



JUL 09 2010

Mr. Larry Landis  
Chevron USA Inc  
PO Box 1392  
Bakersfield, CA 93302

**Re: Notice of Preliminary Decision - ATC / Certificate of Conformity  
Facility # S-2010  
Project # 1101684**

Dear Mr. Landis:

Enclosed for your review and comment is the District's analysis of an application for Authority to Construct for Chevron USA Inc within the light oil production stationary source in the western Kern County fields, CA. The ATC authorizes a thermally enhanced oil recovery (TEOR) operation with up to 130 wells operated with closed casing vents and ancillary equipment including permit exempt well testers, pressure vessels, and relief tank and sulfur removal system.

After addressing all comments made during the 30-day public notice and the 45-day EPA comment periods, the Authority to Construct will be issued to the facility with a Certificate of Conformity. Prior to operating with modifications authorized by the Authority 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.

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

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

Thank you for your cooperation in this matter.

Sincerely,

David Warner  
Director of Permit Services

DW: RE/cm

Enclosures

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

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**Northern Region**  
4800 Enterprise Way  
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JUL 09 2010

Gerardo C. Rios, Chief  
Permits Office  
Air Division  
U.S. EPA - Region IX  
75 Hawthorne St.  
San Francisco, CA 94105

**Re: Notice of Preliminary Decision - ATC / Certificate of Conformity  
Facility # S-2010  
Project # 1101684**

Dear Mr. Rios:

Enclosed for your review is the District's engineering evaluation of an application for Authority to Construct for Chevron USA Inc within the light oil production stationary source in the western Kern County fields, CA, which has been issued a Title V permit. Chevron USA Inc is requesting that a Certificate of Conformity, with the procedural requirements of 40 CFR Part 70, be issued with this project. The ATC authorizes a thermally enhanced oil recovery (TEOR) operation with up to 130 wells operated with closed casing vents and ancillary equipment including permit exempt well testers, pressure vessels, and relief tank and sulfur removal system.

Enclosed is the engineering evaluation of this application and proposed Authority to Construct # S-2010-308-0 with Certificate of Conformity. After demonstrating compliance with the Authority to Construct, the conditions will be incorporated into the facility's Title V permit through an administrative amendment.

Please submit your written comments on this project within the 45-day comment period that begins on the date you receive this letter. If you have any questions, please contact Mr. Leonard Scandura, Permit Services Manager, at (661) 392-5500.

Thank you for your cooperation in this matter.

Sincerely,

David Warner  
Director of Permit Services

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JUL 09 2010

Mike Tollstrup, Chief  
Project Assessment Branch  
Air Resources Board  
P O Box 2815  
Sacramento, CA 95812-2815

Re: **Notice of Preliminary Decision - ATC / Certificate of Conformity**  
**Facility # S-2010**  
**Project # 1101684**

Dear Mr. Tollstrup:

Enclosed for your review and comment is the District's analysis of an application for Authority to Construct for Chevron USA Inc within the light oil production stationary source in the western Kern County fields, CA. The ATC authorizes a thermally enhanced oil recovery (TEOR) operation with up to 130 wells operated with closed casing vents and ancillary equipment including permit exempt well testers, pressure vessels, and relief tank and sulfur removal system.

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

Thank you for your cooperation in this matter. If you have any questions, please contact Mr. Leonard Scandura, Permit Services Manager, at (661) 392-5500.

Thank you for your cooperation in this matter.

Sincerely,



David Warner  
Director of Permit Services

DW: RE/cm

Enclosures

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**San Joaquin Valley Air Pollution Control District**  
**Authority to Construct Application Review**  
130 TEOR Wells

Facility Name:	Chevron USA Inc	Date:	July 7, 2010
Mailing Address:	PO Box 1392	Engineer:	Richard Edgehill
	Bakersfield, Ca 93302	Lead Engineer:	Allan Phillips
Contact Person:	Larry Landis		
Telephone:	(661) 654-7141		
Fax:	(661) 654-7004		
E-Mail:	landilr@chevron.com		
Application #(s):	S-2010-308-0		
Project #:	1101684		
Deemed Complete:	April 28, 2010		

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## **I. Proposal**

Chevron USA Inc (CUSA) is requesting an Authority to Construct for a thermally enhanced oil recovery (TEOR) operation with up to 130 wells. Eighty (80) of the proposed wells are new and 50 are conventional wells with pumping jacks that will be converted to steam enhanced wells as the temperature of the reservoir increases.

All 130 proposed wells will be operated with closed casing vents and produced fluids will be directed to crude oil storage tanks equipped with a vapor control system (S-2010-23) capable of reducing VOC emissions by at least 99% by weight.

The project will result in new fugitive emissions from piping components associated with the wells and ancillary facilities including exempt pressure vessels (<100 bbl in capacity), optional sulfur removal system, and exempt relief tank (< 1100 gallons).

The project triggers BACT, offsets, and public notice.

CUSA is a major stationary source with 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. CUSA 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 2020	Exemptions (December 17, 2007)
Rule 2201	New and Modified Stationary Source Review Rule (9/21/06)
Rule 2520	Federally Mandated Operating Permits (6/21/01)

Rule 4102            Nuisance (12/17/92)  
Rule 4401            Steam Enhanced Crude Oil Production Well Vents (December 14, 2006)  
Rule 4409            Components Serving Light Crude Oil Production Facilities, Natural Gas  
Production Facilities, and Natural Gas Processing Facilities (April 20,  
2005) – **not applicable** – the proposed wells will produce fluids with API  
gravities less than 30°  
Rule 4801            Sulfur Compounds (12/17/92)  
CH&SC 41700        Health Risk Assessment  
CH&SC 42301.6      School Notice  
Public Resources Code 21000-21177: California Environmental Quality Act (CEQA)  
California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387: CEQA  
Guidelines

### **III. Project Location**

The proposed new wells will be located at the Lost Hills Oil Field at Section 29, Township 26S Range 21E in the light oil production stationary source in the western Kern County fields.

The proposed TEOR systems will be not located within 1,000 feet of a school.

A project location map is included in **Attachment I**.

### **IV. Process Description**

#### New TEOR Operation at S-2010

CUSA's S-2010 facility includes light oil and gas production equipment. A new thermally enhanced oil recovery operation with 130 wells will be authorized in this project. The subject wells' casings will be operated with closed casing vents. Liquid and gas from the wells will flow as a combined mixture to tanks under 99% vapor control (S-2010-23).

Note that 50 of the 130 wells are existing and are currently not steam enhanced. The 80 additional wells included in this application are new. Pooled production will enter master trap vessels vented to a H<sub>2</sub>S removal system, used as needed, and then to a field gas gathering line. An Automatic Well Test (AWT) vessel will receive production from one well at a time in a parallel track.

A process flow diagram is included in **Attachment II**.

### **V. Equipment Listing**

**S-2010-308-0: TEOR SYSTEM WITH UP TO 130 STEAM ENHANCED WELLS OPERATED WITH CLOSED CASING VENTS, PERMIT EXEMPT WELL TESTERS, PRESSURE VESSELS, RELIEF TANK, AND MASTER TRAP(S) VENTED TO H<sub>2</sub>S REMOVAL SYSTEM AND FIELD GAS GATHERING PIPELINE**

## VI. Emission Control Technology Evaluation

The new wells will emit VOCs from fugitive emissions components. Applicant will be required to monitor the number of fugitive emissions components and resulting emissions and to implement an I&M program consistent with the requirements of District Rule 4401.

### Front Line Tanks Receiving Produced Fluid

Fluid and entrained gas and will be sent to vapor controlled (front line) storage tanks permitted under tank and vapor control system S-2010-23 (Cahn 3 facility). The vapor control efficiency of S-2010-23 is required to be 99%.

## VII. General Calculations

### A. Assumptions

- The facility operates 24 hours per day, 7 days per week, and 52 weeks per year.
- Pursuant to District Policy SSP-2015 VOC emissions will not be assessed for components in crude oil liquid service since only heavy crude oil (API gravity < 30 degrees) will be handled. Laboratory analysis demonstrating that the oil produced at S-2010 has an API gravity less than 30 deg was provided for project S2010, 1083927.
- The project will not cause an increase in NOx, PM10, CO, or SOx air contaminant emissions from any individual emissions unit, nor for the stationary source.
- A VOC content of 100% by weight is assumed for components in vapor service.
- For TEOR operations with closed casing vents, all wells authorized by one permit are one emissions unit. For such operations, fugitive emissions sources not on the well head are exempt from permit.
- The proposed wells will operate with closed casing vents; therefore, wellheads will have vapor-handling fugitive emission components.
- The type and quantity of nonleaking components associated with the 130 proposed wells are listed in the table below.

Equipment Type	Service	Average Count Per Well
Valves	Gas	706
Others	Gas	161
Connectors	Gas	3293
Flanges	Gas	556
Open-ended Lines	Gas	2

- There will be ten leaking components as allowed by Table 3 of Rule 4401. Emissions are based on leaking valves as they have the highest emissions factor (see Section VII B below).
- A 1.2 safety factor will be applied to the fugitive emissions.
- 100% of fugitive emissions is TOC which consists of VOC and CH<sub>4</sub> with CH<sub>4</sub> = 0.6 VOC (ARB Guidance Document – **Attachment III**)

$$\begin{aligned} \text{TOC} &= \text{VOC} + \text{CH}_4 \\ &= \text{VOC} + 0.6 \text{ VOC} \\ &= 1.6 \text{ VOC} \end{aligned}$$

$$\text{VOC} = 0.625 \text{ TOC}$$

$$\text{CH}_4 = 0.6 \times \text{VOC} = 0.6 \times 0.625 = \underline{0.375 \text{ TOC}}$$

- GWP for CH<sub>4</sub> = 23 lb-CO<sub>2</sub>e per lb-CH<sub>4</sub>

## B. Emission Factors

Fugitive emissions from each wellhead casing vapor space will be estimated utilizing California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities, Table IV-2c – Oil and Gas Production Screening Value Ranges Emission Factors. The number of leaking components is based upon current Rule 4401 allowances (10 leakers for 101 to 250 steam enhanced wells) and will be conservatively calculated as all leaks occurring at valves (**Attachment IV**).

The CAPCOA fugitive emissions factors are listed in the table below.

Equipment Type	Service	Screening Value EF - TOC (< 10,000 ppmv, lb/day/source)	Screening Value EF - TOC (≥ 10,000 ppmv, lb/day/source)
Valves	Gas/Light Liquid	1.852E-03	7.333E+00
Others	Gas/Light Liquid	7.778E-03	7.281E+00
Connectors	Gas/Light Liquid	6.349E-04	1.370E+00
Flanges	Gas/Light Liquid	1.482E-03	3.228E+00
Open-ended Lines	Gas/Light Liquid	1.270E-03	2.905E+00

## C. Calculations

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

Since this is a new emissions unit, PE1 = 0 for all pollutants.

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

PE2 is calculated as the product of the number of fugitive emissions components of a given type times the corresponding fugitive emissions factor.

130 Wells

[(706 valves  $1.852 \text{ E-}03$  + 161 others  $\times 7.778 \text{ E-}03$  + 3293 connectors  $\times 6.349 \text{ E-}04$  + 556 flanges  $\times 1.482 \text{ E-}03$ ) + 2 open ended lines  $\times 1.27 \text{ E-}03$  + 10 leaking valves  $\times 7.333 \text{ lb/day/well}$ ]

= 78.8 lb/day (28,764 lb/yr)  
X 1.2 = 94.6 lb/yr (34,517 lb/yr)

<b>Post Project Potential to Emit (PE2)</b>		
	Daily Emissions (lb/day)	Annual Emissions (lb/year)
NO <sub>x</sub>	0	0
SO <sub>x</sub>	0	0
PM <sub>10</sub>	0	0
CO	0	0
VOC	94.6	34,517

Increase in Greenhouse Gas Emissions

94.6 lb TOC/day  $\times 0.375 \text{ GHG/TOC} \times 23 \text{ lb-CO}_2\text{e per lb-CH}_4$   
X 365 days/yr  $\times \text{ton}/2000 \text{ lb}$   
= 148.9 tons CO<sub>2</sub>e/yr

148.9 short tons-CO<sub>2</sub>e/year  $\times 0.9072 \text{ metric tons/short ton}$   
= 135.17 metric tons CO<sub>2</sub>e < 230 metric tons CO<sub>2</sub>e

Per District Policy, project specific greenhouse gas emissions less than or equal to 230 metric tons-CO<sub>2</sub>e/year are considered to be zero for District permitting purposes.

The emissions profiles are provided in **Attachment V**.

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

Pursuant to Section 4.9 of District Rule 2201, the Pre-Project Stationary Source Potential to Emit (SSPE1) is the Potential to Emit (PE) from all units with valid Authorities to Construct (ATC) or Permits to Operate (PTO) at the Stationary Source and the quantity of emission reduction credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site.

Pre project SSPE is the SSPE2 for project 1100701 the most recent project in PAS.

<b>Pre-Project Stationary Source Potential to Emit [SSPE1] (lb/year)</b>					
	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	CO	VOC
Pre-Project SSPE (SSPE1)	19,947	5,601	12,527	44,275	169,446

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

Pursuant to Section 4.10 of District Rule 2201, the Post Project Stationary Source Potential to Emit (SSPE2) is the Potential to Emit (PE) from all units with valid Authorities to Construct (ATC) or Permits to Operate (PTO) at the Stationary Source and the quantity of emission reduction credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site.

<b>Post Project Stationary Source Potential to Emit [SSPE2] (lb/year)</b>					
Permit Unit	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	CO	VOC
Pre-Project SSPE (SSPE1)	19,947	5,601	12,527	44,275	169,446
SSIPE	0	0	0	0	34,517
Post Project SSPE (SSPE2)	19,947	5,601	12,527	44,275	203,963

#### 5. Major Source Determination

Pursuant to Section 3.24 of District Rule 2201, a Major Source is a stationary source with post-project emissions or a Post Project Stationary Source Potential to Emit (SSPE2), equal to or exceeding one or more of the following threshold values. However, Section 3.24.2 states, "for the purposes of determining major source status, the SSPE2 shall not include the quantity of emission reduction credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site."

<b>Major Source Determination (lb/year)</b>					
	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	CO	VOC
Pre-Project SSPE (SSPE1)	19,947	5,601	12,527	44,275	169,446
Post Project SSPE (SSPE2)	19,947	5,601	12,527	44,275	203,963
Major Source Threshold	50,000	140,000	140,000	200,000	50,000
Major Source?	No	No	No	No	Yes

As seen in the table above, the facility is not an existing Major Source for NO<sub>x</sub>, SO<sub>x</sub>, PM<sub>10</sub>, and CO and also is not becoming a Major Source for these air contaminants as a result of this project. The facility is an existing major source for VOCs.

## 6. Baseline Emissions (BE)

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

Pursuant to Section 3.7 of District Rule 2201, BE = Pre-project Potential to Emit for:

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

otherwise,

BE = Historic Actual Emissions (HAE), calculated pursuant to Section 3.22 of District Rule 2201.

Since this is a new emissions unit, BE = PE1 = 0 for all pollutants.

## 7. Major Modification

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.*"

As discussed in Section VII.C.5 above, the facility is not a Major Source for NO<sub>x</sub>, SO<sub>x</sub>, PM<sub>10</sub> or CO; therefore, the project does not constitute a Major Modification for these air contaminants.

### VOC

As discussed in Section VII.C.5 above, the facility is an existing Major Source for VOCs; however the project involves only fugitive emissions which do not contribute to the major modification calculations. Therefore, the project cannot be a significant increase and the project does not constitute a Major Modification.

## 8. Federal Major Modification

As shown above, this project does not constitute a Major Modification. Therefore, in accordance with District Rule 2201, Section 3.17, this project does not constitute a Federal Major Modification and no further discussion is required.

## 9. Quarterly Net Emissions Change (QNEC)

The QNEC is calculated solely to establish emissions that are used to complete the District's PAS emissions profile screen.

S-2010-308

Pollutant	QNEC			
	Annual emissions (lb/year)	divided by	4 quarters/yr =	Quarterly emissions (lb/qtr)
NO <sub>x</sub>	0	/	4 qtr/year	0
SO <sub>x</sub>	0	/	4	0
PM <sub>10</sub>	0	/	4	0
CO	0	/	4	0
VOC	34,517	/	4	8,629

## VIII. Compliance

### Rule 2020 Exemptions

Ancillary equipment including well testers (AWTs), pressure vessels, each less than 100 bbl in capacity, and a relief tank (T-2), less than 1,100 gallons in capacity are proposed. These are exempt according to the following section of the rule:

6.6.2 The storage of crude oil with 0.8762 specific gravity or higher (30°API or lower) as measured by test method API 2547 or ASTM D-1298-80, having a capacity of 100 bbl or less, and is not subject to a VOC control requirement of Rule 4623 (Storage of Organic Liquids).

By District policy SSP 2015, this equipment is to be listed in the TEOR equipment description:

“Please note that pressure vessels that serve as storage equipment, e.g. bullet tanks used to store natural gasoline or condensed petroleum liquids (but not including liquefied gases), require individual permits if their capacity is greater than 100 bbl. If their capacity is less than 100 bbl, they are to be listed on the permit of the associated equipment.”

Therefore the equipment description will read as follows:

TEOR SYSTEM WITH UP TO 130 STEAM ENHANCED WELLS OPERATED WITH CLOSED CASING VENTS, PERMIT EXEMPT WELL TESTERS, PRESSURE VESSELS, RELIEF TANK, AND MASTER TRAP(S) VENTED TO OPTIONAL H2S REMOVAL SYSTEM AND THE FIELD GAS GATHERING PIPELINE

Compliance is expected.

## Rule 2201 New and Modified Stationary Source Review Rule

### A. Best Available Control Technology (BACT)

#### 1. BACT Applicability

BACT requirements are triggered on a pollutant-by-pollutant basis and on an emissions unit-by-emissions unit basis for the following\*:

- 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 a Title I Modification.

\*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 new TEOR operation S-2010-308 has a Potential to Emit (PE2) greater than 2.0 lb/day for VOC. Therefore, Rule 2201 requirements for Best Available Control Technology (BACT) apply.

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

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

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

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

##### d. Major Modification

As discussed in Section VII.C.7 above, this project does not constitute a Major Modification; therefore BACT is not triggered.

#### 2. BACT Guideline

BACT Guideline 7.1.1 applies to Thermally Enhanced Oil Recovery – Steam Drive Oil Wells (see **Attachment VI**)

#### 3. Top-Down BACT Analysis

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

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

VOC: The routing of the steam-enhanced crude oil well production vapors to a tank battery equipped with a vapor control system for which the collected vapors are incinerated using steam generators.

The project authorizes a TEOR operation and associated fugitive emissions sources. The TEOR wells will be operated with closed casing vents. The permit requires that produced fluids be directed to tanks with vapor control. Additionally the permit requires the operator to implement an I&M Program for the casing annulus fugitive components.

## **B. Offsets**

### **1. Offset Applicability**

Pursuant to Section 4.5.3, offset requirements shall be triggered on a pollutant by pollutant basis and shall be required if SSPE2 equals to or exceeds the offset threshold levels in Table 4-1 of Rule 2201. Facility emissions are already above the Offset and Major Source Thresholds for all criteria pollutant emissions.

### **2. Quantity of Offsets Required**

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

Per Sections 4.7.1 and 4.7.3, the quantity of offsets in pounds per year for VOC is calculated as follows for sources with an SSPE1 greater than the offset threshold levels before implementing the project being evaluated.

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

Where,

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

BE = Baseline Emissions, (lb/year)

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

DOR = Distance Offset Ratio, determined pursuant to Section 4.8

BE = Pre-project Potential to Emit for:

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

otherwise,

BE = Historic Actual Emissions (HAE)

NOx, SOx, PM10, and CO

There are emissions of NOx, SOx, PM10, CO associated with this permit unit. Therefore offsets are not required for these air contaminants.

VOCs

The facility is proposing to install a new emissions unit; therefore Baseline Emissions for VOCs are equal to zero. Also, there is only one emissions unit (all wells considered one emissions unit) associated with this project and there are no increases in cargo carrier emissions; therefore offsets can be determined as follows:

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

$$\begin{aligned} \text{PE2 (VOC)} &= 34,517 \text{ lb/year} \\ \text{BE (VOC)} &= 0 \text{ lb/year} \\ \text{ICCE} &= 0 \text{ lb/year} \end{aligned}$$

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

$$\begin{aligned} \text{Offsets Required (lb/year)} &= ([34,517 - 0] + 0) \times 1.5 \\ &= 51,776 \text{ lb VOC/year} \end{aligned}$$

CUSA plans to use ERC certificate S-3222-1 to offset the increases in VOC emissions associated with this project.

The ERC certificate S-3222-1 VOC reductions occurred at the heavy oil central stationary source, facility S-1127 (heavy oil central), which is a separate stationary source located more than 15 miles from the proposed wells. Therefore the correct DOR is 1.5:1. Calculating the appropriate quarterly emissions (for each steam generator) to be offset is as follows:

VOC	DOR	1 <sup>st</sup> Quarter	2 <sup>nd</sup> Quarter	3 <sup>rd</sup> Quarter	4 <sup>th</sup> Quarter
	1.5	12,944	12,944	12,944	12,944
	1.0	8,629	8,629	8,629	8,629

<b>ERC Certificates to be used as offsets*</b>					
<b>Pollutant</b>	<b>Certificate #</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>
VOCs	<b>ERC S-3222-1</b> (facility S-1127; > 15 miles)	70,587	71,512	72,438	72,436
	Offsets for this project req'd @ DOR = 1.5	12,944	12,944	12,944	12,944
Other projects reserving ERCS from S-3222-1	<b>S-1128, 1095191</b>	4,603	4,603	4,603	4,603
	<b>S-1128, 1101450</b>	1,898	1,898	1,898	1,898
	<b>S-2010, 1100701</b>	1,389	1,389	1,389	1,389
Total Reserved for other projects		20,834	20,834	20,834	20,834
ERCs remaining		49,753	50,678	51,604	51,602

\* ERCs have been reserved in PAS

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

**Proposed Rule 2201 (offset) Conditions:**

Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 8629 lb, 2nd quarter - 8629 lb, 3rd quarter - 8629 lb, and fourth quarter - 8629 lb. Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 9/21/06). [District Rule 2201] Y

ERC Certificate Number S-3222-1 (VOCs) (or a certificate split from this certificate) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Y

**C. Public Notification**

**1. Applicability**

Public noticing is required for:

- a. Any new Major Source, which is a new facility that is also a Major Source,
- b. Major Modifications,
- c. Any new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any one pollutant,
- d. Any project which results in the offset thresholds being surpassed, and/or
- e. Any project with an SSIPE of greater than 20,000 lb/year for any pollutant.

**a. New Major Source**

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

**b. Major Modification**

As demonstrated in VII.C.7, this project does not constitute a major modification. Therefore, public noticing is not required for major modification purposes.

**c. PE > 100 lb/day**

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

**d. Offset Threshold**

Projects that cause the SSPE to exceed the offset threshold for any pollutant will require public notice. The following table compares the SSPE1 with the SSPE2 in order to determine if any offset thresholds have been surpassed with this project.

Offset Threshold				
Pollutant	SSPE1 (lb/year)	SSPE2 (lb/year)	Offset Threshold	Public Notice Required?
NO <sub>x</sub>	19,947	19,947	20,000 lb/year	No
SO <sub>x</sub>	5,601	5,601	54,750 lb/year	No
PM <sub>10</sub>	12,527	12,527	29,200 lb/year	No
CO	44,275	44,275	200,000 lb/year	No
VOC	169,446	203,963	20,000 lb/year	No

As detailed above, there were no offset thresholds that were surpassed with this project. Therefore, public noticing is not required for surpassing the offset thresholds.

**e. SSIPE > 20,000 lb/year**

Public notification is required for any permitting action that results in a SSIPE of more than 20,000 lb/year of any affected pollutant. According to District policy, the SSIPE is calculated as  $SSIPE = SSPE2 - SSPE1$ . The values for the SSIPE is calculated and compared to the SSIPE public notice thresholds in the following table.

SSIPE Public Notice Thresholds					
Pollutant	SSPE1 (lb/year)	SSPE2 (lb/year)	SSIPE (lb/year)	SSIPE Public Notice Threshold	Public Notice Required?
NO <sub>x</sub>	19,947	19,947	0	20,000 lb/year	No
SO <sub>x</sub>	5,601	5,601	0	20,000 lb/year	No
PM <sub>10</sub>	12,527	12,527	0	20,000 lb/year	No
CO	44,275	44,275	0	20,000 lb/year	No
VOC	169,446	203,963	34,517	20,000 lb/year	Yes

As demonstrated above, the SSIPE for all VOC exceeded 20,000 lb/year. Therefore, public noticing for SSIPE > 20,000 lb/year purposes is required.

## 2. Public Notice Action

As discussed above, this project will result in emissions of VOCs which would subject the project to the aforementioned noticing requirements. Therefore, public notice will be required for this project.

## D. Daily Emission Limits (DELs)

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

The following conditions will be listed on the ATC to ensure compliance.

### S-2010-308-0

- Fugitive emissions from the TEOR Operation shall not exceed 94.6 lb-VOC/day.

## E. Compliance Assurance

### 1. Source Testing

Pursuant to District Policy APR 1705, source testing of the proposed wells is not required to demonstrate compliance with Rule 2201.

### 2. Monitoring

Monitoring is not required to demonstrate compliance with Rule 2201.

### 3. Recordkeeping

Recordkeeping is used to demonstrate compliance with the offset, public notification and daily emission limit requirements of Rule 2201. Therefore, the following condition will be listed on the ATC to ensure compliance.

8. Permittee shall maintain records of the date and well identification where steam injection or well stimulation occurs, current list of all thermally enhanced production wells associated with this operation, permit numbers of tanks receiving production from the TEOR operation, leak inspection results, and accurate fugitive component counts of components in gas service and resulting emissions calculated using the emission factors in the CAPCOA California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities, Table IV-2c, Oil and Gas Production Screening Value Ranges Emission Factors (Feb 1999) . [District Rules 2201 and 4401] Y

### 4. Reporting

The reporting requirements specified under the discussion of Rule 4401 below will demonstrate compliance with the offset, public notification and daily emission limit requirements of Rule 2201.

### District Rule 2520 Federally Mandated Operating Permits

This facility is subject to this Rule, and has received their Title V Operating Permit on April 30, 2004. The proposed modification is a minor modification to the Title V Permit pursuant to Section 3.20 of this rule.

In accordance with Rule 2520, 3.20, these modifications:

1. Do not violate requirements of any applicable federally enforceable local or federal requirement;
2. Do not relax monitoring, reporting, or recordkeeping requirements in the permit and are not significant changes in existing monitoring permit terms or conditions;
3. Do not require or change a case-by-case determination of an emission limitation or other standard, or a source-specific determination for temporary sources of ambient impacts, or a visibility or increment analysis;
4. Do not seek to establish or change a permit term or condition for which there is no corresponding underlying applicable requirement and that the source has assumed to avoid an applicable requirement to which the source would otherwise be subject. Such terms and conditions include:
  - a. A federally enforceable emission cap assumed to avoid classification as a modification under any provisions of Title I of the Federal Clean Air Act; and
  - b. An alternative emissions limit approved pursuant to regulations promulgated under section 112(i)(5) of the Federal Clean Air Act; and
5. Are not Title I modifications as defined in District Rule 2520 or modifications as defined in section 111 or 112 of the Federal Clean Air Act; and
6. Do not seek to consolidate overlapping applicable requirements.

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. The following condition will be listed on the ATC to ensure compliance.

Continued compliance with Rule 2520 is expected.

### **Rule 4102 Nuisance**

Rule 4102 states that no air contaminant shall be released into the atmosphere which causes a public nuisance. The project is located in a remote oilfield setting in northern Kern County so nuisance complaints are not expected. The following condition will be listed on the ATC to ensure compliance.

- No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

### **California Health & Safety Code 41700 (Health Risk Assessment)**

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

An HRA is not required for a project with a prioritization score of less than 0.05. According to the Technical Services Memo for this project (see RMR Summary in **Attachment VIII**), the project prioritization score is less than 0.05. Therefore, no further analysis is required and the project is approved without TBACT

### **Rule 4401 Steam-enhanced Crude Oil Production Well Vents**

The purpose of this rule is to limit the VOC emissions from steam-enhanced crude oil production well vents. This rule is applicable to all steam-enhanced crude oil production wells and any associated vapor collection and control systems.

#### Section 3.0, Definitions

Section 3.20.1 defines various types of gas and liquid leaks.

The following condition will be included on the ATCs to ensure compliance:

Gas and liquid leaks are as defined in Section 3.20 of Rule 4401. [District Rule 4401 3.20] N

#### Section 4.0, Exemptions

Section 4.1 states that any steam-enhanced crude oil production well undergoing service or repair during the time the well is not producing is exempt from the requirements of this rule as stated in the following ATC condition:

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, 5.0 (as amended December 14, 2006). [District Rule 4401, 4.1]

## Section 5.5 Vapor Control System Requirements

An operator shall not operate a steam-enhanced crude oil production well unless the operator complies with 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, 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, 5.5.1 and 5.5.2] Y

## Section 5.6 Determination of Compliance with Leak Standards:

An operator shall be in violation of this rule if any District inspection demonstrates that one or more of the following conditions exist at the facility or if any operator inspection conducted pursuant to Section 5.8 of Rule 4401 demonstrates that one or more of the following conditions exist at the facility: 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 5.6.2.1 of Rule 4401 requiring process fluid flow through the open-ended lines. [District Rule 4401 5.6.2] Y

An operator shall be in violation of this rule if any District inspection demonstrates that one or more of the following conditions exist at the facility or if any operator inspection conducted pursuant to Section 5.8 of Rule 4401 demonstrates that one or more of the conditions in Section 5.6.2 exist at the facility: existence of a component with any of the following: a major liquid leak, a gas leak greater than 50,000 ppmv, a minor liquid leak or a minor gas leak in excess of the allowable number of leaks allowed by Table 3 of Rule 4401, or a gas leak greater than 10,000 ppmv up to 50,000 ppmv in excess of the allowable number of leaks allowed by Table 3 of Rule 4401. [District Rule 4401 5.6.2] Y

## Section 5.7 Operating Requirements

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 5.6.2 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 5.9 of Rule 4401. [District Rule 4401 5.7.1] Y

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 5.7.2] Y

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 5.7.3] Y

## Section 5.8 Inspection and Re-Inspection Requirements:

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 5.8.1] Y

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 4 of Rule 4401. [District Rule 4401 5.8.2] Y

In addition to the inspections required by Section 5.8.1 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 4 of Rule 4401. [District Rule 4401 5.8.3] Y

In addition to the inspections required by Sections 5.8.1, 5.8.2 and 5.8.3 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 5.8.4.1 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 5.8.4] Y

An operator shall inspect all unsafe-to-monitor components during each turnaround. [District Rule 4401 5.8.5] Y

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 5.8.6] Y

### Section 5.9, Leak Repair Requirements

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 5.9.1] Y

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 5.9.2.3 of Rule 4401, or the component is found to be in compliance with the requirements of this rule. [District Rule 4401 5.9.2] Y

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 5.9.3] Y

Except for leaking critical components or leaking essential components subject to the requirements of Section 5.9.7 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 4 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 5.9.4] Y

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 5.9.4] Y

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 4 of Rule 4401. [District Rule 4401 5.9.5] Y

The time of the initial leak detection shall be the start of the repair period specified in Table 4 of Rule 4401. [District Rule 4401 5.9.6] Y

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 5.9.7] Y

### Section 6.1, Recordkeeping and Submissions

Section 6.1 requires that an operator shall maintain the records required by Sections 6.1 and 6.2 for a period of five (5) years. These records shall be made available to the APCO upon request. The following condition will be listed on the ATCs to ensure compliance:

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 6.1.1] Y

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 6.1.3] Y

The results of source tests conducted pursuant to Section 4.6.2 of Rule 4401 shall be submitted to the APCO within 60 days after the completion of the source test. [District Rule 4401 6.1.4] Y

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 6.1.5] Y

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 6.1.6] Y

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 6.1.7] Y

Operator shall keep a copy of the APCO-approved Operator Management Plan at the facility. [District Rule 4401 6.1.8] Y

Operator shall submit to the APCO not later than June 14, 2007 a list of all gauge tanks, as defined in Section 3.17. 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 6.1.9] Y

The results of gauge tank TVP testing conducted pursuant to Section 6.2.5 shall be submitted to the APCO within 60 days after the completion of the testing. [District Rule 4401 6.1.10] Y

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 6.1.11] Y

### Section 6.2, Compliance Source Testing

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. [District Rule 4401 6.2.1] Y

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 and control system are

incinerated in fuel burning equipment, an internal combustion engine or in a smokeless flare. [District Rule 4401 6.2.2] Y

If approved by EPA, ARB, and the APCO, an operator need not comply with the annual testing requirement of Section 6.2.1 for a vapor control system which does not have a VOC destruction device. [District Rule 4401 6.2.3] Y

An operator seeking approval pursuant to Section 6.2.2 or Section 6.2.3 shall submit a written request and supporting information to the APCO. The District shall evaluate the request and if approved by the APCO, the District shall provide EPA and ARB with a copy of the evaluation and shall request EPA and ARB approval. The District evaluation and the APCO request shall be deemed approved unless EPA or ARB objects to such approval in writing within 45 days of the receipt of the APCO request. [District Rule 4401 6.2.4] Y

An operator shall comply with the following requirements for each gauge tank, as defined in Section 3.17 of Rule 4401: Conduct an initial TVP testing of the produced fluid in each gauge tank not later than June 14, 2007. Thereafter, an operator shall 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 6.1.10 of Rule 4401. [District Rule 4401 6.2.5] Y

### Section 6.3, Test Methods

Section 6.3.1 specifies that 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.

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 6.3.1] Y

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 6.3.2] Y

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 6.3.3] Y

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 6.3.5] Y

## Section 6.4 Inspection Log

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 6.4] Y

## Section 7.0, Compliance Schedule

Section 7.0 establishes a compliance schedule for existing and new steam-enhanced crude oil production wells. The wells in this project are expected to operate in compliance with the requirements of this rule. Therefore, no further discussion is required.

### **California Health & Safety Code 42301.6 (School Notice)**

The District has verified that this site is not located within 1,000 feet of a school. Therefore, pursuant to California Health and Safety Code 42301.6, a school notice is not required.

### **California Environmental Quality Act (CEQA)**

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

- Inform governmental decision-makers and the public about the potential, significant environmental effects of proposed activities.
- Identify the ways that environmental damage can be avoided or significantly reduced.
- Prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible.
- 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**

The District's engineering evaluation (this document) demonstrates that the project would not result in an increase in project specific greenhouse gas emissions. The

District therefore concludes that the project would have a less than cumulatively significant impact on global climate change.

Per District Policy, project specific greenhouse gas emissions less than or equal to 230 metric tons-CO2e/year are considered to be zero for District permitting purposes and are exempt from further environmental review.

**District CEQA Findings**

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

**IX. Recommendation**

Compliance with all applicable rules and regulations is expected. The Title V Compliance Certification for is included in **Attachment IX**.

Pending a successful NSR Public Noticing period, issue Authority to Construct S-2010-308-0 subject to the permit conditions on the attached draft Authority to Construct in **Attachment X**.

**X. Billing Information**

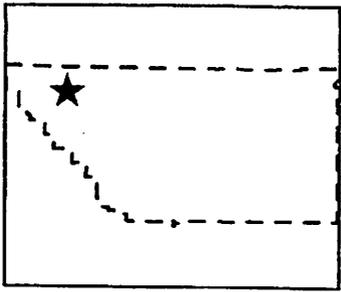
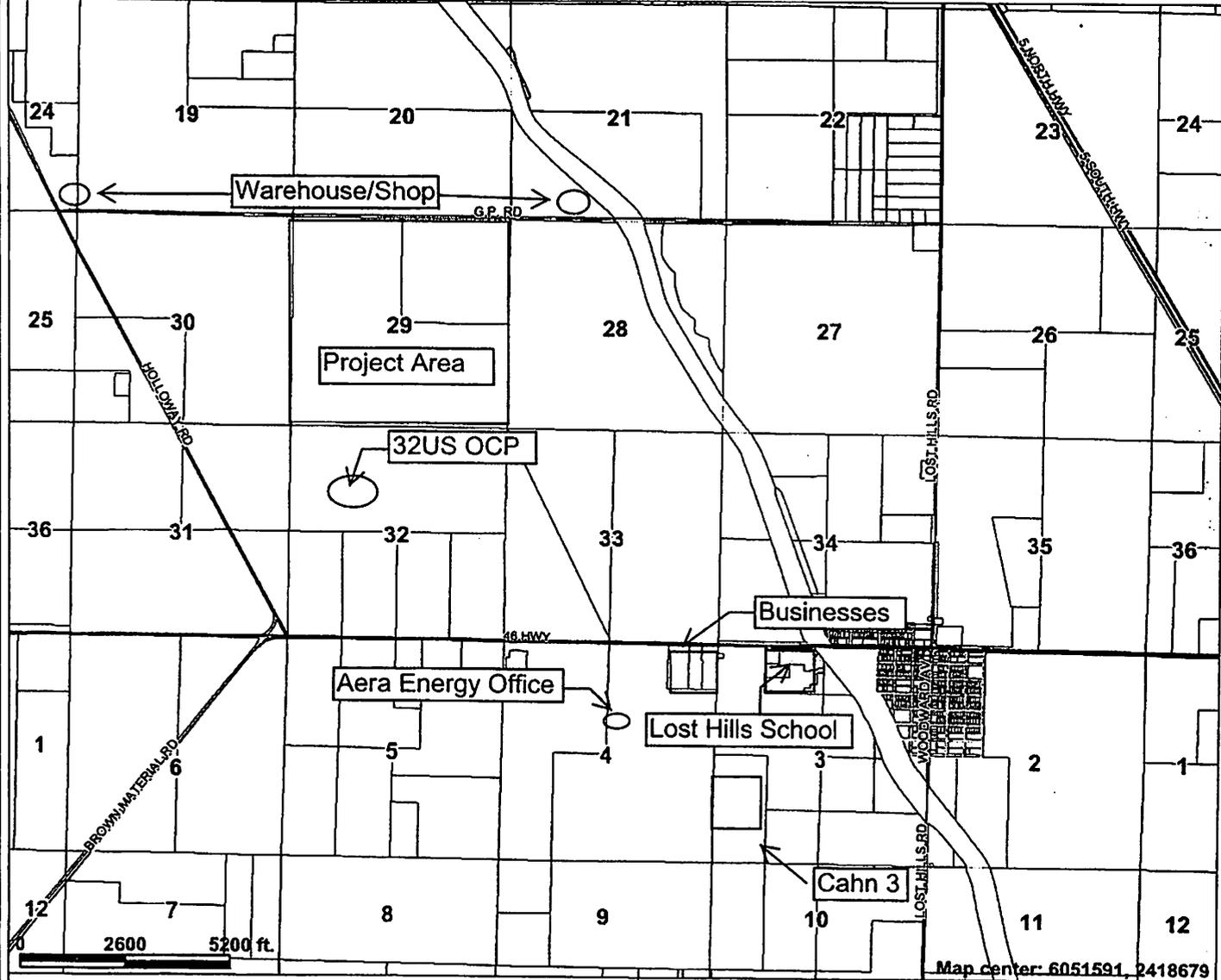
Annual Permit Fees			
Permit Number	Fee Schedule	Fee Description	Annual Fee
S-2010-308-0	3020-09-B	130 wells no vapor control	\$1214.20

**Attachments**

- I: Project Location Map
- II: Process Flow Diagram
- III: ARB Guidance Document
- IV: Fugitive Emissions
- V: Emissions Profiles
- VI: BACT Guideline
- VII: BACT Analysis
- VIII: HRA Summary
- IX: Title V Compliance Certification Form
- X: Draft ATC

**ATTACHMENT I**  
**Project Location Map**

# Lost Hills Area



### Legend

**Roads**

- Arterial
- Collector
- Highway
- Local
- Ramp
- Unpaved

**County of Kern**

**Assessment Parcels**

**Sections**

Scale: 1:45,384

This map is a user generated static output from an Internet mapping site and is for general reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable. THIS MAP IS NOT TO BE USED FOR NAVIGATION.

**ATTACHMENT II**  
**Process Flow Diagram**



**ATTACHMENT III**  
**ARB Guidance Document**

## CHAPTER 10: PETROLEUM REFINERIES (Guidance for Regulation Section 95113)

As listed in section 95113(a) of the regulation, the emissions data report for a petroleum refinery must include the following information as applicable:

1. Stationary combustion CO<sub>2</sub> emissions by fuel type
2. Stationary combustion CH<sub>4</sub> and N<sub>2</sub>O emissions by fuel type
3. Consumption data for fuels and feedstocks
4. Hydrogen production plant emissions of CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O
5. Specified process emissions
6. Specified fugitive emissions
7. Flaring emissions
8. Emissions from electricity generating units
9. Emissions from co-generation facilities
10. Indirect energy purchases

Calculation methods for each of these reporting requirements are discussed in this chapter. Note that in addition to referring to the common methodologies section of the regulation (section 95125), you will find general guidance on applicable methods in Chapter 13 of this document. Information specific to refineries is included here.

### 10.1 Stationary Combustion Emissions

As indicated by the regulation's general requirements (section 95103(a)(2)), the operator needs to calculate and report emissions for each GHG separately for each fuel type used (except where a CEMS is deployed, discussed below). Thus, in compiling and reporting stationary combustion emissions you will be effectively populating a matrix that looks something like the one below. The fuels you combust may be different than those shown in the Table below, of course.

Table 10.1 Stationary Combustion GHG Emissions

<i>Fuel</i>	<i>CO<sub>2</sub></i>	<i>CH<sub>4</sub></i>	<i>N<sub>2</sub>O</i>
Refinery fuel gas			
Natural Gas			
Associated Gas			
Diesel Fuel			
Residual Fuel			
Propane			
CNG			
Gasoline			
Kerosene			
Naphtha			
CEMS (fuel mixtures)		n/a	n/a

*The purpose of this chapter is to provide guidance on the requirements of section 95113 of the mandatory GHG reporting regulation. As described more specifically in Chapter 1 of this document, this guidance does not add to, substitute for, or amend the regulatory requirements as written in these or other sections of the regulation [Subchapter 10, Article 2, sections 95100 to 95133, title 17, California Code of Regulations].*

connected to a functioning destruction device. If this is the case at your facility, you are not required to report GHG emissions here. The destruction of low Btu gases such as those recovered from an oil/water separator are covered in section 95113(d)(3). Table 13 does provide methane emission factors for gravity, DAF and IAF oil/water separators when they are either covered or uncovered, and not connected to a destruction device. In these cases you will report methane emissions using the method in this section. You need to know the volume of water annually treated by the separator. The volume of treated water is used along with the appropriate oil/water separator EF from Table 13 to calculate methane emissions. A conversion factor of 0.6 is used to convert from nonmethane hydrocarbons to methane.

Table 10.5.2 Fugitive Emissions from Oil/water Separators - Methane

Required Data	Units/Value	Data Source
EF <sub>sep</sub> - NMHC emission factor	kg NMHC/m <sup>3</sup>	operator determined from Table 13, regulation Appendix A
V <sub>water</sub> - volume of water treated annually	m <sup>3</sup> /year	operator measured
CF <sub>NMHC</sub> - NMHC to CH <sub>4</sub> conversion factor	unit-less - 0.6	supplied
Conversion factor - kg to metric tonnes	0.001	supplied

$$\text{CH}_4 = \text{EF}_{\text{sep}} * \text{V}_{\text{water}} * \text{CF}_{\text{NMHC}} * 0.001$$

### 10.5.3 Reporting Storage Tanks Fugitive Emissions

There are three types of emissions from hydrocarbon storage tanks: working losses, breathing losses and flashing losses. Working losses occur as a result of the filling and emptying processes. Internal headspace gas is expelled and external air is pulled into a storage tank as product enters and exits the tank. Breathing losses as a result of changes in environmental parameters, such as solar and thermal heating and cooling, cause changes in internal liquid and vapor volumes. Ambient winds can also cause tank breathing emissions as they pass the tank exterior. Flashing losses occur when liquid introduced into a tank changes pressure and volatiles contained in the liquid "flash" off.

Fugitive tank emissions will be determined using the U.S. EPA TANKS model.<sup>1</sup> This model calculates working and breathing VOC emissions. Model generated VOC outputs will be converted to methane emissions using a default conversion factor of 0.6 (CH<sub>4</sub> = 0.6 \* VOC). Alternatively, you may use the results of storage tank headspace analysis to

<sup>1</sup> Note that this program was developed by the American Petroleum Institute (API). API retains the copyright and has granted permission for the nonexclusive, noncommercial distribution of this material to governmental and regulatory agencies. TANKS is available for public use but cannot be sold without written permission from API, the U.S. EPA, Midwest Research Institute, and The Pechan-Avan:i Group.

**ATTACHMENT IV**  
**Fugitive Emissions**

**FACILITY NAME**  
Project # , Permit Unit #

**Fugitive Emissions Using Screening Emission Factors**

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

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

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

Equipment Type	Service	Component Count	Total allowable leaking components	Screening Value/EF, TOC		VOC emissions (lb/day)
				< 10,000 ppmv (lb/day/source)	$\geq 10,000$ ppmv (lb/day/source)	
Valves	Gas/Light Liquid	10	10	1.852E-03	7.333E+00	73.33
	Light Crude Oil		0	1.005E-03	3.741E+00	0.00
	Heavy Crude Oil		0	7.408E-04	N/A*	0.00
Pump Seals	Gas/Light Liquid	0	0	5.270E-02	4.709E+00	0.00
	Light Crude Oil		0	1.402E-02	4.709E+00	0.00
	Heavy Crude Oil		0	N/A	N/A	N/A
Others	Gas/Light Liquid	0	0	7.778E-03	7.281E+00	0.00
	Light Crude Oil		0	6.931E-03	3.757E-01	0.00
	Heavy Crude Oil		0	3.016E-03	N/A*	0.00
Connectors	Gas/Light Liquid	0	0	6.349E-04	1.370E+00	0.00
	Light Crude Oil		0	5.291E-04	1.238E+00	0.00
	Heavy Crude Oil		0	4.233E-04	4.233E-04	0.00
Flanges	Gas/Light Liquid	0	0	1.482E-03	3.228E+00	0.00
	Light Crude Oil		0	1.270E-03	1.376E+01	0.00
	Heavy Crude Oil		0	1.217E-03	N/A*	0.00
Open-ended Lines	Gas/Light Liquid	0	0	1.270E-03	2.905E+00	0.00
	Light Crude Oil		0	9.524E-04	1.175E+00	0.00
	Heavy Crude Oil		0	7.937E-04	3.762E+00	0.00

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

Total VOC Emissions = 73.3 lb/day

Chevron is assuming that the 10 leakers are valves

NON-LEAKER

**FACILITY NAME**  
 Project # , Permit Unit #

**Fugitive Emissions Using Screening Emission Factors**

California Implementation Guidelines for Estimating Mass Emissions  
 of Fugitive Hydrocarbon Leaks at Petroleum Facilities  
 Table IV-2c. Oil and Gas Production  
 Screening Value Ranges Emission Factors

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

Equipment Type	Service	Component Count	Total allowable leaking components	Screening Value Emission Factor (VOC)		VOC emissions (lb/day)
				$< 10,000$ ppmv (lb/day/source)	$\geq 10,000$ ppmv (lb/day/source)	
Valves	Gas/Light Liquid	706	0	1.852E-03	7.333E+00	1.31
	Light Crude Oil	0	0	1.005E-03	3.741E+00	0.00
	Heavy Crude Oil	0	0	7.408E-04	N/A*	0.00
Pump Seals	Gas/Light Liquid	0	0	5.270E-02	4.709E+00	0.00
	Light Crude Oil	0	0	1.402E-02	4.709E+00	0.00
	Heavy Crude Oil	0	0	N/A	N/A	N/A
Others	Gas/Light Liquid	161	0	7.778E-03	7.281E+00	1.25
	Light Crude Oil	0	0	6.931E-03	3.757E-01	0.00
	Heavy Crude Oil	0	0	3.016E-03	N/A*	0.00
Connectors	Gas/Light Liquid	3,293	0	6.349E-04	1.370E+00	2.09
	Light Crude Oil	0	0	5.291E-04	1.238E+00	0.00
	Heavy Crude Oil	0	0	4.233E-04	4.233E-04	0.00
Flanges	Gas/Light Liquid	556	0	1.482E-03	3.228E+00	0.82
	Light Crude Oil	0	0	1.270E-03	1.376E+01	0.00
	Heavy Crude Oil	0	0	1.217E-03	N/A*	0.00
Open-ended Lines	Gas/Light Liquid	2	0	1.270E-03	2.905E+00	0.00
	Light Crude Oil	0	0	9.524E-04	1.175E+00	0.00
	Heavy Crude Oil	0	0	7.937E-04	3.762E+00	0.00

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

Total VOC Emissions = 5.5 lb/day

**ATTACHMENT V**  
**Emissions Profiles**

Permit #: S-2010-308-0	Last Updated
Facility: CHEVRON USA INC	05/26/2010 EDGEHILR

Equipment Pre-Baselined: NO

	<u>NOX</u>	<u>SOX</u>	<u>PM10</u>	<u>CO</u>	<u>VOC</u>
Potential to Emit (lb/Yr):	0.0	0.0	0.0	0.0	34517.0
Daily Emis. Limit (lb/Day)	0.0	0.0	0.0	0.0	94.6
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	0.0	0.0	0.0	0.0	8629.0
Q2:	0.0		0.0	0.0	8629.0
Q3:	0.0	0.0	0.0	0.0	8629.0
Q4:	0.0	0.0	0.0	0.0	8630.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					1.5
Quarterly Offset Amounts (lb/Qtr)					
Q1:					12944.0
Q2:					12944.0
Q3:					12944.0
Q4:					12944.0

**ATTACHMENT VI**  
**BACT Guideline**

San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 7.1.1\***

Last Update: 3/11/1994

**Thermally Enhanced Oil Recovery - Steam Drive Oil Wells\*\***

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
PM10		1. Vapor control system with either a) Scrubber with 50% PM10 removal, or b) Non-condensables incinerated at steam generator, incinerator, or equal and having a vapor sulfur content no greater than 0.2gr S/100 dscf	1. Vapor control system with either a) Transfer of noncondensable vapors to gas pipeline or b) Re-injection to formation
SOx		1. Vapor control system with either a) Scrubber with 95% sulfur removal, or b) Non-condensables incinerated at steam generator, incinerator, or equal and having a vapor sulfur content no greater than 0.2gr S/100 dscf	1. Vapor control system with either a) Transfer of noncondensable vapors to gas pipeline or b) Re-injection to formation
VOC	1. Vapor control system and inspection and maintenance program with either a) Non-condensables balanced casing vent system tied into tank vapor control system or b) Noncondensables incinerated at steam generator, incinerator, or equal		1. Vapor control system with either a) Transfer of noncondensable vapors to gas pipeline or b) Re-injection to formation

\*\* Control Options wording clarified 10/1/02. No change to any options or limits.

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 - Permit Specific BACT Determinations on Next Page(s)**

## **ATTACHMENT VII BACT Analysis**

### **Top Down BACT Analysis for VOC emissions:**

#### **Step 1 - Identify All Control Technologies**

Vapor Control system and inspection and maintenance (I&M) program with either  
a) non-condensables balanced casing vent system tied into tank vapor control system  
or b) non-condensables incinerated at steam generator, incinerator or equal (Achieved  
in Practice)

Vapor control system with either a) transfer of noncondensable vapors to gas pipeline or  
b) re-injection to formation (Alternate Basic Equipment)

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

None of the above alternatives are technologically infeasible.

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

Vapor control system with either a) transfer of noncondensable vapors to gas pipeline or  
b) re-injection to formation (Alternate Basic Equipment)

Vapor Control system and inspection and maintenance (I&M) program with either  
a) non-condensables balanced casing vent system tied into tank vapor control system  
or b) non-condensables incinerated at steam generator, incinerator or equal (Achieved  
in Practice)

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

Applicant has proposed to collect the TEOR gas in vapor controlled tanks where vapors are incinerated using steam generators. An I&M program consistent with the requirements of Rule 4401 is also proposed. Therefore both achieved-in-practice and alternate basic equipment alternatives have been proposed. A cost effectiveness analysis for this alternative is not required.

#### **Step 5 - Select BACT**

CUSA is proposing both the Achieved-in-Practice and Alternate Basic Equipment alternatives. Therefore, BACT is satisfied.

**ATTACHMENT VIII**  
**HRA Summary**

# San Joaquin Valley Air Pollution Control District Risk Management Review

To: Richard Edgehill, AQE – Permit Services  
 From: Ester Davila, SAQS – Technical Services  
 Date: June 24, 2010  
 Facility Name: Chevron USA  
 Location: LOWSS (Section 29, T26S, R21E)  
 Application #(s): S-2010-308-0  
 Project #: S-1101684

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## A. RMR SUMMARY

RMR Summary			
Categories	TEOR (Unit 308-0)	Project Totals	Facility Totals
Prioritization Score	0.01 <sup>1</sup>	0.01	>1
Acute Hazard Index	0.06	0.06	0.06
Chronic Hazard Index	0.004	0.004	0.004
Individual Cancer Risk (10 <sup>-6</sup> )	0.4	0.4	5.63
T-BACT Required?	No		
Special Permit Conditions?	No		

<sup>1</sup>Project is not eligible to pass on prioritization, as the total facility prioritization score is greater than one.

### Proposed Permit Conditions

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

Units # 308-0

No special conditions required.

## B. RMR REPORT

### I. Project Description

Technical Services received a request on May 26, 2010, to perform a Risk Management Review for a proposed a thermally enhanced oil recovery operation with up to 57 steam-enhanced wells. The project triggers Public Notice for VOC emissions however there are no established ambient air quality standards for VOCs, therefore an AAQA was not performed.

## II. Analysis

Technical Services performed a prioritization using the District's HEARTs database. Toxic emissions were calculated using the emission rates provided by the project engineer and the District's Oil Field Equipment fugitive emissions spreadsheet. In accordance with the District's *Risk Management Policy for Permitting New and Modified Sources* (APR 1905-1, March 2, 2001), risks from the proposed unit's toxic emissions were prioritized using the procedure in the 1990 CAPCOA Facility Prioritization Guidelines and incorporated in the District's HEARTs database. The prioritization score for the proposed unit was less than 1.0 (see RMR Summary Table), however the total facility prioritization score is greater than one, therefore, further analysis was necessary. The AERMOD model was used, with the parameters outlined below and the concatenated meteorological data for 2004-2008 from Bakersfield to determine the dispersion factors (i.e., the predicted concentration or X divided by the normalized source strength or Q) for a receptor grid. These dispersion factors were input into the Hot Spots Analysis and Reporting Program (HARP) risk assessment module to calculate the chronic and acute hazard indices and the carcinogenic risk for the project.

The following parameters were used for the review:

Analysis Parameters Unit 308-0			
Source Type	Area	Receptor Distance (m)	1609
Release Height (m)	1.8	Receptor Type	Residence/Business
Length of X Side (m)	1455	VOC Emission Rate (lb/yr)	34,517
Length of Y Side (m)	1607	Max Hours per Year	8760

## III. Conclusion

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

To ensure that human health risks will not exceed District allowable levels; the permit conditions listed on page 1 of this report must be included for each 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. RMR Request
- B. Additional Information
- C. Toxic Emissions Summary
- D. Prioritization Score
- E. HARP Risk Results
- F. Facility Summary

**ATTACHMENT IX**  
**Title V Compliance Certification Form**



**ATTACHMENT X**  
**Draft ATC**

San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

ISSUANCE DATE: DRAFT  
**DRAFT**

PERMIT NO: S-2010-308-0

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

LOCATION: LIGHT OIL WESTERN STATIONARY SOURCE

SECTION: 29 TOWNSHIP: 26S RANGE: 21E

**EQUIPMENT DESCRIPTION:**

TEOR SYSTEM WITH UP TO 130 STEAM ENHANCED WELLS OPERATED WITH CLOSED CASING VENTS, PERMIT EXEMPT WELL TESTERS, PRESSURE VESSELS, RELIEF TANK, AND MASTER TRAP(S) VENTED TO H2S REMOVAL SYSTEM AND THE FIELD GAS GATHERING PIPELINE

**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 NSR Rule] 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. Operation of H2S scrubber is optional. [District Rule 2201] Federally Enforceable Through Title V Permit
4. 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, 5.0 (as amended December 14, 2006). [District Rule 4401, 4.1] Federally Enforceable Through Title V Permit
5. Emissions rate of VOC associated with the fugitive emissions from TEOR system and ancillary equipment 94.6 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit
6. Production from TEOR operation shall be sent only to tanks equipped with 99% vapor control. [District Rules 2201 and 4401] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director APCO

**DRAFT**  
DAVID WARNER, Director of Permit Services

S-2010-308-0 : Jul 8 2010 4:37PM - EDGEHLR : Joint Inspection NOT Required

7. This permit authorizes 10 leaks exceeding an instrument reading of 10,000 ppmv. Leaks greater in number than 10 and exceeding 10,000 ppmv are a violation of this permit. [District Rules 2201 and 4401] Federally Enforceable Through Title V Permit
8. Casing vent valves shall be closed and plugged. [District Rules 2201 and 4401] Federally Enforceable Through Title V Permit
9. Permittee shall maintain records of the date and well identification where steam injection or well stimulation occurs, current list of all thermally enhanced production wells associated with this operation, permit numbers of tanks receiving production from the TEOR operation, leak inspection results, and accurate fugitive component counts of components in gas service and resulting emissions calculated using the emission factors in the CAPCOA California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities, Table IV-2c, Oil and Gas Production Screening Value Ranges Emission Factors (Feb 1999) . [District Rules 2201 and 4401] Federally Enforceable Through Title V Permit
10. {4272} Gas and liquid leaks are as defined in Section 3.20 of Rule 4401. [District Rule 4401 3.20] Federally Enforceable Through Title V Permit
11. {4273} 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, 5.5.1 and 5.5.2] Federally Enforceable Through Title V Permit
12. {4274} An operator shall be in violation of this rule if any District inspection demonstrates or if any operator inspection conducted pursuant to Section 5.8 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 5.6.2.1 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 5.6.2] Federally Enforceable Through Title V Permit
13. {4275} An operator shall be in violation of this rule if any District inspection demonstrates or if any operator inspection conducted pursuant to Section 5.8 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 3 of Rule 4401. [District Rule 4401 5.6.2] Federally Enforceable Through Title V Permit
14. {4276} 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 5.6.2 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 5.9 of Rule 4401. [District Rule 4401 5.7.1] Federally Enforceable Through Title V Permit
15. {4277} 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 5.7.2] Federally Enforceable Through Title V Permit
16. {4278} 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 5.7.3] Federally Enforceable Through Title V Permit
17. {4279} 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 5.8.1] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

18. {4280} 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 4 of Rule 4401. [District Rule 4401 5.8.2] Federally Enforceable Through Title V Permit
19. {4281} In addition to the inspections required by Section 5.8.1 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 4 of Rule 4401. [District Rule 4401 5.8.3] Federally Enforceable Through Title V Permit
20. {4282} In addition to the inspections required by Sections 5.8.1, 5.8.2 and 5.8.3 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 5.8.4.1 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 5.8.4] Federally Enforceable Through Title V Permit
21. {4283} An operator shall inspect all unsafe-to-monitor components during each turnaround. [District Rule 4401 5.8.5] Federally Enforceable Through Title V Permit
22. {4284} 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 5.8.6] Federally Enforceable Through Title V Permit
23. {4285} 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 5.9.1] Federally Enforceable Through Title V Permit
24. {4286} 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 5.9.2.3 of Rule 4401, or the component is found to be in compliance with the requirements of this rule. [District Rule 4401 5.9.2] Federally Enforceable Through Title V Permit
25. {4287} 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 5.9.3] Federally Enforceable Through Title V Permit
26. {4288} Except for leaking critical components or leaking essential components subject to the requirements of Section 5.9.7 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 4 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 5.9.4] Federally Enforceable Through Title V Permit
27. {4289} 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 5.9.4] Federally Enforceable Through Title V Permit
28. {4290} 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 4 of Rule 4401. [District Rule 4401 5.9.5] Federally Enforceable Through Title V Permit

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29. {4291} The time of the initial leak detection shall be the start of the repair period specified in Table 4 of Rule 4401. [District Rule 4401 5.9.6] Federally Enforceable Through Title V Permit
30. {4292} 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 5.9.7] Federally Enforceable Through Title V Permit
31. {4293} 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 6.1.1] Federally Enforceable Through Title V Permit
32. {4294} A small producer shall maintain monthly records of county-specific crude oil production. For the purpose of this rule, the monthly crude oil production records required by the California Division of Oil, Gas, and Geothermal Resources may be used to satisfy Section 6.1.2 or Rule 4401. [District Rule 4401 6.1.2] Federally Enforceable Through Title V Permit
33. {4295} 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 6.1.3] Federally Enforceable Through Title V Permit
34. {4296} The results of source tests conducted pursuant to Section 4.6.2 of Rule 4401 shall be submitted to the APCO within 60 days after the completion of the source test. [District Rule 4401 6.1.4] Federally Enforceable Through Title V Permit
35. {4297} 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 6.1.5] Federally Enforceable Through Title V Permit
36. {4298} 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 6.1.6] Federally Enforceable Through Title V Permit
37. {4299} 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 6.1.7] Federally Enforceable Through Title V Permit
38. {4300} Operator shall keep a copy of the APCO-approved Operator Management Plan at the facility. [District Rule 4401 6.1.8] Federally Enforceable Through Title V Permit
39. {4301} Operator shall submit to the APCO not later than June 14, 2007 a list of all gauge tanks, as defined in Section 3.17. 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 6.1.9] Federally Enforceable Through Title V Permit
40. {4302} The results of gauge tank TVP testing conducted pursuant to Section 6.2.5 shall be submitted to the APCO within 60 days after the completion of the testing. [District Rule 4401 6.1.10] Federally Enforceable Through Title V Permit
41. {4303} 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 6.1.11] Federally Enforceable Through Title V Permit
42. {4304} 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. [District Rule 4401 6.2.1] Federally Enforceable Through Title V Permit

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43. {4305} 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 and control system are incinerated in fuel burning equipment, an internal combustion engine or in a smokeless flare. [District Rule 4401 6.2.2] Federally Enforceable Through Title V Permit
44. {4306} If approved by EPA, ARB, and the APCO, an operator need not comply with the annual testing requirement of Section 6.2.1 for a vapor control system which does not have a VOC destruction device. [District Rule 4401 6.2.3] Federally Enforceable Through Title V Permit
45. {4307} An operator seeking approval pursuant to Section 6.2.2 or Section 6.2.3 shall submit a written request and supporting information to the APCO. The District shall evaluate the request and if approved by the APCO, the District shall provide EPA and ARB with a copy of the evaluation and shall request EPA and ARB approval. The District evaluation and the APCO request shall be deemed approved unless EPA or ARB objects to such approval in writing within 45 days of the receipt of the APCO request. [District Rule 4401 6.2.4] Federally Enforceable Through Title V Permit
46. {4308} An operator shall comply with the following requirements for each gauge tank, as defined in Section 3.17 of Rule 4401: Conduct an initial TVP testing of the produced fluid in each gauge tank not later than June 14, 2007. Thereafter, an operator shall 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 6.1.10 of Rule 4401. [District Rule 4401 6.2.5] Federally Enforceable Through Title V Permit
47. {4309} 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 6.3.1] Federally Enforceable Through Title V Permit
48. {4310} 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 6.3.2] Federally Enforceable Through Title V Permit
49. {4311} 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 6.3.3] Federally Enforceable Through Title V Permit
50. {4312} 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 6.3.5] Federally Enforceable Through Title V Permit

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51. {4313} 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 6.4] Federally Enforceable Through Title V Permit
52. Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 8,6295 lb-VOC/Q1, 8,629 lb-VOC/Q2, 8,629 lb-VOC/Q3, and 8,629 lb-VOC/Q4. Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 9/21/06). [District Rule 2201] Federally Enforceable Through Title V Permit
53. ERC Certificate Number S-3222-1 (or a certificate split from this certificate) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit

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