall only be required annually. [District Rule 2201] Federally Enforceable Through Title V Permit
10. All records shall be maintained and retained on-site for a period of at least 5 years and shall be made available for District inspection upon request. [District Rule 1070 and 2201] Federally Enforceable Through Title V Permit

DRAFT

*San Joaquin Valley
Air Pollution Control District*

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: S-1372-416-2

LEGAL OWNER OR OPERATOR: SENTINEL PEAK RESOURCES CA LLC

MAILING ADDRESS: 1200 DISCOVERY DR, STE 500
BAKERSFIELD, CA 93309

LOCATION: HEAVY OIL WESTERN STATIONARY SOURCE
CA

SECTION: 6 **TOWNSHIP:** 30S **RANGE:** 22E

EQUIPMENT DESCRIPTION:

MODIFICATION OF 2000 BBL FIXED-ROOF CRUDE OIL STORAGE TANK WITH P/V VALVE (STAR FEE): CONNECT TO VAPOR RECOVERY SYSTEM LISTED ON S-1372-220

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 VOC content of the gas shall not exceed 10% by weight. [District Rule 2201] Federally Enforceable Through Title V Permit
4. This tank shall only store, place, or hold organic liquid with a true vapor pressure (TVP) of less than 0.5 psia under all storage conditions. [District Rule 4623, 5.1] Federally Enforceable Through Title V Permit
5. Except during maintenance, vessel shall be connected to the vapor collection system listed on S-1372-220. [17 CCR 95668]

CONDITIONS CONTINUE ON NEXT PAGE

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

Samir Sheikh, Executive Director / APCO

Arnaud Marjolle, Director of Permit Services

S-1372-416-2 : Feb 21 2020 10:40AM - DAVIDSOS : Joint Inspection NOT Required

6. The vapors may only be vented to a non-destructive vapor control device that achieves at least 95 percent vapor control efficiency of total emissions and does not result in emissions of nitrogen oxides (NO_x); or, a vapor control device that achieves at least 95 percent vapor control efficiency of total emissions and does not generate more than 15 parts per million volume (ppmv) NO_x when measured at 3 percent oxygen and does not require the use of supplemental fuel gas, other than gas required for a pilot burner, to operate. [17 CCR 95671]
7. Vapor collection systems and control devices are allowed to be taken out of service for up to 30 calendar days per calendar year for performing maintenance. In lieu of taking the vapor collection systems and control devices out of service, the vapors may be vented to the standby flare listed on permit S-1372-100. A time extension to perform maintenance not to exceed 14 calendar days per calendar year may be granted by the ARB Executive Officer. The owner or operator is responsible for maintaining a record of the number of calendar days per calendar year that the vapor collection system or vapor control device is out of service and shall provide a record of such activity at the request of the District. If an alternate vapor control device compliant with 17 CCR Section 95671 is installed prior to conducting maintenance and the vapor collection and control system continues to collect and control vapors during the maintenance operation consistent with the applicable standards specified in 17 CCR Section 95671, the event does not count towards the 30 calendar day limit. Vapor collection system and control device shutdowns that result from utility power outages are not subject to enforcement action provided the equipment resumes normal operation as soon as normal utility power is restored. Vapor collection system and control device shutdowns that result from utility power outages do not count towards the 30 calendar day limit for maintenance. [17 CCR 95671(f)(1)(2)(3)]
8. Fugitive emissions inspections and repairs pursuant to Leak Detection and Repair 17 CCR 95669 shall be implemented for subject equipment. [17 CCR 95669]
9. Operator shall conduct quarterly gas sampling for gas exiting the separator pressure vessel to qualify for exemption from fugitive component counts for components handling fluids with VOC content equal to or less than 10% by weight. If gas samples are equal to or less than 10% VOC by weight for 8 consecutive quarterly samplings, sampling frequency shall only be required annually. [District Rule 2201] Federally Enforceable Through Title V Permit
10. All records shall be maintained and retained on-site for a period of at least 5 years and shall be made available for District inspection upon request. [District Rule 1070 and 2201] Federally Enforceable Through Title V Permit

DRAFT

*San Joaquin Valley
Air Pollution Control District*

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT
DRAFT

PERMIT NO: S-1372-441-0

LEGAL OWNER OR OPERATOR: SENTINEL PEAK RESOURCES CA LLC
MAILING ADDRESS: 1200 DISCOVERY DR, STE 500
BAKERSFIELD, CA 93309

LOCATION: HEAVY OIL WESTERN STATIONARY SOURCE
CA

SECTION: 06 **TOWNSHIP:** 30S **RANGE:** 22E

EQUIPMENT DESCRIPTION:
5,000 BBL FIXED ROOF CRUDE OIL STORAGE/CLARIFIER TANK SERVED BY VAPOR RECOVERY SYSTEM LISTED ON S-1372-220

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 VOC content of the gas shall not exceed 10% by weight. [District Rule 2201] Federally Enforceable Through Title V Permit
4. This tank shall only store, place, or hold organic liquid with a true vapor pressure (TVP) of less than 0.5 psia under all storage conditions. [District Rule 4623, 5.1] Federally Enforceable Through Title V Permit
5. Except during maintenance, vessel shall be connected to the vapor collection system listed on S-1372-220. [17 CCR 95668]

CONDITIONS CONTINUE ON NEXT PAGE

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

Samir Sheikh, Executive Director / APCCO

Arnaud Marjolle, Director of Permit Services

S-1372-441-0 : Feb 21 2020 10:40AM - DAVIDSOS : Joint Inspection NOT Required

6. The vapors may only be vented to a non-destructive vapor control device that achieves at least 95 percent vapor control efficiency of total emissions and does not result in emissions of nitrogen oxides (NO_x); or, a vapor control device that achieves at least 95 percent vapor control efficiency of total emissions and does not generate more than 15 parts per million volume (ppmv) NO_x when measured at 3 percent oxygen and does not require the use of supplemental fuel gas, other than gas required for a pilot burner, to operate. [17 CCR 95671]
7. Vapor collection systems and control devices are allowed to be taken out of service for up to 30 calendar days per calendar year for performing maintenance. In lieu of taking the vapor collection systems and control devices out of service, the vapors may be vented to the standby flare listed on permit S-1372-100. A time extension to perform maintenance not to exceed 14 calendar days per calendar year may be granted by the ARB Executive Officer. The owner or operator is responsible for maintaining a record of the number of calendar days per calendar year that the vapor collection system or vapor control device is out of service and shall provide a record of such activity at the request of the District. If an alternate vapor control device compliant with 17 CCR Section 95671 is installed prior to conducting maintenance and the vapor collection and control system continues to collect and control vapors during the maintenance operation consistent with the applicable standards specified in 17 CCR Section 95671, the event does not count towards the 30 calendar day limit. Vapor collection system and control device shutdowns that result from utility power outages are not subject to enforcement action provided the equipment resumes normal operation as soon as normal utility power is restored. Vapor collection system and control device shutdowns that result from utility power outages do not count towards the 30 calendar day limit for maintenance. [17 CCR 95671(f)(1)(2)(3)]
8. Fugitive emissions inspections and repairs pursuant to Leak Detection and Repair 17 CCR 95669 shall be implemented for subject equipment. [17 CCR 95669]
9. Operator shall conduct quarterly gas sampling for gas exiting the separator pressure vessel to qualify for exemption from fugitive component counts for components handling fluids with VOC content equal to or less than 10% by weight. If gas samples are equal to or less than 10% VOC by weight for 8 consecutive quarterly samplings, sampling frequency shall only be required annually. [District Rule 2201] Federally Enforceable Through Title V Permit
10. All records shall be maintained and retained on-site for a period of at least 5 years and shall be made available for District inspection upon request. [District Rule 1070 and 2201] Federally Enforceable Through Title V Permit

DRAFT

*San Joaquin Valley
Air Pollution Control District*

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: S-1372-442-0

LEGAL OWNER OR OPERATOR: SENTINEL PEAK RESOURCES CA LLC
MAILING ADDRESS: 1200 DISCOVERY DR, STE 500
BAKERSFIELD, CA 93309

LOCATION: HEAVY OIL WESTERN STATIONARY SOURCE
CA

SECTION: 06 **TOWNSHIP:** 30S **RANGE:** 22E

EQUIPMENT DESCRIPTION:
500 BBL FIXED ROOF CRUDE OIL DRAIN TANK WITH PVRV

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 tank shall be equipped with a fixed roof with no holes or openings [District Rule 2201] Federally Enforceable Through Title V Permit
4. Crude oil throughput shall not exceed 10 barrels per day based on a monthly average. [District Rule 2201]
5. {2480} This tank shall only store, place, or hold organic liquid with a true vapor pressure (TVP) of less than 0.5 psia under all storage conditions. [District Rule 4623]
6. This tank shall be equipped with a pressure-vacuum (PV) relief valve set to within 10% of the maximum allowable working pressure of the tank, permanently labeled with the operating pressure settings, properly maintained in good operating order in accordance with the manufacturer's instructions, and shall remain in gas-tight condition except when the operating pressure exceeds the valve's set pressure. [District Rule 2201]

CONDITIONS CONTINUE ON NEXT PAGE

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

Samir Sheikh, Executive Director, APCO

Arnaud Marjollet, Director of Permit Services

S-1372-442-0 Mar 2 2020 8:23AM - DAVIDSOS : Joint Inspection NOT Required

7. This tank shall be in a leak free condition. 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. A reading in excess of 10,000 ppmv above background is a violation of this permit and Rule 4623. [District Rule 2201]
8. VOC emission rate from the tank shall not exceed 1.8 lb/day [District Rule 2201]
9. {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 4623]
10. {2911} The TVP testing shall be conducted at actual storage temperature of the organic liquid in the tank. The permittee shall also conduct an API gravity testing. [District Rule 4623]
11. {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 Rule 4623]
12. {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 Rule 4623]
13. {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 Rule 4623]
14. 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 Rules 2201 and 4623]
15. 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 and 4623]

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