



OCT 21 2016

Mr. John Haley
Aera Energy LLC
PO Box 11164
Bakersfield, CA 93389

**Re: Proposed ATC / Certificate of Conformity (Significant Mod)
District Facility # S-1547
Project # 1162420**

Dear Mr. Haley:

Enclosed for your review is the District's analysis of an application for Authority to Construct for the facility identified above. You requested that a Certificate of Conformity with the procedural requirements of 40 CFR Part 70 be issued with this project. The project authorizes three VOC destruction devices.

After addressing all comments made during the 30-day public notice and the 45-day EPA comment periods, the District intends to issue the Authority to Construct with a Certificate of Conformity. Please submit your comments within the 30-day public comment period, as specified in the enclosed public notice. Prior to operating with modifications authorized by the 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.

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,

Arnaud Marjollet
Director of Permit Services

Enclosures

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

Seyed Sadredin
Executive Director/Air Pollution Control Officer

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

Central Region (Main Office)
1990 E. Gettysburg Avenue
Fresno, CA 93726-0244
Tel: (559) 230-6000 FAX: (559) 230-6061

Southern Region
34946 Flyover Court
Bakersfield, CA 93308-9725
Tel: 661-392-5500 FAX: 661-392-5585

Authority to Construct
Authority to Construct Application Review
Major Source, Heavy Oil, VOC Control Device

Facility Name: Aera Energy, LLC Date: October 17, 2016
Mailing Address: P O Box 11164 Engineer: Richard Edgehill
Bakersfield, CA 93389-1164 Lead Engineer: Steve Leonard
Contact Person: John Haley and Brent Winn
Telephone: 661-665-5279 (JE) 661- 665-4363 (BW)
Application #(s): S-1547-359-32, '-1348-0, '-1349-0, and '-1350-0
Project #: S-1162420
Deemed Complete: June 16, 2016

I. Proposal

Aera Energy, LLC (Aera) has requested Authority to Construct permits to install up to three (3) low emissions VOC destruction devices (VDDs) within the Belridge Oil Field. The units will be used combust vapor from vapor control system (VCS) serving Thermally Enhanced Oil Recovery (TEOR) operation (S-1547-359). Allowing the VCS to vent to a different permitted disposal device is not a change in method of operation and is not considered a modification (to TEOR operation S-1547-359) pursuant to District Rule 2201.

The project results in an increase in emissions triggering BACT, offsets, and public notice.

PTO S-1547-359-30 is included in **Attachment I**.

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

II. Applicable Rules

Rule 2201	New and Modified Stationary Source Review Rule (2/18/16)
Rule 2520	Federally Mandated Operating Permits (6/21/01)
Rule 2410	Prevention of Significant Deterioration (6/16/11)
Rule 4101	Visible Emissions (02/17/05)
Rule 4102	Nuisance (12/17/92)
Rule 4201	Particulate Matter Concentration (12/17/92)
Rule 4311	Flares (06/18/09)

Rule 4401 Steam Enhanced Crude Oil Production Wells (06/16/11)
Rule 4801 Sulfur Compounds (12/17/92)
Rule 4311 Flares (6/18/09) – **Not applicable** – please see Compliance
Section
CH&SC 42301.6 School Notice
Public Resources Code 21000-21177: California Environmental Quality Act
(CEQA)
California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-
15387: CEQA Guidelines

III. Project Location

The equipment will be operated in the Belridge Oil Field, SE Section 2, T 29S, R21E or Section 3, T29S, R21E within the heavy oil western stationary source. The facility is not located within 1,000 feet of the outer boundary of any K-12 school. Therefore, pursuant to CH&SC 42301.6, California Health and Safety Code (School Notice), public notification is not required.

IV. Process Description

The vapor control system collects vapors from the tanks, and routes the uncondensed vapors to steam generators for disposal.

Proposed Modification

The proposed VOC destruction devices (VDDs) will be used as an option to combust collected vapors when diverted from steam generators. Up to three CEB-800 CA VDDs units will be used. However, Aera expects that only 2 units will operate at any given time.

Manufacturer's information on the VOC destruction devices is included in **Attachment II**.

V. Equipment Listing

Pre-Project Equipment Description:

PTO S-1547-359-30: VAPOR COLLECTION AND CONTROL SYSTEM SERVING
1657 THERMALLY ENHANCED WELLS IN SECTIONS 1,
2, 3, 4, 10, 11, 12 OF T29S, R21E, SECTIONS 33, 34, 35
OF T28S, R21E

Proposed Modification:

- ATC S-1547-359-32: MODIFICATION OF VAPOR COLLECTION AND CONTROL SYSTEM SERVING 1657 THERMALLY ENHANCED WELLS IN SECTIONS 1, 2, 3, 4, 10, 11, 12 OF T29S, R21E, SECTIONS 33, 34, 35 OF T28S, R21E: APPROVE 3 VOC DEVICES
- S-1547-1348-0: 36 MMBTU/HR CEB MODEL 800-CA VOC DESTRUCTION DEVICE (OR EQUIVALENT)
- S-1547-1349-0: 36 MMBTU/HR CEB MODEL 800-CA VOC DESTRUCTION DEVICE (OR EQUIVALENT)
- S-1547-1350-0: 36 MMBTU/HR CEB MODEL 800-CA VOC DESTRUCTION DEVICE (OR EQUIVALENT)

Post Project Equipment Description:

- S-1547-359-32: VAPOR COLLECTION AND CONTROL SYSTEM SERVING 1657 THERMALLY ENHANCED WELLS IN SECTIONS 1, 2, 3, 4, 10, 11, 12 OF T29S, R21E, SECTIONS 33, 34, 35 OF T28S, R21E
- S-1547-1348-0: UP TO 36 MMBTU/HR CEB MODEL 800-CA VOC DESTRUCTION DEVICE
- S-1547-1349-0: UP TO 36 MMBTU/HR CEB MODEL 800-CA VOC DESTRUCTION DEVICE
- S-1547-1350-0: UP TO 36 MMBTU/HR CEB MODEL 800-CA VOC DESTRUCTION DEVICE

VI. Emission Control Technology Evaluation

The VCS collects vapors from numerous well casings and various tanks/vessels within the Belridge Oil field. Heat exchangers and knockout vessels are used to collect entrained liquids. The uncondensed vapors are then incinerated in steam generators. This project adds a secondary vapor disposal system consisting of three VDDs with an expected VOC control efficiency of 99%.

VII. Emissions Calculations

Allowing a vapor control system to vent to a different permitted disposal device or allowing a control device, currently allowed to burn waste gas, to burn waste gas from a different source (provided that the device can continue to meet its emission limits) is not a change in the method of operation of the vapor control system provided that the vapor

control system can continue to meet its control efficiency requirement. The control efficiency will remain at 95% control; therefore, VCS S-1547-359 is not being modified pursuant to Rule 2201 and formal calculations are not required.

A. Assumptions

- Facility will operate 24 hours per day, 7 days per week, and 52 weeks per year.
- The VDDs combust produced natural gas.
- Combined sulfur emissions from vapor disposal devices, as limited on PTO S-1547-359-30, 336.92 lb/day, are not expected to change.
- Only two VDDs will operate at any given time (SLC Condition)
- SLC annual heat input, 2 x 36 MMBtu/hr x 8760 hr/yr
- Pilot gas flow rate: 2.88 Mcf/day.
- Pilot emissions are neglected, see emissions calculation below (< 2 lb/day NO_x, SO_x, PM₁₀, CO, and VOC).

B. Emission Factors

Combustion Emissions:

- NO_x = 0.018, lb/MMBtu – manufacturer
- SO_x = 336.92 lb/day (as sulfur included on S-1547-359)
- PM₁₀ = 0.008 lb/MMBtu – BACT for flares
- CO = 0.011 lb/MMBtu – manufacturer
- VOC = 0.004 lb/MMBtu – manufacturer

Pilot Gas (Natural Gas)

The following emission factors for NO_x, CO, VOC, and PM₁₀ are from AP-42 (7/98), Table 1.4-1 & 1.4-2. The SO_x emission factor is from District Policy APR 1720.

Emission Factors	
Pollutant	EF _(Natural Gas) (lb/MMBtu)
NO _x	0.1
SO _x ¹	0.00285
PM ₁₀	0.0076
CO	0.084
VOC	0.0055

¹ Based on a natural gas HHV of 1000 Btu/scf and a total sulfur content of 1.0 gr/100 scf of gas (District Policy APR 1720).

C. Calculations

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

Since permits S-1547-1348 through '1350 are new emissions units, the
PE₁ = 0

2. Post Project Potential to Emit, (PE₂)

Pilot emissions: 0.00288 MMscf/day x 1000 MMBtu/MMscf
= 2.88 MMBtu/day

Emissions of NO_x, SO_x, PM₁₀, CO, and VOC are < 2 lb/day.

PTO S-1547-359-30

DEL (Condition #11): VOC: 1,888.1 lb/day, (x 365 days/yr = 689,157 lb/yr)
(Condition # 11) SO_x: 336.92 lb S/day* x 2 lb SO_x/lb S = 673.84 lb SO_x/day
x 365 days/yr = 245,952 lb SO_x/yr

*SLC for all units receiving gas from sulfur removal units

S-1547-1348-0 through '-1350-0

The Post-Project Potential to Emit (PE2) is calculated as follows:

Daily Post Project Emissions				
Pollutant	Emissions Factor (lb/MMBtu)	Rating (MMBtu/hr)	Daily Hours of Operation (hrs/day)	PE2 Total (lb/day)
NO _x	0.018	36	24	15.6
SO _x	0*	36	24	0
PM ₁₀	0.008	36	24	6.9
CO	0.011	36	24	9.5
VOC	0.004	36	24	3.5

Annual Post Project Emissions				
Pollutant	Emissions Factor (lb/MMBtu)	Rating (MMBtu/hr)	Annual Hours of Operation (hrs/yr)	PE2 Total (lb/yr)
NO _x	0.018	36	8760	5,676
SO _x	0*	36	8760	0
PM ₁₀	0.008	36	8760	2,523
CO	0.011	36	8760	3,469
VOC	0.004	36	8760	1,261

*SLC for all units receiving gas from sulfur removal units included in '-359

SLC Emissions (only 2 VDDs operate simultaneously)

NO_x: 0.018 lb/MMBtu x 630,720 MMBtu/yr = 11,353 lb/yr
 PM₁₀: 0.008 lb/MMBtu x 630,720 MMBtu/yr = 5,046 lb/yr
 CO: 0.011 lb/MMBtu x 630,720 MMBtu/yr = 6,938 lb/yr
 VOC: 0.004 lb/MMBtu x 630,720 MMBtu/yr = 2,523 lb/yr

Emissions Profiles are included in **Attachment III**.

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

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

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

***SSPE Calculator (6-17-16, PTOs only)**

	lb/yr	Tons/yr
NOx	2,440,602	1,220
SOx	2,639,675	1,320
PM10	1,767,984	884
CO	4,949,273	2,475
VOC	3,672,852	1,836

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

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

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

5. Major Source Determination

Rule 2201 Major Source Determination:

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

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

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

Rule 2410 Major Source Determination:

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

PSD Major Source Determination (tons/year)						
	NO2	VOC	SO2	CO	PM	PM10
Estimated Facility PE before Project Increase	≥1,220*					
PSD Major Source Thresholds	250	250	250	250	250	250
PSD Major Source ? (Y/N)	Y	Y/N	Y/N	Y/N	Y/N	Y/N

*SSPE Calculator

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

6. Baseline Emissions (BE)

a. Annual BE

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

BE = Pre-project Potential to Emit for:

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

otherwise,

BE = Historic Actual Emissions (HAE), calculated pursuant to Section 3.23

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

7. SB 288 Major Modification

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

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

SB 288 Major Modification Thresholds			
Pollutant	Project PE2 (lb/year)	Threshold (lb/year)	SB 288 Major Modification Calculation Required?
NO _x	11,353	50,000	No
SO _x	0	80,000	No
PM ₁₀	5,046	30,000	No
VOC	2,523	50,000	No

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

8. Federal Major Modification

District Rule 2201 states that a Federal Major Modification is the same as a "Major Modification" as defined in 40 CFR 51.165 and part D of Title I of the CAA.

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

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

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

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

Federal Major Modification Thresholds for Emission Increases			
Pollutant	Total Emissions Increases (lb/yr)	Thresholds (lb/yr)	Federal Major Modification?
NO _x	11,353	0	Yes
VOC	2,523	0	Yes
PM ₁₀	5,046	30,000	No
SO _x	0	80,000	No

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

Federal Offset Quantities:

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

NO _x		Federal Offset Ratio	1.5
Permit No.	Actual Emissions (lb/year)	Potential Emissions (lb/year)	Emissions Change (lb/yr)
S-1547-1348	0	11,353	11,353
S-1547-1349			
S-1547-1350			
Net Emission Change (lb/year):			11,353
Federal Offset Quantity: (NEC * 1.5)			17,030

VOC		Federal Offset Ratio	1.5
Permit No.	Actual Emissions (lb/year)	Potential Emissions (lb/year)	Emissions Change (lb/yr)
S-1547-1348	0	2,523	2,523
S-1547-1349			
S-1547-1350			
Net Emission Change (lb/year):			2,523
Federal Offset Quantity: (NEC * 1.5)			3,785

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

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

- NO₂ (as a primary pollutant)
- SO₂ (as a primary pollutant)
- CO
- PM
- PM₁₀
- Sulfuric acid mist
- Hydrogen sulfide (H₂S)
- Total reduced sulfur (including H₂S)
- Reduced sulfur compounds

I. Project Location Relative to Class 1 Area

As demonstrated in the “PSD Major Source Determination” Section above, the facility was determined to be an existing PSD Major Source. Because the project is not located within 10 km (6.2 miles) of a Class 1 area – modeling of the emission increase is not required to determine if the project is subject to the requirements of Rule 2410.

II. Project Emission Increase – Significance Determination

a. Evaluation of Calculated Post-project Potential to Emit for New or Modified Emissions Units vs PSD Significant Emission Increase Thresholds

As a screening tool, the post-project potential to emit from all new and modified units is compared to the PSD significant emission increase thresholds, and if the

total potentials to emit from all new and modified units are below the applicable thresholds, no further PSD analysis is needed.

PSD Significant Emission Increase Determination: Potential to Emit (tons/year)					
	NO2	SO2	CO	PM	PM10
Total PE from New and Modified Units	5.7	0	3.5	2.5	2.5
PSD Significant Emission Increase Thresholds	40	40	100	25	15
PSD Significant Emission Increase?	N	N	N	N	N

As demonstrated above, because the post-project total potentials to emit from all new and modified emission units are below the PSD significant emission increase thresholds, this project is not subject to the requirements of Rule 2410 and no further discussion is required.

10. Quarterly Net Emissions Change (QNEC)

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

QNEC = PE2 - BE, where:

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

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

BE = Baseline Emissions (per Rule 2201) for each emissions unit, lb/qr.

Using the values in Sections VII.C.2 and VII.C.6 in the evaluation above, quarterly PE2 and quarterly BE is calculated in the following tables:

QNEC S-1547-1348 through '-1350 (lb/qr)			
Pollutant	PE2	BE	QNEC
NO _x	5,676	0	1419
SO _x	0	0	0
PM ₁₀	2,523	0	630.75
CO	3,469	0	867.25
VOC	1,261	0	315.25

VIII. Compliance

Rule 2201 - New and Modified Stationary Source Review Rule

As discussed previously, TEOR operation S-1547-359 is not being modified and is not subject to Rule 2201.

A. Best Available Control Technology (BACT)

1. BACT Applicability

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

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

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

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

As seen in Section VII.C.2 above, the applicant is proposing to install three VDDs (S-1547-1348, '-1349, and '-1350) with a PE greater than 2 lb/day for NO_x, PM₁₀, CO, and VOC. BACT is triggered for NO_x, PM₁₀, CO, and VOC since the PEs are greater than 2 lbs/day.

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

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

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

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

d. SB 288/Federal Major Modification

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

As discussed in Section VII.C.8 above, this project does constitute a Federal Major Modification for NO_x and VOC emissions. Therefore, BACT is triggered for all pollutants with an emissions increase i.e. NO_x, PM10, CO, and VOC.

2. BACT Guideline

BACT Guideline 1.4.2, applies to the VDD*. [waste gas flare – Incinerating Produced Gas] (See **Attachment IV**)

* Although the VDDS are not flares as defined by Rule 4311, as they have fuel-air premixing and surface combustion, the technologies listed in BACT Guideline 1.4.2 adequately represent those associated with combustion of process gas "flare-type" devices.

3. Top-Down BACT Analysis

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

- NO_x: use of VDD
- PM₁₀: use of VDD and smokeless combustion
- CO: use of VDD
- VOC: use of VDD

B. Offsets

1. Offset Applicability

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

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

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

2. Quantity of Offsets Required

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

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

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

Where,

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

BE = Baseline Emissions, (lb/year)

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

DOR = Distance Offset Ratio, determined pursuant to Section 4.8

BE = PE1 for:

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

otherwise,

BE = HAE

As calculated in Section VII.C.6 above, the BE from the three units are equal to zero since the units are new. Also, there are no increases in cargo carrier emissions. Therefore offsets can be determined as follows and shown in the table below:

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

ICCE = 0 lb/year

NO_x

The DOR is 1.5:1 as the project is a Federal Major Modification.

$$\begin{aligned} \text{Offsets Required (lb/year)} &= 11,353 \times 1.5 \\ &= 17,030 \text{ lb NO}_x\text{/year} \end{aligned}$$

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

$$\begin{aligned} \text{Quarterly offsets required (lb/qtr)} &= (17,030 \text{ lb NO}_x\text{/year}) \div (4 \text{ quarters/year}) \\ &= 4,257.5 \text{ lb/qtr} \end{aligned}$$

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

As shown in the calculation above, the quarterly amount of offsets required for this project, when evenly distributed to each quarter, results in fractional pounds of offsets being required each quarter. Since offsets are required to be withdrawn as whole pounds, the quarterly amounts of offsets need to be adjusted to ensure the quarterly values sum to the total annual amount of offsets required.

To adjust the quarterly amount of offsets required, the fractional amount of offsets required in each quarter will be summed and redistributed to each quarter based on the number of days in each quarter. The redistribution is based on the Quarter 1 having the fewest days and the Quarters 3 and 4 having the most days. The redistribution method is summarized in the following table:

Redistribution of Required Quarterly Offsets				
(where X is the annual amount of offsets, and $X \div 4 = Y.z$)				
Value of z	Quarter 1	Quarter 2	Quarter 3	Quarter 4
.0	Y	Y	Y	Y
.25	Y	Y	Y	Y+1
.5	Y	Y	Y+1	Y+1
.75	Y	Y+1	Y+1	Y+1

Therefore the appropriate quarterly emissions to be offset are as follows:

<u>1st Quarter</u>	<u>2nd Quarter</u>	<u>3rd Quarter</u>	<u>4th Quarter</u>	<u>Total Annual</u>
4,257	4,257	4,258	4,258	17,030

The applicant has stated that the facility plans to use ERC S-3689-2 to offset the increases in NO_x emissions associated with this project in the quantities listed above.

NO_x Offsets listed on each VDD

	1 st Qtr	2 nd Qtr	3 rd Qtr	4 th Qtr
S-1547-1348	1419	1419	1419	1419
S-1547-1349	1419	1419	1419	1419
S-1547-1350	1419	1419	1420	1420
Total	4,257	4,257	4,258	4,258

PM₁₀

The applicant has stated that the facility plans to use ERC S-3833-5 to offset the increases in PM₁₀ emissions associated with this project. ERC S-3833-5 reductions occurred at Aera's Heavy Oil Central Stationary Source (HOCSS) which is greater than 15 miles from S-1547. Therefore, the DOR is 1.5:1 (District Rule 2201, Section 4.8.4). The interpollutant offset ratio between SO_x and PM₁₀ is 1:1 (District Policy).

$$\begin{aligned} \text{Offsets Required (lb/year)} &= 5046 \times 1.5 \\ &= 7,569 \text{ lb PM}_{10}/\text{year} \end{aligned}$$

$$\begin{aligned} \text{Quarterly offsets required (lb/qtr)} &= (7,569 \text{ lb PM}_{10}/\text{year}) \div (4 \text{ quarters/year}) \\ &= 1892.25 \text{ lb/qtr} \end{aligned}$$

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

<u>1st Quarter</u>	<u>2nd Quarter</u>	<u>3rd Quarter</u>	<u>4th Quarter</u>
1,892	1,892	1,892	1,893

PM₁₀ Offsets listed on each VDD

	1 st Qtr	2 nd Qtr	3 rd Qtr	4 th Qtr
S-1547-1348	630	630	630	631
S-1547-1349	631	631	631	631
S-1547-1350	631	631	631	631
Total	1,892	1,892	1,892	1,893

CO

$$\text{PE2} = 6,938 \text{ lb/yr}$$

Notwithstanding the above, Section 4.6.1 of Rule 2201 states that emissions offsets are not required for increases in carbon monoxide in attainment areas

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

VOC

The DOR is 1.5:1 as the project is a Federal Major Modification.

$$\begin{aligned} \text{Offsets Required (lb/year)} &= 2523 \times 1.5 \\ &= 3785 \text{ lb VOC/year} \end{aligned}$$

$$\begin{aligned} \text{Quarterly offsets required (lb/qtr)} &= (3,785 \text{ lb VOC}_x\text{/year}) \div (4 \text{ quarters/year}) \\ &= 946.25 \text{ lb/qtr} \end{aligned}$$

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

$$\begin{array}{cccc} \frac{1^{\text{st}} \text{ Quarter}}{946} & \frac{2^{\text{nd}} \text{ Quarter}}{946} & \frac{3^{\text{rd}} \text{ Quarter}}{946} & \frac{4^{\text{th}} \text{ Quarter}}{947} \end{array}$$

The applicant has stated that the facility plans to use ERC S-3919-1 to offset part of the increases in VOC emissions associated with this project in the quantities listed above.

VOC Offsets listed on each VDD

	1 st Qtr	2 nd Qtr	3 rd Qtr	4 th Qtr
S-1547-1348	315	315	315	315
S-1547-1349	315	315	315	316
S-1547-1350	316	316	316	316
Total	946	946	946	947

Proposed Rule 2201 (offset) Conditions (S-1547-1348-0 thru '-1350-0):

- {GC# 4447 - edited} Prior to operating equipment under this Authority to Construct, permittee shall surrender NO_x emission reduction credits for the following quantity of emissions: 1st quarter – 1419 lb, 2nd quarter – 1419 lb, 3rd quarter – 1419 lb, and fourth quarter – 1419 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 4/21/11) for the ERC specified below. [District Rule 2201]

- {GC# 4447 - edited} Prior to operating equipment under this Authority to Construct, permittee shall surrender PM10 emission reduction credits for the following quantity of emissions: 1st quarter – 630 lb, 2nd quarter – 630 lb, 3rd quarter – 630 lb, and fourth quarter – 631 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 4/21/11) for the ERC specified below. [District Rule 2201]
- {GC# 4447 - edited} Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 315 lb, 2nd quarter – 315 lb, 3rd quarter – 315 lb, and fourth quarter – 315 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 4/21/11) for the ERC specified below. [District Rule 2201]
- {GC# 1983} ERC Certificate Numbers S-3919-1, S-3689-2, and S-3833-5 (or certificates split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201]

C. Public Notification

1. Applicability

Public noticing is required for:

- a. New Major Sources, Federal Major Modifications, and SB 288 Major Modifications,
- b. Any new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any one pollutant,
- c. Any project which results in the offset thresholds being surpassed, and/or
- d. Any project with an SSIPE of greater than 20,000 lb/year for any pollutant.
- e. Any project which results in a Title V significant permit modification

a. New Major Sources, Federal Major Modifications, and SB 288 Major Modifications

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

As demonstrated in Sections VII.C.7 and VII.C.8, this project is a Federal Major Modification. Therefore, public noticing for SB 288 or Federal Major Modification purposes is required.

b. PE > 100 lb/day

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

c. Offset Threshold

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

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

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

d. SSIPE > 20,000 lb/year

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

SSIPE Public Notice Thresholds					
Pollutant	SSPE2 (lb/year)	SSPE1 (lb/year)	SSIPE (lb/year)	SSIPE Public Notice Threshold	Public Notice Required?
NO _x	>20,000 lb/year	>20,000 lb/year	11,353	20,000 lb/year	No
SO _x	>54,750 lb/year	>54,750 lb/year	0	20,000 lb/year	No
PM ₁₀	>29,200 lb/year	>29,200 lb/year	5,046	20,000 lb/year	No
CO	>200,000 lb/year	>200,000 lb/year	6,938	20,000 lb/year	No
VOC	>20,000 lb/year	>20,000 lb/year	2,523	20,000 lb/year	No

As demonstrated above, the SSIPEs for all pollutants were less than 20,000 lb/year; therefore public noticing for SSIPE purposes is not required.

e. Title V Significant Permit Modification

As shown in the Discussion of Rule 2520 below, this project constitutes a Title V significant modification. Therefore, public noticing for Title V significant modifications is required for this project.

2. Public Notice Action

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

D. Daily Emission Limits (DELs)

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

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

Proposed Rule 2201 (DEL) Conditions ('-1348 thru '-1350):

15. *Emission rates from this unit shall not exceed any of the following limits: 0.018 lb-NOx/MMBtu (15 ppmv @ 3% O₂); 0.008 lb-PM₁₀/MMBtu; 0.011 lb-CO/MMBtu (14.9 ppmv @ 3% O₂); or 0.004 lb-VOC/MMBtu (9.5 ppmv @ 3% O₂) [District Rule 2201] Y*

E. Compliance Assurance

The following applies to all three units ('-1348 thru '-1350):

1. Source Testing

Source testing will be required as stated in the following conditions:

22. *Permittee shall submit written notification to the District upon designating the unit as nonoperational or active. [District Rules 1070 and 2201] Y*
23. *If unit is not in operation, normal source testing shall not be required. Upon recommencing operation of this unit, normal source testing shall resume. Any source testing required by this permit shall be performed within 60 days of recommencing operation of this unit, regardless of whether the unit remains active or is again nonoperational. [District Rule 2080] Y*
24. *Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Y*
25. *The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Y*
26. *Source testing to measure NO_x, CO, and VOC emissions from this unit while fired on natural gas shall be conducted within 60 days of initial start-up. [District Rule 2201] Y*
27. *Source testing to measure NO_x, CO, and VOC emissions from this unit while fired on natural gas shall be conducted at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rule 2201] Y*

28. *NO_x emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 1080 and 2201] Y*
29. *CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 1080 and 2201] Y*
30. *VOC emissions for source test purposes shall be determined using EPA Method 18 or equivalent test method approved by the District. [District Rules 1080 and 2201] Y*
31. *All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4320. [District Rules 1080 and 2201] Y*
32. *For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 1080 and 2201] N*

2. Monitoring

Monitoring will be required as stated in the following conditions:

7. *Permittee shall document compliance with the annual heat input limit required by this permit by calculation using the volume of gas combusted by each of S-1547-1348, '-1349, and '-1350 and the HHV of the gas. The HHV of the gas shall be determined annually. [District Rule 2201] Y*
18. *The permittee shall monitor and record the stack concentration of NO_x, CO, and O₂ at least once every quarter (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall recommence the next calendar quarter where the unit operates more than 5 days. [District Rules 1070 and 2201] Y*
19. *If either the NO_x or CO concentrations corrected to 3% O₂, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions*

concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 1070 and 2201] Y

20. *All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 1070 and 2201] Y*
21. *The permittee shall maintain records of: (1) the date and time of NO_x, CO, and O₂ measurements, (2) the O₂ concentration in percent and the measured NO_x and CO concentrations corrected to 3% O₂, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 1070 and 2201] Y*

3. Recordkeeping

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

34. *All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rule 2201] Y*

4. Reporting

No reporting is required to demonstrate compliance with Rule 2201.

F. Ambient Air Quality Analysis (AAQA)

An AAQA shall be conducted for the purpose of determining whether a new or modified Stationary Source will cause or make worse a violation of an air quality

standard. The District's Technical Services Division conducted the required analysis. Refer to **Attachment VI** of this document for the AAQA summary sheet.

The proposed location is in an attainment area for NO_x, CO, and SO_x. As shown by the AAQA summary sheet the proposed equipment will not cause a violation of an air quality standard for NO_x, CO, or SO_x.

The proposed location is in a non-attainment area for the state's PM₁₀ as well as federal and state PM_{2.5} thresholds. As shown by the AAQA summary sheet the proposed equipment will not cause a violation of an air quality standard for PM₁₀ and PM_{2.5}.

G. Compliance Certification

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

H. Alternate Siting Analysis

The current project occurs at an existing facility. The applicant proposes to install 3 vapor destruction devices.

Since the project will provide new equipment to be used at the same location, the existing site will result in the least possible impact from the project. Alternative sites would involve the relocation and/or construction of various support structures on a much greater scale, and would therefore result in a much greater impact.

Rule 2410 Prevention of Significant Deterioration

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

Rule 2520 Federally Mandated Operating Permits

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

As discussed above, the facility has applied for a Certificate of Conformity (COC); therefore, the facility must apply to modify their Title V permit with an administrative amendment prior to operating with the proposed modifications. Continued compliance

with this rule is expected. The facility shall not implement the changes requested until the final permit is issued. The Title V Compliance Certification form is included in **Attachment VII**.

Rule 4101 - Visible Emissions

Rule 4101 states that no air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. The ATCs limit opacity to 5% to ensure smokeless combustion (BACT for PM10).

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

Rule 4102 Nuisance

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

California Health & Safety Code 41700 (Health Risk Assessment)

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

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

The cancer risk for this project is shown below:

A. RMR SUMMARY

RMR Summary					
Categories	VOC Destruction Device (Unit 1348-0)	VOC Destruction Device (Unit 1349-0)	VOC Destruction Device (Unit 1350-0)	Project Totals	Facility Totals
Prioritization Score	88.0	88.0	88.0	>1.0	>1.0
Acute Hazard Index	0.00	0.00	0.00	0.00	0.37
Chronic Hazard Index	0.00	0.00	0.00	0.00	0.14
Maximum Individual Cancer Risk	1.05E-06	1.05E-06	1.05E-06	3.15E-06	13.38E-06
T-BACT Required?	Yes	Yes	Yes		
Special Permit Requirements?	Yes	Yes	Yes		

1. Proposed Permit Requirements

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

Units 1348-0, 1349-0, 1350-0

1. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction.
2. The unit is only allowed to operate at two locations (35.43216, -119.68367/Sec. 2, T29S, R21E; or 35.43504, -119.70472/Sec. 3, T29S, R21E).

T-BACT is required for these units because of emissions of PAHs which are VOCs.

Discussion of T-BACT

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

For this project T-BACT is triggered for PM₁₀ and VOC. T-BACT is satisfied with BACT for PM₁₀ and VOC (see **Attachment VI**), which is the use of vapor destruction devices with smokeless combustion; therefore, compliance with the District's Risk Management Policy is expected.

Rule 4201 Particulate Matter Concentration

Section 3.1 prohibits discharge of dust, fumes, or total particulate matter into the atmosphere from any single source operation in excess of 0.1 grain per dry standard cubic foot.

F-Factor for NG:		8,578 dscf/MMBtu at 60 °F
PM10 Emission Factor:		0.008 lb-PM10/MMBtu
Percentage of PM as PM10 in Exhaust:	100%	
Exhaust Oxygen (O ₂) Concentration:	3%	
Excess Air Correction to F Factor =	$\frac{20.9}{(20.9 - 3)}$	= 1.17

$$GL = \left(\frac{0.008 \text{ lb-PM}}{\text{MMBtu}} \times \frac{7,000 \text{ grain}}{\text{lb-PM}} \right) / \left(\frac{8,578 \text{ ft}^3}{\text{MMBtu}} \times 1.17 \right)$$

$$GL = 0.0065 \text{ grain/dscf} < 0.1 \text{ grain/dscf}$$

Therefore, compliance with District Rule 4201 requirements is expected and a permit condition will be listed on the permit as follows:

- {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]

Rule 4311 Flares

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

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

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

Rule 4401 Steam Enhanced Crude Oil Production Wells

This rule is applicable to permit S-1547-359. Compliance has been demonstrated and continued compliance is expected as the project is not expected to affect compliance status. The VDDs are expected to have a VOC control efficiency of 99% consistent with the rule requirement (Section 3.5).

CH&SC 42301.6 California Health & Safety Code (School Notice)

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

California Environmental Quality Act (CEQA)

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

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

Greenhouse Gas (GHG) Significance Determination

District is a Responsible Agency

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

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

result in significant GHG impacts in the San Joaquin Valley. As such, the EIR included mitigation measures for GHG.

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

District CEQA Findings

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

In 2015, Kern County revised their *Kern County Zoning Ordinance* in regards to exploration, drilling and production of hydrocarbon resources projects. Kern County served as lead agency for the revision to their ordinance under the California Environmental Quality Act (CEQA), and prepared an Environmental Impact Report (EIR) that was certified on November 9, 2015. The revised Kern County Zoning Ordinance establishes a written process (Conformity Review permit process or Minor Activity permit) by which oil and gas exploration projects involving site-specific operations can be evaluated to determine whether the environmental effects of the operation were covered in the *Kern County Zoning Ordinance* EIR.

For stationary source emissions that are below the offset threshold, i.e. not required to surrender ERCs, and for non-stationary source emissions, Kern County entered into an Oil and Gas Emission Reduction Agreement (Oil and Gas ERA) with the District pursuant to the EIR. Per the Oil and Gas ERA, the applicant shall fully mitigate project emissions that are not required to be offset by District permit rules and regulations. Such mitigation can be achieved through any of the three options: (1) the applicants pay an air quality mitigation fee with each Oil and Gas Conformity Review permit issued by the Kern County, (2) the applicants may develop and propose to implement their own emission reduction projects instead of paying all or part of the mitigation fee, or (3) the applicants will be allowed to enter into an agreement directly with the District (if approved by Kern County) to develop an alternative fee schedule.

Kern County, as the lead agency, is the agency that will enforce the mitigation measures identified in the EIR, including the mitigation requirements of the Oil and Gas ERA. As a responsible agency the District complies with CEQA by considering the EIR prepared by the Lead Agency, and by reaching its own conclusion on whether and how to approve the project involved (CCR §15096). The District has reviewed the EIR prepared by Kern County, the Lead Agency for the project, and finds it to be adequate. To reduce project related impacts on air quality, the District evaluates emission controls for the project such as Best Available Control Technology (BACT) under District Rule 2201 (New and Modified Stationary Source Review). In addition, the District is requiring the applicant to surrender emission reduction credits (ERC) for stationary source emissions above the offset threshold.

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

Indemnification Agreement/Letter of Credit Determination

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

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

IX. Recommendations

Issue Authorities to Construct (ATCs) S-1547-359-32, '-1348-0, '-1349-0, and '-1350-0 subject to the permit conditions on the attached draft ATCs (**Attachment VIII**).

X. Billing Information

Permit Number	Fee Schedule	Fee Description	Annual Fee
S-1547-359	3020-09A	1,657 wells	\$16,222
S-1547-1348	3020-02-H	36 MMBtu/hr	\$1080
S-1547-1349	3020-02-H	36 MMBtu/hr	\$1080
S-1547-1350	3020-02-H	36 MMBtu/hr	\$1080

- ATTACHMENT I: Existing PTO S-1547-359-30
- ATTACHMENT II: Manufacturer's Details
- ATTACHMENT III: Emissions Profiles
- ATTACHMENT IV: BACT Guideline 1.4.1
- ATTACHMENT V: Top-Down BACT Analysis
- ATTACHMENT VI: Health Risk Assessment, AAQA Model
- ATTACHMENT VII: Statewide and Title V Compliance Certification
- ATTACHMENT VIII: Draft ATCs

ATTACHMENT I
Existing PTO S-1547-359-30

San Joaquin Valley Air Pollution Control District

PERMIT UNIT: S-1547-359-30

EXPIRATION DATE: 05/31/2016

SECTION: 33 TOWNSHIP: 28S RANGE: 21E

EQUIPMENT DESCRIPTION:

VAPOR COLLECTION AND CONTROL SYSTEM SERVING 1657 THERMALLY ENHANCED WELLS IN SECTIONS 1, 2, 3, 4, 10, 11, 12 OF T29S, R21E, SECTIONS 33, 34, 35 OF T28S, R21E

PERMIT UNIT REQUIREMENTS

1. Vapor collection and control system can receive vapors from tank vapor control system S-1547-888, TEOR system S-1547-1079, free water knockout vessel S-1547-1104, and degassing operation S-1547-1141. [District Rule 2201] Federally Enforceable Through Title V Permit
2. Vapor collection system shall include 2 sulfur scrubbing systems using District approved scrubbing agents. Scrubber(s) may be by-passed only when incinerating vapors in scrubbed steam generator S-1547-47 or when routing gas directly to Sec. 32 Belridge gas plant (S-1543-4). [District Rule 2201] Federally Enforceable Through Title V Permit
3. Scrubbed gases shall be incinerated in steam generators S-1547-726, '-733, '-735 through '-738, '-742 through '-749, '-760, '-761, '-762, '-803, '-834, '-835, and '-837 or shall be routed to the Sec. 32 Belridge gas plant (S-1543-4). Alternatively, the wells can be operated with the casing vents closed. [District Rule 2201] Federally Enforceable Through Title V Permit
4. Scrubbed or unscrubbed vapor may be routed to the Sec. 32 Belridge gas plant (S-1543-4) via the Del Sur gas gathering system (compressors S-1578-433, '-434, '-435 and emergency flare S-1548-134). [District Rule 2201] Federally Enforceable Through Title V Permit
5. Vapor collection system shall be equipped with heat exchangers, gas/liquid separators with vane-type mist eliminators, gas compressors, compressor discharge knock-outs, and liquid pumps. [District Rule 2201] Federally Enforceable Through Title V Permit
6. All produced fluids from any well served by vapor collection system which has had the casing vent closed shall be handled only in closed production equipment served by a 99% effective vapor control system. [District Rule 2201] Federally Enforceable Through Title V Permit
7. Water/VOCs condensate from all liquid knockout drums shall be pumped to production manifold, recycled to production wells for disposal, or pumped to vapor controlled storage tanks. [District Rule 2201] Federally Enforceable Through Title V Permit
8. The regeneration vessel air vent at each sulfur scrubbing system may be vented to atmosphere provided daily emissions from each vent shall not exceed 2.0 lbs VOC/day. [District Rule 2201] Federally Enforceable Through Title V Permit
9. Permittee shall determine VOC content of the exhaust at each regeneration vessel air vent semi-annually. If a semi-annual VOC content analysis fails to show compliance, the regeneration vessel air vents shall be tested once per week. If compliance with the VOC content limit has been demonstrated for eight consecutive weeks, then the VOC content testing frequency shall revert to semi-annually. Gas analysis shall be performed using ASTM D-3588. [District Rule 2201] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE
These terms and conditions are part of the Facility-wide Permit to Operate.

10. Total mass flowrate of sulfur compounds in gas leaving sulfur removal systems shall not exceed 336.92 lb/day as sulfur. [District Rule 2201] Federally Enforceable Through Title V Permit
11. Emissions of Volatile Organic Compounds (VOC) shall not exceed 1,888.1 lb/day (including regeneration vessel air vents). [District Rule 2201] Federally Enforceable Through Title V Permit
12. Permittee shall maintain accurate records of sulfur content and daily vapor flow rate of all uncondensed vapors sent to approved incineration devices(S-1547-726, '-733, '-735 through '-738, '-742 through '-749, '-760, '-761, '-762, '-803, '-834, '-835, and '-837) for disposal. Such records shall be maintained readily available for District inspection upon request for a period of five years. [District Rule 2201] Federally Enforceable Through Title V Permit
13. Permittee shall maintain with the permit a listing (updated each calendar year) of all steam-enhanced wells connected to the casing vent control system and such listing shall be made available for District inspection upon request. [District Rule 2201] Federally Enforceable Through Title V Permit
14. The requirements of SJVUAPCD Rule 4407 (Adopted May 19, 1994) do not apply to this permit unit. A permit shield is granted from this requirement. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
15. During the time any steam-enhanced crude oil production well is undergoing service or repair while the well is not producing, it shall be exempt from the emission control requirements of District Rule 4401. [District Rule 4401, 4.1] Federally Enforceable Through Title V Permit
16. The inspection requirements of Section 5.4.1 through Section 5.4.7 of Rule 4401 shall not apply to components exclusively handling gas/vapor or liquid with a VOC content of ten percent by weight (10%) or less, as determined by the test methods in Section 6.3.4 of Rule 4401. [District Rule 4401, 4.7] Federally Enforceable Through Title V Permit
17. 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
18. An operator shall be in violation of this rule if any District inspection demonstrates or if any operator inspection conducted pursuant to Section 5.4 of Rule 4401 demonstrates the existence of any combination of components with minor liquid leaks, minor gas leaks, or a gas leaks greater than 10,000 ppmv up to 50,000 ppmv that totals more than number of leaks allowed by Table 2 of Rule 4401. [District Rule 4401, 5.2.2] Federally Enforceable Through Title V Permit
19. An operator shall not use any component with a leak as defined in Section 3.0 of Rule 4401, or that is found to be in violation of the provisions of Section 5.2.2 of Rule 4401. However, components that were found leaking may be used provided such leaking components have been identified with a tag for repair, are repaired, or awaiting re-inspection after being repaired within the applicable time frame specified in Section 5.5 of Rule 4401. [District Rule 4401, 5.3.1] Federally Enforceable Through Title V Permit
20. 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, 5.3.2] Federally Enforceable Through Title V Permit
21. 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, 5.3.3] Federally Enforceable Through Title V Permit
22. 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, 5.4.1] Federally Enforceable Through Title V Permit
23. An operator shall visually inspect all pipes at least once every year. Any visual inspection of pipes that indicates a leak that cannot be immediately repaired to meet the leak standards of this rule shall be inspected within 24 hours after detecting the leak. If a leak is found, the leak shall be repaired as soon as practicable but not later than the time frame specified in Table 3 of Rule 4401. [District Rule 4401, 5.4.2] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE
These terms and conditions are part of the Facility-wide Permit to Operate.

24. In addition to the inspections required by Section 5.4.1 of Rule 4401, an operator shall inspect for leaks all accessible operating pumps, compressors, and PRDs in service as follows: An operator shall audio-visually (by hearing and by sight) inspect for leaks all accessible operating pumps, compressors, and PRDs in service at least once each calendar week. Any audio-visual inspection of an accessible operating pump, compressor, and PRD performed by an operator that indicates a leak that cannot be immediately repaired to meet the leak standards of this rule shall be inspected not later than 24 hours after conducting the audio-visual inspection. If a leak is found, the leak shall be repaired as soon as practicable but not later than the time frame specified in Table 3 of Rule 4401. [District Rule 4401, 5.4.3] Federally Enforceable Through Title V Permit
25. In addition to the inspections required by Sections 5.4.1, 5.4.2 and 5.4.3 of Rule 4401, operator shall perform the following: initially inspect a PRD that releases to the atmosphere as soon as practicable but not later than 24 hours after the discovery of the release, re-inspect the PRD not earlier than 24 hours after the initial inspection but not later than 15 calendar days after the initial inspection, inspect all new, replaced, or repaired fittings, flanges, and threaded connections within 72 hours of placing the component in service. Except for PRDs subject to the requirements of Section 5.4.4.1 of Rule 4401, an operator shall inspect a component that has been repaired or replaced not later than 15 calendar days after the component was repaired or replaced. [District Rule 4401, 5.4.4] Federally Enforceable Through Title V Permit
26. An operator shall inspect all unsafe-to-monitor components during each turnaround. [District Rule 4401, 5.4.7] Federally Enforceable Through Title V Permit
27. 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, 5.4.8] Federally Enforceable Through Title V Permit
28. 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, 5.5.1] Federally Enforceable Through Title V Permit
29. An operator shall keep the tag affixed to the component until an operator has met all of the following conditions: repaired or replaced the leaking component, re-inspected the component using the test method in Section 6.3.3, and the component is found to be in compliance with the requirements of this rule. [District Rule 4401 5.5.2] Federally Enforceable Through Title V Permit
30. 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, 5.5.3] Federally Enforceable Through Title V Permit
31. Except for leaking critical components or leaking essential components subject to the requirements of Section 5.5.7 of Rule 4401, if an operator has minimized a leak but the leak still exceeds the applicable leak limits as defined in Section 3.0 of Rule 4401, an operator shall comply with at least one of the following requirements as soon as practicable but not later than the time period specified in Table 3 of Rule 4401: Repair or replace the leaking component; or vent the leaking component to a VOC collection and control system as defined in Section 3.0 of Rule 4401, or remove the leaking component from operation. [District Rule 4401, 5.5.4] Federally Enforceable Through Title V Permit
32. 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, 5.5.4] Federally Enforceable Through Title V Permit
33. The leak rate measured after leak minimization has been performed shall be the leak rate used to determine the applicable repair period specified in Table 3 of Rule 4401. [District Rule 4401, 5.5.5] Federally Enforceable Through Title V Permit
34. The time of the initial leak detection shall be the start of the repair period specified in Table 3 of Rule 4401. [District Rule 4401, 5.5.6] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE
These terms and conditions are part of the Facility-wide Permit to Operate.

35. 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, 5.5.7] Federally Enforceable Through Title V Permit
36. 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
37. 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
38. 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, 6.1.4] Federally Enforceable Through Title V Permit
39. 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, 6.1.5] Federally Enforceable Through Title V Permit
40. 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, 6.1.6] Federally Enforceable Through Title V Permit
41. Operator shall keep a copy of the APCO-approved Operator Management Plan at the facility. [District Rule 4401, 6.1.7] Federally Enforceable Through Title V Permit
42. Operator shall keep a list of all gauge tanks, as defined in Section 3.0 of Rule 4401. The list shall contain the size, identification number, the location of each gauge tank and specify whether the gauge tank is upstream of all front line production equipment. [District Rule 4401, 6.1.8] Federally Enforceable Through Title V Permit
43. The results of gauge tank TVP testing conducted pursuant to Section 6.2.3 shall be submitted to the APCO within 60 days after the completion of the testing. [District Rule 4401, 6.1.9] Federally Enforceable Through Title V Permit
44. 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, 6.1.10] Federally Enforceable Through Title V Permit
45. An operator shall source test annually all vapor collection and control systems used to control emissions from steam-enhanced crude oil production well vents to determine the control efficiency of the device(s) used for destruction or removal of VOC. Compliance testing shall be performed annually by source testers certified by ARB. Testing shall be performed during June, July, August, or September of each year if the system's control efficiency is dependent upon ambient air temperature. A process system as defined in Section 3.30 of Rule 4401 is not subject to compliance source testing requirements. [District Rule 4401, 6.2.1] Federally Enforceable Through Title V Permit
46. If approved by EPA, ARB, and the APCO, an operator need not comply with the annual testing requirement of Section 6.2.1 if all uncondensed VOC emissions collected by a vapor collection are controlled by an internal combustion engine subject to Rule 4702, a combustion device subject to Rule 4320, 4307 or 4308, a flare subject to Rule 4311. [District Rule 4401, 6.2.2] Federally Enforceable Through Title V Permit
47. An operator shall comply with the following requirements for each gauge tank, as defined in Section 3.0 of Rule 4401: Conduct periodic TVP testing of each gauge tank at least once every 24 months during summer (July - September), and whenever there is a change in the source or type of produced fluid in the gauge tank. The TVP testing shall be conducted at the actual storage temperature of the produced fluid in the gauge tank using the applicable TVP test method specified in Section 6.4 of Rule 4623 (Storage of Organic Liquids). The operator shall submit the TVP testing results to the APCO as specified in Section 6.1.9 of Rule 4401. [District Rule 4401, 6.2.3] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

48. 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
49. 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
50. 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
51. 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, 6.3.4] Federally Enforceable Through Title V Permit
52. 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
53. All records shall be maintained and made readily available for District inspection upon request for a period of five years. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

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

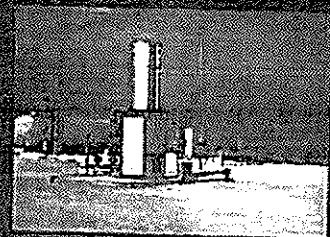
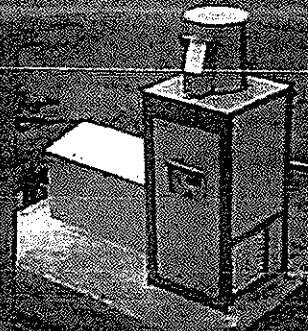
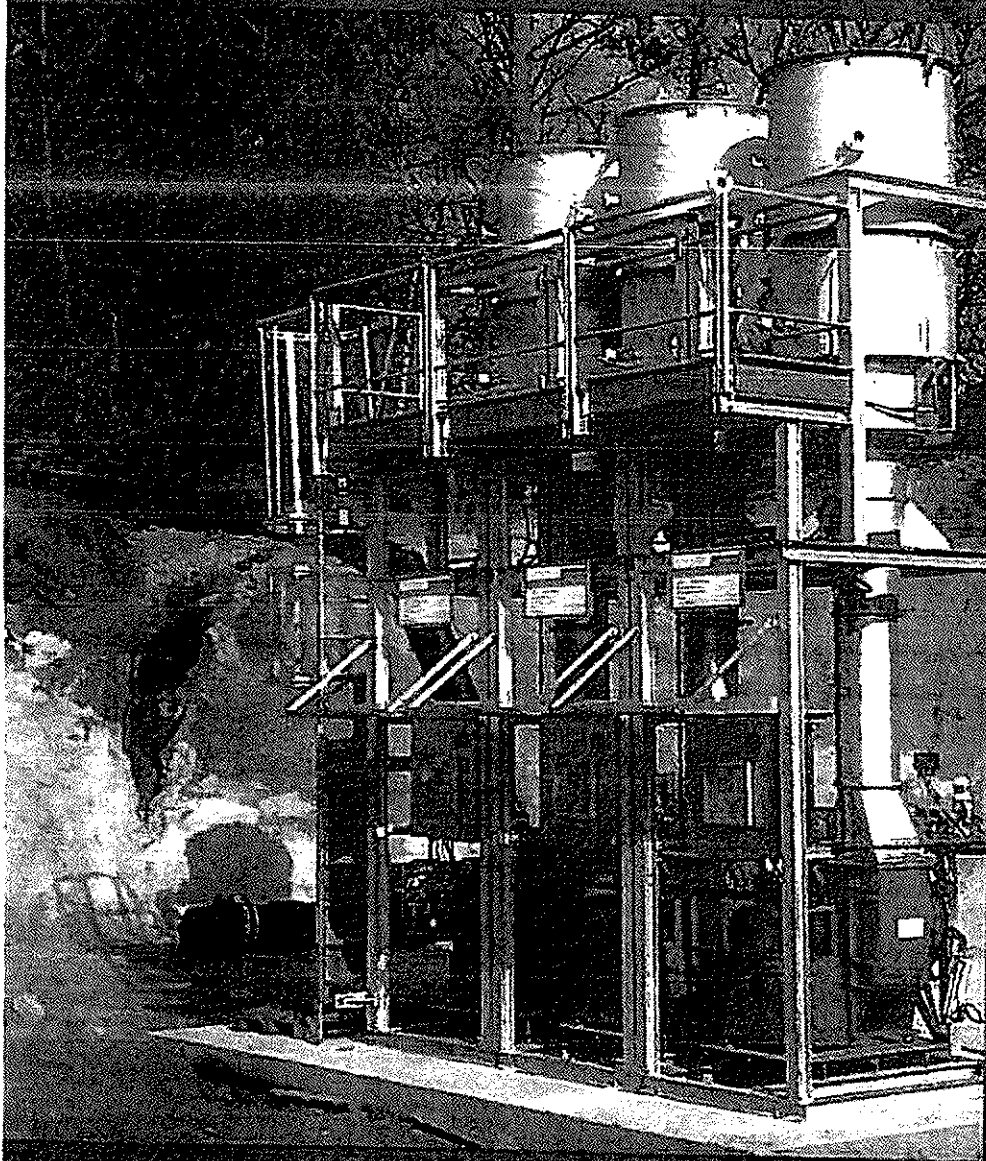
ATTACHMENT II
Manufacturer's Details



FLARE

INDUSTRIES
INNOVATIVE COMBUSTION SOLUTIONS

CEB® - Vapor Treatment Systems



smart technology

clean air

Appendix B

Manufacturer's Information

Introduction to Flare Industries

Flare Industries, headquartered in Austin, Texas, USA, is one of the industry leaders in combustion and pollution control technology, providing quality flare systems, thermal oxidizers, incinerators, burners, and ignition systems since 1984. Flare Industries' world-class air quality and pollution control equipment is designed by some of the most experienced engineers in the industry.

The focus of our team is to provide cutting edge combustion and environmental technology, experience, innovation, and superior service; all of which give our growing client base successful solutions and the highest level of quality and satisfaction.

With offices located all around the world and a sales and marketing network spanning the globe, our company is totally dedicated to the global marketplace and rapidly changing business environment of the 21st century. Our staff of engineers is well-versed in multiple languages, cultures, and business environments, providing our clients with superior service. Flare Industries has thousands of installed combustion systems currently eliminating industrial waste around the world.

Introduction to Clean Enclosed Burner (CEB®) Technology

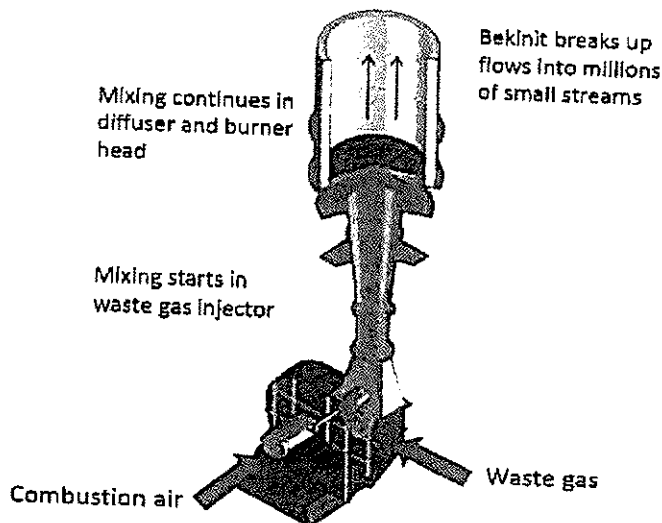
In July 2012, Flare Industries acquired the Clean Enclosed Burner (CEB®) product line from N.V. Bekaert S.A. The CEB uses Bekaert's proprietary Bekinit® metal fiber for premix surface combustion. Premix surface combustion has been developed and successfully implemented by Bekaert since the mid 1980s in millions of OEM burners for domestic hot water heaters and high efficiency boilers.

The primary advantages of the CEB® products versus conventional enclosed flares or open flares are the ultra-low emissions and very high VOC destruction efficiencies (99.99%). This coupled with the compact footprint and no smoke, soot, or visible flame, make it a very attractive solution for vapor combustion requirements.

The CEB® product line ranges from units with a nominal thermal capacities of 0.34 MMBTU/hr (1 kw) to 40 MMBTU/hr (12 MW). The CEB® systems are modular and can easily be combined to cover the most demanding flow and thermal capacity requirements, ensuring cost effective operation under all process conditions. Future expansion or reduction of the installed thermal capacity is easy to realize, making sure that the CEB® installation is always configured to the actual requirements.

Pre-mixed surface combustion is a combustion process in which the fuel (waste gas and/or support gas) and combustion air streams are thoroughly mixed into a homogeneous mixture before passing through the Bekinit® permeable medium which breaks up the flow into millions of small flow streams just before combustion takes place. The combustion process actually takes place above the permeable medium.

The CEB® utilizes a variable speed fan to provide the correct air flow to pre-mix with the waste gas prior to combustion. The system is automatically controlled to ensure ultra-low emissions even if the waste gas flow or composition changes. The CEB® can also be fitted with an assist or support gas line for lean gas applications $< 160 \text{ Btu/scf}$ ($< 6 \text{ MJ/Nm}^3$) or when the waste gas is too low in volume.



Flare Industries' CEB® offers several advantages...

All CEB® systems are capable of achieving VOC destruction efficiencies of up to 99.99 %, while generating less than 15 ppmv (0.023 Lbs/MMBTU) of NO_x and less than 10 ppm CO (0.015 Lbs/MMBTU) at 3% oxygen.

The CEB® operates without a visible flame, smoke/soot or any odors. Because of the non-luminous flame, it does not generate heat from radiation (only convection). The compact footprint, simple installation, easy maintenance and very low life cycle/operational costs make the CEB® suitable for every type of application, from continuous and discontinuous operation to emergency backup of other equipment.

CEB® systems can easily be combined to cover a wide range of flows and operating conditions. By operating the CEB® units in a modular way, you can tailor the capacity of the total system to your current needs, which reduces your operating costs while minimizing your emissions. Heat recovery modules are available for all models and can be installed afterwards.

Where you can find CEB® systems...

CEB® systems have been installed in over 75 applications around the world to date. They are found in on-shore upstream oil and gas (drilling/exploration/well testing/associated gas), midstream oil and gas (treatment/separation systems and compressor stations), gas transport pipe line operations (pressure relief/degassing), tank park load/unload applications (tank-ship-train-truck), tank venting, tank cleaning, pipe line cleaning, (petro)chemical industry (reactor venting, reactor and pipe line cleaning, treatment of residue gases/vapors), synthetic gas production, biogas and biofuel production, wastewater treatment, landfill, mine-gas etc.

Based on our in-depth knowledge and practical experience in many applications, the CEB® systems are offered in tailored solutions to meet your vapor/waste gas treatment needs, from vapor/waste gas flow control trains (for general or zoned/classified areas) to vapor/waste gas treatment.

CEB® systems are often a sound alternative to (Regenerative) Thermal Oxidizers, Vapor Recovery Units, incinerators and traditional flares, especially when emissions (VOC, NO_x or CO) are a restriction, when the waste gas/vapor contains very low energy (6 MJ/Nm³ or 160 BTU/scf) or when the flow rates or waste gas/vapor composition changes often.

Main advantages of the CEB® systems

Very low emissions (at 3% oxygen level in the flue gas and with Methane as reference gas)*:

- NO_x < 15 ppm or < 31.7 mg/Nm³
- CO < 10 ppm or < 12.5 mg/Nm³
- C₂H₄ < 10 ppm or < 7.2 mg/Nm³

- Combustion efficiency (DRE) ≥ 99.99% within the full operating range
- Standard operational temperature 2192-2282°F (1200-1250°C)
- Best acceptance of (fast) changes in vapor/gas compositions
- Best acceptance of mixed vapors/gasses, of (fast) flow volume and simultaneous flow volume and gas composition changes
- Very good lean gas processing capabilities, combustion down to 10 - 15 % methane equivalent (4 - 6 MJ/Nm³)
- Very low support (fuel) gas consumption in case of i.e. inert gas flows (such as Nitrogen or Air)
- Very compact (footprint and height)
- High turn down ratio (> 1:10)
- Full PLC controlled and monitored stand-alone operation with remote control/monitor options
- No residence time required (short chimney/stack)
- No luminous flame, smell/odor emission and infra-red/heat radiation
- Smokeless combustion, no soot
- Low Noise Level
- Fast start-up (from cold stand-by to full operation at 1200 degree Centigrade in < 1 minute)
- Full flexibility within the thermal operational range regarding changes in flow volume and/or gas composition
- Easy and fast installation (fully assembled and tested in the factory, plug & play on site)

Achieve ultra-low emissions with our pre-mix surface technology

Characteristics of the CEB Product Portfolio

	Nominal Thermal Capacity (MMBtu/hr)	Nominal waste gas flow** per hour (Nm ³ /h-scfm)	Number of burner units	Standard waste gas connection (ANSI-150 lbs RF)	Footprint and Height (mm)	Weight (kg / Lbs)	Electrical power consumption max (kWatt-HP)
CEB 10	0.1 / 0.34	9 - 5.7	1	1"	900 x 900 x 1500	350 - 768	2.0 - 2.68
CEB 50	0.5 / 1.7	45 - 27	1	2"	1100 x 1100 x 3300	820 - 1800	2.0 - 2.68
CEB 100	1.0 / 3.4	90 - 53	1	2"	1100 x 1100 x 3300	850 - 1870	2.0 - 2.68
CEB 350	3.5 / 12	316 - 186	1	3"	1100 x 1100 x 4024	1050 - 2310	3.5 - 4.7
CEB 500	5.0 / 17	452 - 266	1	4"	1100 x 1100 x 4024	1130 - 2490	6.0 - 8.0
CEB 800	8.0 / 27	723 - 426	1	4"	1430 x 1953 x 5859	2750 - 6060	16.0 - 21.4
CEB 1200	12.0 / 41	1085 - 639	1	4"	1430 x 1953 x 5859	2850 - 6280	31.0 - 41.6

Inlet Waste Gas Pressure (min/max): 25-200 mbar(g) or 10-80" W.C.

*Emissions results are based on natural gas combustion with gross heating value of 1,069 Btu/scf (39.82 MJ/Nm³)

**Waste gas flow based on natural gas combustion with gross heating value of 1,069 Btu/scf (39.82 MJ/Nm³)

CEB® systems for loading / unloading and tank park applications

The CEB® vapor combustor is an ultra-low emission system that can achieve VOC destruction efficiencies up to 99.99%, while generating less than 15 ppmv of NO_x at 3% oxygen (<0.023 Lbs./MMBTU) and less than 10 ppmv CO (<0.015 Lbs./MMBTU)*. This makes the CEB® the ideal choice for your terminals, which are in environmentally sensitive areas where VOC or NO_x emissions are critical.

In addition, the CEB® is capable of handling a wide range of waste gases/vapors without modification, giving you a very flexible solution for your complex operation. All your waste gas/vapor streams from your tanks, trucks, railcars or vessels can be handled by the same unit.

The incredibly stable premixed, surface combustion technology allows the CEB® to operate on as little as 6MJ/Nm³ or 160 BTU/scf without the need for support gas. If you are dealing with tanks that are blanketed with nitrogen or are handling a very lean waste gas, the CEB® technology will significantly reduce your support gas requirements and your operating costs.

The efficiency of the premix surface combustion technology allows the CEB® to be built in a very compact footprint with a short exhaust stack. Thus the CEB® is ideal for installations where space is limited. Furthermore, the low radiant footprint that is generated by the non-luminous flame generates very little radiant heat (convective heat only), which allows you to site the CEB® closer to other equipment and structures than traditional flares.

Typical Applications

- Truck and rail car loading/unloading
- Barge and ship loading/unloading
- Storage tank transfer and breathing
- Barge and tank degassing
- Pipeline stations and maintenance

*Emissions results are based on natural gas combustion with gross heating value of 39.82 MJ/Nm³



CEB 800® at tank park



3 x CEB 800®

Solve your hydrocarbons emissions at the lowest costs

CEB® systems for petrochemical and chemical industries

Flare Industries' CEB® Technology is the perfect solution for the wide range of applications and requirements that are present in today's petrochemical facilities. With an ever increasing focus on the environment and pollution (VOCs, NO_x and CO), more and more pressure is placed on petrochemical facilities to reduce their site emission levels.

One way to achieve this, without impacting productivity, is to replace conventional candlestick and enclosed flares with the ultra low emission CEB® technology. The proprietary pre-mix, surface combustion technology employed by the CEB® enables it to achieve VOC destruction efficiencies of up to 99.99%, while generating the lowest emission levels available in the market and can significantly reduce your sites overall emissions.

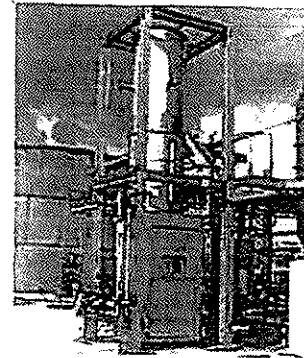
In some regions of the world, environmental agencies are monitoring the misuse of plant emergency flares. In Texas (US), the Texas commission on Environmental Quality (TCEQ) is using infrared camera systems to detect VOC emissions from petrochemical plants. In doing this, they have discovered that many facilities are sending small amounts of process waste gas to their large, plant-wide emergency flares, which are sized for much larger volumes. The result is a staggering reduction in the flares destruction efficiency, sometimes as low as 50%. The TCEQ is now promoting the concept of using small, ultra low emission control devices for process waste gases and leaving the plant-wide emergency flare for just that, emergencies.

In addition, for storage tanks that are blanketed with nitrogen, the CEB® is the most economical choice for a control device for your tank breathing applications. This is due to the very stable combustion reaction thanks which enables the CEB to operate on very lean waste gases, and still meet its emission guarantees without the need for support gas.

The CEB® is ideal for

- Vent gas flare
- Reactor, dryers and other process vents
- Tank loading
- Tank or pipeline degassing
- In conjunction with emergency flare to handle small volume releases

*Emissions results are based on natural gas combustion with gross heating value of 39.82 MJ/Nm³



CEB 350* at petrochemical plant



Two CEB 4800* at chemical plant

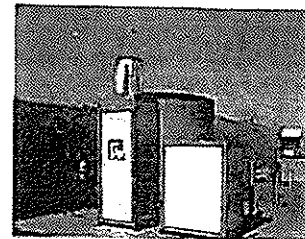
CEB® systems for biogas and synthetic gas applications

CEB Systems have been utilized for a variety of biogas applications with great success. The benefits of the CEB systems are recognized and appreciated in the following applications.

Pipeline Purification - The CEB is ideally suited to handle the lean tail gas streams produced by the pressure-swing adsorption or membrane systems with little to no assist or support gas.

Siloxane removal systems - The ultra-low emission CEB is ideally suited for the continuously produced lean tail-gas from the siloxane removal systems.

Low caloric value biogas streams - Closed landfills generating methane gas less than 30% are able to use the CEB systems which can operate without support gas down to 15% methane equivalent, thereby saving in operational costs.



CEB 100* with waste gas compressor enclosed in weather proof box

Reduce your plant emissions and save in operating costs

Traditional biogas applications - The CEB is a great choice for traditional wastewater or landfill biogas applications due to the ultra-low emissions, fast start & stop, and unobtrusive presence.

Synthetic gas - The changing flows, compositions, and operational cycles of synthetic gas production plants are well served by a CEB system which can readily handle the variety of waste gas streams without missing a beat.

Onshore upstream and midstream oil and gas

Upstream

During well exploration and testing activities, substantial flows of (associated) gas can be liberated from the well and must be effectively controlled in order to avoid safety and environmental issues. The CEB's* ability to process fast fluctuations in flow rate and composition of the associated gas while maintaining very high destruction efficiencies up to 99.99% makes the CEB* the ideal choice for exploration and well testing applications.

In addition, the compact footprint, low profile stack, non visible flame and soot less operation can be key benefits when drilling in or near residential areas.

Midstream

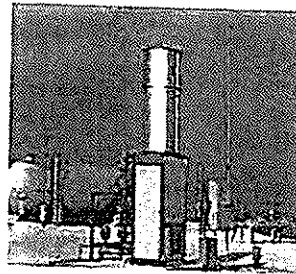
With an ever increasing global demand for oil, more and more companies are expanding their exploration efforts. In many fields, the oil in the ground is mixed with water and gases, such as methane, ethane, propane and other hydrocarbons, and must be separated from these contaminants before it can be sent to refineries. The gas that is separated during this process can be used to heat the three-phase separator, to generate power in micro-turbines, or be purified to pipeline quality to be sold as natural gas.

In many cases, there is not enough gas generated by the process to justify the significant investment in micro-turbines or a purification plant. In these situations, the oil exploration company must find an economical and environmentally acceptable way of controlling these gases or risk having limitations on how much oil they can pump in a day. Currently there are seven units operating in this application in Southern California, five of which are within South Coast Air Quality Management District, the most environmentally strict location in North America.

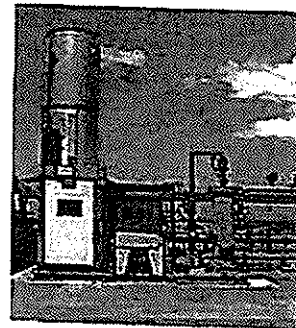
For applications where the process gas is utilized, there may still be a requirement for a low-emission back-up system. The CEB* is an economical and environmentally acceptable technology for this application, that will provide worry-free service, allowing you to focus on your oil production.



CEB 4500HP* at upstream well site



CEB 350* at midstream location



CEB 500* at midstream location

Get the best solution for exploration and well testing operations

Heat recovery system

The heat recovery system is based on the plate heat exchanger technology, with special features to handle the very high temperature flue gases (up to 1300°C/2372°F). The overall thermal efficiency of the heat exchanger is up to 70% considering an inlet thermal fluid temperature as ambient.

Conception :

The high reliability of the heat exchanger is based on a concept that gathers the efficiency of the plates heat exchangers standard systems together with robustness of the U-tube profile.

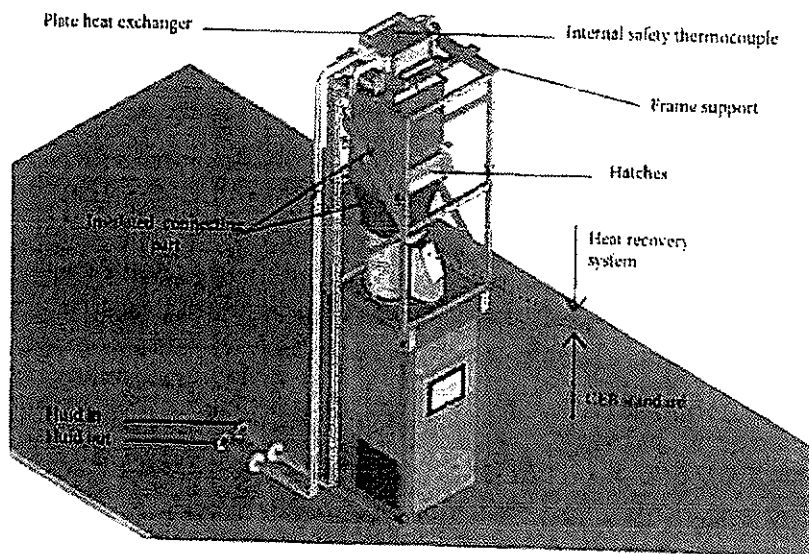
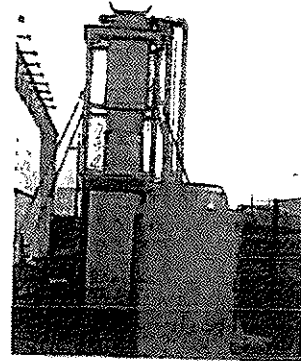
Indeed, the plates are welded only at one extremity so it can expand without any constraint when exposed to thermal cycles and especially thermal shocks. The plate design has been made to avoid "dead zone" circulation, thus preventing the thermal fluid from boiling up

Advantages :

- Compactness of plates configuration resulting in high exchange coefficient for reduced exchange surfaces
- Reliability
- U-plate reliability versus thermal constraints : mechanical constraints on the welding reduced during thermal shocks

The CEB* Heat recovery module converts the combustion heat of the CEB* system into:

- Hot air
- Thermal oil
- Hot water
- Steam



Don't waste the energy of your waste gas/vapor



FLARE

I N D U S T R I E S
INNOVATIVE COMBUSTION SOLUTIONS

Flare Industries LLC
16310 Bratton Lane,
Building 3, Suite 350
Austin, TX 78728
USA
T + 1 512 836 9473
F + 1 512 836 3025
www.flareindustries.com

The focus of our team is to provide cutting edge combustion and environmental technology, experience, innovation, and superior service; all of which give our growing client base successful solutions and the highest level of quality and satisfaction.



FLARE INDUSTRIES CEB® 800 - CA

The cleanest solution to your waste gas combustion needs



Photos of CEB® 800-CA

Capacity*	875,000 SCFD or 875 MSCFD
Maximum thermal capacity*	39 MMBTU/hr.
Turndown ratio**	10:1
Footprint and height***	5' 10" x 6' 3" x 22' 10"
Approximate weight	5,511 lbs.
Waste gas supply pressure	10 - 80" WC
Fan motor size	40 hp
Waste gas connection	4" ANSI 150 lbs. RF
Support gas connection	2" ANSI 150 lbs. RF
Ignition System	Spark or pilot ignition
Operating temperature	1,800 to 2,200°F
Ground temperature	Ambient during operation

- * Capacity is based on natural gas with gross heating value of 1,069 BTU/scf
- ** Turndown ratio can be increased for specific projects with customized units
- *** Stack height is based on minimum height that meets EPA's protocol for position of the testing ports

All mentioned trademarks are registered trademarks of Flare Industries, LLC.

CEB® 800 - CA

Keep the environment clean when combusting your waste gases

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

Achievable emissions levels:

NOx ≤ 15 ppmv ≤ 0.023 lbs/MMBTU

CO ≤ 10 ppmv ≤ 0.01 lbs/MMBTU

CxHy ≤ 10 ppmv ≤ 0.005 lbs/MMBTU

Combustion efficiency:

Up to 99.99% DRE over full operating range

The CEB® 800-CA is a product of:

FLARE INDUSTRIES, LLC

16310 Bratton Lane

BLDG 3, Suite 350

Austin, Texas 78728

USA

T: +1 (512) 836-9473

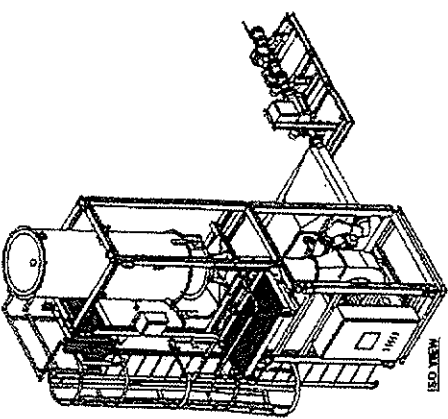
F: +1 (512) 836-3025

www.flareindustries.com

ITEM NO.	DESCRIPTION	QTY	UNIT	REMARKS
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50

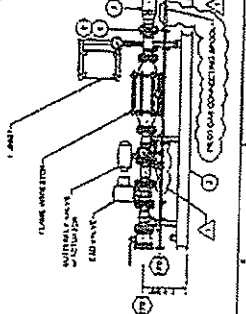
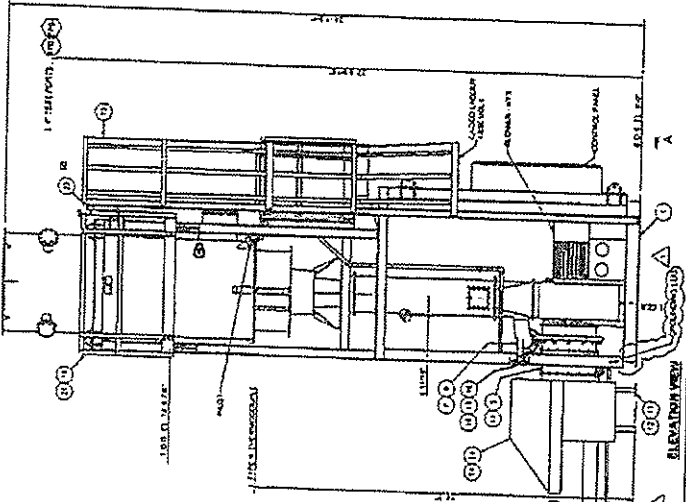
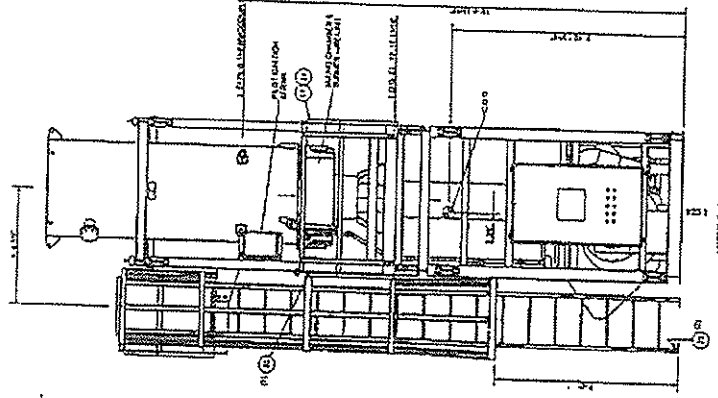
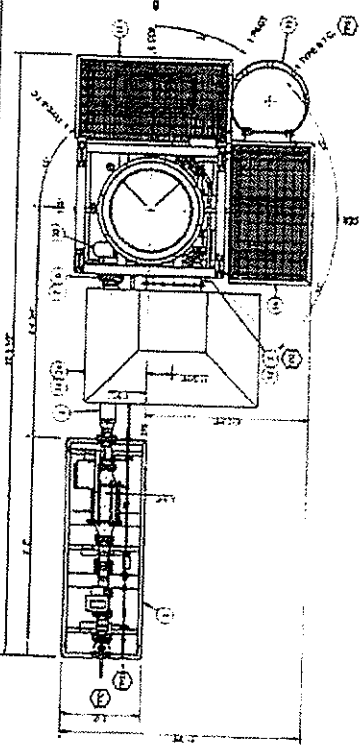
ITEM NO.	DESCRIPTION	QTY	UNIT	REMARKS
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50

NOTES: 1. ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED.
 2. ALL DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED.
 3. ALL DIMENSIONS ARE TO FACE UNLESS OTHERWISE SPECIFIED.
 4. ALL DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED.
 5. ALL DIMENSIONS ARE TO FACE UNLESS OTHERWISE SPECIFIED.
 6. ALL DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED.
 7. ALL DIMENSIONS ARE TO FACE UNLESS OTHERWISE SPECIFIED.
 8. ALL DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED.
 9. ALL DIMENSIONS ARE TO FACE UNLESS OTHERWISE SPECIFIED.
 10. ALL DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED.



ITEM NO.	DESCRIPTION	QTY	UNIT	REMARKS
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50

FLARE
 MODEL NO. 1000
 SERIAL NO. 1000
 DATE: 10/10/10
 BY: J. SMITH



ATTACHMENT III
Emissions Profiles

Permit #: S-1547-359-32 Last Updated
Facility: AERA ENERGY LLC 06/22/2016 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	245952.0	0.0	0.0	689157.0
Daily Emis. Limit (lb/Day)	0.0	673.8	0.0	0.0	1888.1
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	0.0	0.0	0.0	0.0	0.0
Q2:	0.0	0.0	0.0	0.0	0.0
Q3:	0.0	0.0	0.0	0.0	0.0
Q4:	0.0	0.0	0.0	0.0	0.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					
Quarterly Offset Amounts (lb/Qtr)					
Q1:					
Q2:					
Q3:					
Q4:					

Permit #: S-1547-1348-0 Last Updated
Facility: AERA ENERGY LLC 07/07/2016 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):	5676.0	0.0	2523.0	3469.0	1261.0
Daily Emis. Limit (lb/Day)	15.6	0.0	6.9	9.5	3.5
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	1419.0	0.0	630.0	867.0	315.0
Q2:	1419.0	0.0	631.0	867.0	315.0
Q3:	1419.0	0.0	631.0	867.0	315.0
Q4:	1419.0	0.0	631.0	868.0	316.0
Check if offsets are triggered but exemption applies	N	N	N	Y	N
Offset Ratio	1.5		1.5		1.5
Quarterly Offset Amounts (lb/Qtr)					
Q1:	1419.0		630.0		315.0
Q2:	1419.0		630.0		315.0
Q3:	1419.0		630.0		315.0
Q4:	1419.0		631.0		315.0

Permit #: S-1547-1349-0	Last Updated
Facility: AERA ENERGY LLC	06/19/2016 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):	5676.0	0.0	2523.0	3469.0	1261.0
Daily Emis. Limit (lb/Day)	15.6	0.0	6.9	9.5	3.5
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	1419.0	0.0	630.0	867.0	315.0
Q2:	1419.0	0.0	631.0	867.0	315.0
Q3:	1419.0	0.0	631.0	867.0	315.0
Q4:	1419.0	0.0	631.0	868.0	316.0
Check if offsets are triggered but exemption applies	N	N	N	Y	N
Offset Ratio	1.5		1.5		1.5
Quarterly Offset Amounts (lb/Qtr)					
Q1:	1419.0		631.0		315.0
Q2:	1419.0		631.0		315.0
Q3:	1419.0		631.0		315.0
Q4:	1419.0		631.0		316.0

Permit #: S-1547-1350-0	Last Updated
Facility: AERA ENERGY LLC	07/07/2016 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	0.0
Daily Emis. Limit (lb/Day)	1.6	0.0	6.9	9.5	3.5
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	1419.0	0.0	630.0	867.0	315.0
Q2:	1419.0	0.0	631.0	867.0	315.0
Q3:	1419.0	0.0	631.0	867.0	315.0
Q4:	1419.0	0.0	631.0	868.0	316.0
Check if offsets are triggered but exemption applies	N	N	N	Y	N
Offset Ratio	1.5		1.5		1.5
Quarterly Offset Amounts (lb/Qtr)					
Q1:	1419.0		631.0		316.0
Q2:	1419.0		631.0		316.0
Q3:	1420.0		631.0		316.0
Q4:	1420.0		631.0		316.0

ATTACHMENT IV
BACT Guideline 1.4.1

San Joaquin Valley
Unified Air Pollution Control District

Best Available Control Technology (BACT) Guideline 1.4.1*

Last Update: 11/9/1995

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

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

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

***This is a Summary Page for this Class of Source**

ATTACHMENT V
Top-Down BACT Analysis

Top Down BACT Analysis

1. BACT Analysis for NO_x Emissions:

a. Step 1 - Identify all control technologies

Steam-assisted
Air assisted when steam unavailable

b. Step 2 - Eliminate technologically infeasible options

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

c. Step 3 - Rank remaining options by control effectiveness

All of the control technologies have the same control effectiveness

d. Step 4 - Cost Effectiveness Analysis

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

e. Step 5 - Select BACT

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

3. BACT Analysis for PM₁₀ Emissions:

a. Step 1 - Identify all control technologies

Steam-assisted with smokeless combustion

Air-assisted with smokeless combustion when steam unavailable.

Pilot Light Fired Solely on LPG or Natural Gas

b. Step 2 - Eliminate technologically infeasible options

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

c. Step 3 - Rank remaining options by control effectiveness

All of the control technologies have the same control effectiveness

d. Step 4 - Cost Effectiveness Analysis

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

e. Step 5 - Select BACT

BACT for PM₁₀ emissions from operation is the VDD which has a pilot light. A 5% opacity limit is included on the ATCs to ensure smokeless combustion. Therefore, BACT for PM₁₀ emissions is satisfied.

4. BACT Analysis for CO Emissions:

a. Step 1 - Identify all control technologies

Steam-assisted with smokeless combustion

Air-assisted with smokeless combustion when steam unavailable.

b. Step 2 - Eliminate technologically infeasible options

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

c. Step 3 - Rank remaining options by control effectiveness

All of the control technologies have the same control effectiveness

d. Step 4 - Cost Effectiveness Analysis

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

e. Step 5 - Select BACT

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

3. BACT Analysis for VOC Emissions:

a. Step 1 - Identify all control technologies

Steam-assisted with smokeless combustion

Air-assisted with smokeless combustion when steam unavailable.

b. Step 2 - Eliminate technologically infeasible options

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

c. Step 3 - Rank remaining options by control effectiveness

All of the control technologies have the same control effectiveness

d. Step 4 - Cost Effectiveness Analysis

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

e. Step 5 - Select BACT

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

ATTACHMENT VI
Health Risk Assessment, AAQA Model

**San Joaquin Valley Air Pollution Control District
Risk Management Review
REVISED**

To: Richard Edgehill – Permit Services
 From: Cheryl Lawler – Technical Services
 Date: July 5, 2016
 Facility Name: Aera Energy LLC
 Location: Belridge Oil Field (35.43216, -119.68367 or 35.43504, -119.70472)
 (Sec. 2, T29S, R21E or Sec. 3, T29S, R21E)
 Application #(s): S-1547-359-32, 1348-0, 1349-0, 1350-0
 Project #: S-1162420

A. RMR SUMMARY

RMR Summary					
Categories	VOC Destruction Device (Unit 1348-0)	VOC Destruction Device (Unit 1349-0)	VOC Destruction Device (Unit 1350-0)	Project Totals	Facility Totals
Prioritization Score	88.0	88.0	88.0	>1.0	>1.0
Acute Hazard Index	0.00	0.00	0.00	0.00	0.37
Chronic Hazard Index	0.00	0.00	0.00	0.00	0.14
Maximum Individual Cancer Risk	1.05E-06	1.05E-06	1.05E-06	3.15E-06	13.38E-06
T-BACT Required?	Yes	Yes	Yes		
Special Permit Requirements?	Yes	Yes	Yes		

Proposed Permit Requirements

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

Units 1348-0, 1349-0, 1350-0

1. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction.
2. The unit is only allowed to operate at two locations (35.43216, -119.68367/Sec. 2, T29S, R21E; or 35.43504, -119.70472/Sec. 3, T29S, R21E).

T-BACT is required for these units because of emissions of PAHs which are VOCs.

B. RMR REPORT

I. Project Description

Technical Services received a request on June 19, 2016, to perform an Ambient Air Quality Analysis and a Risk Management Review for the installation of up to two low emissions VOC Destruction Devices (VDDs) to operate at two locations within the Belridge Oil Field. The units will be used to combust vapor from a Vapor Control System (VCS) (Unit 359-32) which serves a Thermally Enhanced Oil Recovery (TEOR) with 1757 wells.

The project was revised because one of the locations where the VOC Destruction Devices could operate was previously incorrectly reported.

II. Analysis

Toxic emissions for this project were calculated using emission factors derived from data in the 1992 Radian Corporation report to WSPA, and input into the San Joaquin Valley APCD's Hazard Assessment and Reporting Program (SHARP). In accordance with the District's Risk Management Policy for Permitting New and Modified Sources (APR 1905, May 28, 2015), risks from the project were prioritized using the procedures in the 1990 CAPCOA Facility Prioritization Guidelines. The prioritization score for the facility is greater than 1.0 (see RMR Summary Table). Therefore, a refined health risk assessment was required. The AERMOD model was used, with the parameters outlined below and meteorological data for 2004-2008 from Missouri Triangle to determine the dispersion factors (i.e., the predicted concentration or X divided by the normalized source strength or Q) for a receptor grid. These dispersion factors were input into the SHARP Program, which then used the Air Dispersion Modeling and Risk Tool (ADMRT) of the Hot Spots Analysis and Reporting Program Version 2 (HARP 2) to calculate the chronic and acute hazard indices and the carcinogenic risk for the project. The project risk scores reflect the worst case scores from Location 1 (Acute) and Location 2 (Cancer & Chronic).

The following parameters were used for the review:

Analysis Parameters			
Units 1348-0, 1349-0, & 1350-0			
Source Type	Point	Location Type	Rural
Stack Height (m)	7.92	Closest Receptor (m)	440
Stack Diameter (m)	1.13	Type of Receptor	Business
Stack Exit Velocity (m/s)	25.99	NG/Field Gas Process Rates (each unit)	0.036 mmscf/hr 315.4 mmscf/hr
Stack Exit Temp. (°K)	1366		

Technical Services performed modeling for criteria pollutants CO, NO_x, SO_x, and PM₁₀ with the emission rates below:

Units 1348-0 to 1350-0	NO _x (Lbs.)		SO _x (Lbs.)		CO (Lbs.)		PM ₁₀ (Lbs.)	
	Hr.	Yr.	Hr.	Yr.	Hr.	Yr.	Hr.	Yr.
VOC Destruction Devices	0.65	11,353	0	0	0.39	6,938	0.29	5,046

The results from the Criteria Pollutant Modeling are as follows:

Criteria Pollutant Modeling Results*

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

*Results were taken from the attached PSD spreadsheet.

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

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

III. Conclusion

Units 1348-0, 1349-0, & 1350-0

The Acute and Chronic Indices are below 1.0, and the Cancer Risk factor associated with the project is greater than 1.0 in a million. **In accordance with the District's Risk Management Policy, the project is approved with Toxic Best Available Control Technology (T-BACT).**

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

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

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

IV. Attachments

- A. RMR Request Form
- B. Emissions Speciation Worksheet
- C. Prioritization
- D. Convert
- E. Facility Summary
- F. AAQA Results
- G. AERMOD Non-Default Option Checklist

ATTACHMENT VII
Statewide and Title V Compliance Certification

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

TITLE V COMPLIANCE CERTIFICATION FORM

I. TYPE OF PERMIT ACTION (Check appropriate box)

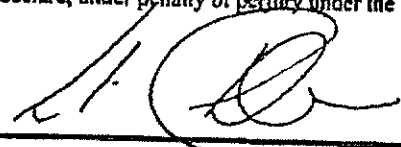
- SIGNIFICANT PERMIT MODIFICATION ADMINISTRATIVE AMENDMENT
 MINOR PERMIT MODIFICATION

COMPANY NAME: Aera Energy LLC	FACILITY ID: S-1547
1. Type of Organization: <input checked="" type="checkbox"/> Corporation <input type="checkbox"/> Sole Ownership <input type="checkbox"/> Government <input type="checkbox"/> Partnership <input type="checkbox"/> Utility	
2. Owner's Name: Aera Energy LLC	
3. Agent to the Owner: N/A	

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

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

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



Signature of Responsible Official

06/09/2016
Date

L.A. Chambers
Name of Responsible Official (please print)

Process Supervisor
Title of Responsible Official (please print)

Title I Compliance Certification - SJVUAPCD

CERTIFICATION

Aera Energy LLC hereby certifies as follows:

1. Aera Energy LLC owns or operates certain major stationary sources in the State of California. Such sources are comprised of a large number of emission points. As used in this certification, the term "major stationary source" shall, with respect to Aera Energy LLC stationary sources in the SJVUAPCD, have the meaning ascribed thereto in SJVUAPCD Rule 2201.3.15, and shall, with respect to all of Aera Energy LLC's other stationary sources in the State of California, have the meaning ascribed thereto in section 302(J) of the Clean Air Act (42 U.S.C. Section 7602 (J)).

2. Subject to paragraphs 3 and 4 below, all major stationary sources owned or operated by Aera Energy LLC in the State of California are either in compliance, or on a schedule of compliance, with all applicable emission limitations and standards under the Clean Air Act and all of the State Implementation Plan approved by the Environmental Protection Agency.

3. This certification is made on information and belief and is based upon a review of Aera Energy LLC's major stationary sources in the State of California by those employees of Aera Energy LLC who have operational responsibility for compliance. In conducting such reviews, Aera Energy LLC and its employees have acted in good faith and have exercised reasonable best efforts to identify any exceedances of the emission limitations and standards referred to in paragraph 2 thereof.

4. This certification shall speak as of the time and date of its execution.

CERTIFICATION

By: _____



Date: June 21, 2016

Title: Vice President

Time: 12:45 pm

ATTACHMENT VIII
Draft ATCs

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: S-1547-359-32

LEGAL OWNER OR OPERATOR: AERA ENERGY LLC
MAILING ADDRESS: PO BOX 11164
BAKERSFIELD, CA 93389-1164

LOCATION: HEAVY OIL WESTERN STATIONARY SOURCE
KERN COUNTY, CA

SECTION: 33 TOWNSHIP: 28S RANGE: 21E

EQUIPMENT DESCRIPTION:

MODIFICATION OF VAPOR COLLECTION AND CONTROL SYSTEM SERVING 1657 THERMALLY ENHANCED WELLS IN SECTIONS 1, 2, 3, 4, 10, 11, 12 OF T29S, R21E, SECTIONS 33, 34, 35 OF T28S, R21E: APPROVE 3 VOC DESTRUCTION DEVICES

ISSUANCE DATE: DRAFT

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. Vapor collection and control system can receive vapors from tank vapor control system S-1547-888, TEOR system S-1547-1079, free water knockout vessel S-1547-1104, and degassing operation S-1547-1141. [District Rule 2201] Federally Enforceable Through Title V Permit
4. Vapor collection system shall include 2 sulfur scrubbing systems using District approved scrubbing agents. Scrubber(s) may be by-passed only when incinerating vapors in scrubbed steam generator S-1547-47 or when routing gas directly to Sec. 32 Belridge gas plant (S-1543-4). [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director, APCO

Arnaud Marjolle, Director of Permit Services

S-1547-359-32 Jul 14 2016 10:39AM - EDGEHLR : Joint Inspection NOT Required

5. Scrubbed gases shall be incinerated in steam generators S-1547-726, '-733, '-735 through '-738, '-742 through '-749, '-760, '-761, '-762, '-803, '-834, '-835, and '-837 or VOC destruction devices S-1547-1048, '-1049, and '-1050, or shall be routed to the Sec. 32 Belridge gas plant (S-1543-4). Alternatively, the wells can be operated with the casing vents closed. [District Rule 2201] Federally Enforceable Through Title V Permit
6. Scrubbed or unscrubbed vapor may be routed to the Sec. 32 Belridge gas plant (S-1543-4) via the Del Sur gas gathering system (compressors S-1578-433, '-434, '-435 and emergency flare S-1548-134). [District Rule 2201] Federally Enforceable Through Title V Permit
7. Vapor collection system shall be equipped with heat exchangers, gas/liquid separators with vane-type mist eliminators, gas compressors, compressor discharge knock-outs, and liquid pumps. [District Rule 2201] Federally Enforceable Through Title V Permit
8. All produced fluids from any well served by vapor collection system which has had the casing vent closed shall be handled only in closed production equipment served by a 99% effective vapor control system. [District Rule 2201] Federally Enforceable Through Title V Permit
9. Water/VOCs condensate from all liquid knockout drums shall be pumped to production manifold, recycled to production wells for disposal, or pumped to vapor controlled storage tanks. [District Rule 2201] Federally Enforceable Through Title V Permit
10. The regeneration vessel air vent at each sulfur scrubbing system may be vented to atmosphere provided daily emissions from each vent shall not exceed 2.0 lbs VOC/day. [District Rule 2201] Federally Enforceable Through Title V Permit
11. Permittee shall determine VOC content of the exhaust at each regeneration vessel air vent semi-annually. If a semi-annual VOC content analysis fails to show compliance, the regeneration vessel air vents shall be tested once per week. If compliance with the VOC content limit has been demonstrated for eight consecutive weeks, then the VOC content testing frequency shall revert to semi-annually. Gas analysis shall be performed using ASTM D-3588. [District Rule 2201] Federally Enforceable Through Title V Permit
12. Total mass flowrate of sulfur compounds in gas leaving sulfur removal systems shall not exceed 336.92 lb/day as sulfur. [District Rule 2201] Federally Enforceable Through Title V Permit
13. Emissions of Volatile Organic Compounds (VOC) shall not exceed 1,888.1 lb/day (including regeneration vessel air vents). [District Rule 2201] Federally Enforceable Through Title V Permit
14. Permittee shall maintain accurate records of sulfur content and daily vapor flow rate of all uncondensed vapors sent to approved incineration devices(S-1547-726, '-733, '-735 through '-738, '-742 through '-749, '-760, '-761, '-762, '-803, '-834, '-835, and '-837) for disposal. Such records shall be maintained readily available for District inspection upon request for a period of five years. [District Rule 2201] Federally Enforceable Through Title V Permit
15. Permittee shall maintain with the permit a listing (updated each calendar year) of all steam-enhanced wells connected to the casing vent control system and such listing shall be made available for District inspection upon request. [District Rule 2201] Federally Enforceable Through Title V Permit
16. The requirements of SJVUAPCD Rule 4407 (Adopted May 19, 1994) do not apply to this permit unit. A permit shield is granted from this requirement. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
17. During the time any steam-enhanced crude oil production well is undergoing service or repair while the well is not producing, it shall be exempt from the emission control requirements of District Rule 4401. [District Rule 4401, 4.1] Federally Enforceable Through Title V Permit
18. The inspection requirements of Section 5.4.1 through Section 5.4.7 of Rule 4401 shall not apply to components exclusively handling gas/vapor or liquid with a VOC content of ten percent by weight (10%) or less, as determined by the test methods in Section 6.3.4 of Rule 4401. [District Rule 4401, 4.7] Federally Enforceable Through Title V Permit
19. 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

DRAFT
CONDITIONS CONTINUE ON NEXT PAGE

20. An operator shall be in violation of this rule if any District inspection demonstrates or if any operator inspection conducted pursuant to Section 5.4 of Rule 4401 demonstrates the existence of any combination of components with minor liquid leaks, minor gas leaks, or a gas leaks greater than 10,000 ppmv up to 50,000 ppmv that totals more than number of leaks allowed by Table 2 of Rule 4401. [District Rule 4401, 5.2.2] Federally Enforceable Through Title V Permit
21. An operator shall not use any component with a leak as defined in Section 3.0 of Rule 4401, or that is found to be in violation of the provisions of Section 5.2.2 of Rule 4401. However, components that were found leaking may be used provided such leaking components have been identified with a tag for repair, are repaired, or awaiting re-inspection after being repaired within the applicable time frame specified in Section 5.5 of Rule 4401. [District Rule 4401, 5.3.1] Federally Enforceable Through Title V Permit
22. 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, 5.3.2] Federally Enforceable Through Title V Permit
23. 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, 5.3.3] Federally Enforceable Through Title V Permit
24. 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, 5.4.1] Federally Enforceable Through Title V Permit
25. An operator shall visually inspect all pipes at least once every year. Any visual inspection of pipes that indicates a leak that cannot be immediately repaired to meet the leak standards of this rule shall be inspected within 24 hours after detecting the leak. If a leak is found, the leak shall be repaired as soon as practicable but not later than the time frame specified in Table 3 of Rule 4401. [District Rule 4401, 5.4.2] Federally Enforceable Through Title V Permit
26. In addition to the inspections required by Section 5.4.1 of Rule 4401, an operator shall inspect for leaks all accessible operating pumps, compressors, and PRDs in service as follows: An operator shall audio-visually (by hearing and by sight) inspect for leaks all accessible operating pumps, compressors, and PRDs in service at least once each calendar week. Any audio-visual inspection of an accessible operating pump, compressor, and PRD performed by an operator that indicates a leak that cannot be immediately repaired to meet the leak standards of this rule shall be inspected not later than 24 hours after conducting the audio-visual inspection. If a leak is found, the leak shall be repaired as soon as practicable but not later than the time frame specified in Table 3 of Rule 4401. [District Rule 4401, 5.4.3] Federally Enforceable Through Title V Permit
27. In addition to the inspections required by Sections 5.4.1, 5.4.2 and 5.4.3 of Rule 4401, operator shall perform the following: initially inspect a PRD that releases to the atmosphere as soon as practicable but not later than 24 hours after the discovery of the release, re-inspect the PRD not earlier than 24 hours after the initial inspection but not later than 15 calendar days after the initial inspection, inspect all new, replaced, or repaired fittings, flanges, and threaded connections within 72 hours of placing the component in service. Except for PRDs subject to the requirements of Section 5.4.4.1 of Rule 4401, an operator shall inspect a component that has been repaired or replaced not later than 15 calendar days after the component was repaired or replaced. [District Rule 4401, 5.4.4] Federally Enforceable Through Title V Permit
28. An operator shall inspect all unsafe-to-monitor components during each turnaround. [District Rule 4401, 5.4.7] Federally Enforceable Through Title V Permit
29. 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, 5.4.8] Federally Enforceable Through Title V Permit
30. 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, 5.5.1] Federally Enforceable Through Title V Permit

DRAFT
CONDITIONS CONTINUE ON NEXT PAGE

31. An operator shall keep the tag affixed to the component until an operator has met all of the following conditions: repaired or replaced the leaking component, re-inspected the component using the test method in Section 6.3.3, and the component is found to be in compliance with the requirements of this rule. [District Rule 4401 5.5.2] Federally Enforceable Through Title V Permit
32. 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, 5.5.3] Federally Enforceable Through Title V Permit
33. Except for leaking critical components or leaking essential components subject to the requirements of Section 5.5.7 of Rule 4401, if an operator has minimized a leak but the leak still exceeds the applicable leak limits as defined in Section 3.0 of Rule 4401, an operator shall comply with at least one of the following requirements as soon as practicable but not later than the time period specified in Table 3 of Rule 4401: Repair or replace the leaking component; or vent the leaking component to a VOC collection and control system as defined in Section 3.0 of Rule 4401, or remove the leaking component from operation. [District Rule 4401, 5.5.4] Federally Enforceable Through Title V Permit
34. 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, 5.5.4] Federally Enforceable Through Title V Permit
35. The leak rate measured after leak minimization has been performed shall be the leak rate used to determine the applicable repair period specified in Table 3 of Rule 4401. [District Rule 4401, 5.5.5] Federally Enforceable Through Title V Permit
36. The time of the initial leak detection shall be the start of the repair period specified in Table 3 of Rule 4401. [District Rule 4401, 5.5.6] Federally Enforceable Through Title V Permit
37. 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, 5.5.7] Federally Enforceable Through Title V Permit
38. 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
39. 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
40. 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, 6.1.4] Federally Enforceable Through Title V Permit
41. 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, 6.1.5] Federally Enforceable Through Title V Permit
42. 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, 6.1.6] Federally Enforceable Through Title V Permit
43. Operator shall keep a copy of the APCO-approved Operator Management Plan at the facility. [District Rule 4401, 6.1.7] Federally Enforceable Through Title V Permit
44. Operator shall keep a list of all gauge tanks, as defined in Section 3.0 of Rule 4401. The list shall contain the size, identification number, the location of each gauge tank and specify whether the gauge tank is upstream of all front line production equipment. [District Rule 4401, 6.1.8] Federally Enforceable Through Title V Permit
45. The results of gauge tank TVP testing conducted pursuant to Section 6.2.3 shall be submitted to the APCO within 60 days after the completion of the testing. [District Rule 4401, 6.1.9] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

46. 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, 6.1.10] Federally Enforceable Through Title V Permit
47. An operator shall source test annually all vapor collection and control systems used to control emissions from steam-enhanced crude oil production well vents to determine the control efficiency of the device(s) used for destruction or removal of VOC. Compliance testing shall be performed annually by source testers certified by ARB. Testing shall be performed during June, July, August, or September of each year if the system's control efficiency is dependent upon ambient air temperature. A process system as defined in Section 3.30 of Rule 4401 is not subject to compliance source testing requirements. [District Rule 4401, 6.2.1] Federally Enforceable Through Title V Permit
48. If approved by EPA, ARB, and the APCO, an operator need not comply with the annual testing requirement of Section 6.2.1 if all uncondensed VOC emissions collected by a vapor collection are controlled by an internal combustion engine subject to Rule 4702, a combustion device subject to Rule 4320, 4307 or 4308, a flare subject to Rule 4311. [District Rule 4401, 6.2.2] Federally Enforceable Through Title V Permit
49. An operator shall comply with the following requirements for each gauge tank, as defined in Section 3.0 of Rule 4401: Conduct periodic TVP testing of each gauge tank at least once every 24 months during summer (July - September), and whenever there is a change in the source or type of produced fluid in the gauge tank. The TVP testing shall be conducted at the actual storage temperature of the produced fluid in the gauge tank using the applicable TVP test method specified in Section 6.4 of Rule 4623 (Storage of Organic Liquids). The operator shall submit the TVP testing results to the APCO as specified in Section 6.1.9 of Rule 4401. [District Rule 4401, 6.2.3] Federally Enforceable Through Title V Permit
50. 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
51. 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
52. 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
53. 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, 6.3.4] Federally Enforceable Through Title V Permit

DRAFT

CONDITIONS CONTINUE ON NEXT PAGE

54. 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
- ~~55. All records shall be maintained and made readily available for District inspection upon request for a period of five years. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit~~

DRAFT

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: S-1547-1348-0

LEGAL OWNER OR OPERATOR: AERA ENERGY LLC
MAILING ADDRESS: PO BOX 11164
BAKERSFIELD, CA 93389-1164

LOCATION: HEAVY OIL WESTERN STATIONARY SOURCE
KERN COUNTY, CA

SECTION: SE2,3 TOWNSHIP: 29S RANGE: 21E

EQUIPMENT DESCRIPTION:
36 MMBTU/HR CEB MODEL 800-CA VOC DESTRUCTION DEVICE (OR EQUIVALENT)

ISSUANCE DATE: DRAFT
DRAFT

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. ATC shall be implemented subsequent to or concurrently with ATC S-1547-359-32. [District Rule 2201] Federally Enforceable Through Title V Permit
4. Prior to operating equipment under this Authority to Construct, permittee shall surrender NOx emission reduction credits for the following quantity of emissions: 1st quarter - 1419 lb, 2nd quarter - 1419 lb, 3rd quarter - 1419 lb, and fourth quarter - 1419 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 2/18/16) for the ERC specified below. [District Rule 2201] Federally Enforceable Through Title V Permit
5. Prior to operating equipment under this Authority to Construct, permittee shall surrender PM10 emission reduction credits for the following quantity of emissions: 1st quarter - 630 lb, 2nd quarter - 630 lb, 3rd quarter - 630 lb, and fourth quarter - 630 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 2/18/16) for the ERC specified below. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director, APCO

Arnaud Marjolle, Director of Permit Services
S-1547-1348-0 Jul 19 2016 2:38PM - EDGEHLR : Joint Inspection NOT Required

6. Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 315 lb, 2nd quarter - 315 lb, 3rd quarter - 315 lb, and fourth quarter - 315 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 2/18/16) for the ERC specified below. [District Rule 2201] Federally Enforceable Through Title V Permit
7. ERC Certificate Numbers S-3919-1, S-3689-2, and S-3833-5 (or a certificate split from these certificates) 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
8. The permittee shall obtain written District approval for the use of any equivalent equipment not specifically approved by this ATC. Approval of the equivalent equipment shall be made in writing and only after the District's determination that the submitted design and performance of the proposed alternate equipment is equivalent to the authorized equipment [District Rule 2010] Federally Enforceable Through Title V Permit
9. The permittee's request for approval of equivalent equipment shall include the make, model, manufacturer's maximum rating, manufacturer's guaranteed emissions rates, equipment drawing(s) and operational characteristics/parameters [District Rule 2010] Federally Enforceable Through Title V Permit
10. The unit is only allowed to operate at two locations (35.43216, -119.68367/Sec. 2, T29S, R21E; or 35.43504, -119.70472/Sec. 3, T29S, R21E). [District Rule 2201] Federally Enforceable Through Title V Permit
11. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1/4 or 5% opacity. [District Rules 2201 and 4101] Federally Enforceable Through Title V Permit
12. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
13. A flame shall be present at all times when combustible gases are vented. [District Rule 2201] Federally Enforceable Through Title V Permit
14. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102] Federally Enforceable Through Title V Permit
15. Emission rates from this unit shall not exceed any of the following limits: 0.018 lb-NO_x/MMBtu (15 ppmv @ 3% O₂); 0.008 lb-PM₁₀/MMBtu; 0.011 lb-CO/MMBtu (14.9 ppmv @ 3% O₂); or 0.004 lb-VOC/MMBtu (9.5 ppmv @ 3% O₂) [District Rule 2201] Federally Enforceable Through Title V Permit
16. Total combined annual heat input of for S-1547-1348, '-1349, and '-1350 shall not exceed 630,720 MMBtu/yr. [District Rule 2201] Federally Enforceable Through Title V Permit
17. Permittee shall document compliance with the annual heat input limit required by this permit by calculation using the volume of gas combusted by each of S-1547-1348, '-1349, and '-1350 and the HHV of the gas. The HHV of the gas shall be determined annually. [District Rule 2201] Federally Enforceable Through Title V Permit
18. The permittee shall monitor and record the stack concentration of NO_x, CO, and O₂ at least once every quarter (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall recommence the next calendar quarter where the unit operates more than 5 days. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

DRAFT

CONDITIONS CONTINUE ON NEXT PAGE

19. If either the NO_x or CO concentrations corrected to 3% O₂, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
20. All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
21. The permittee shall maintain records of: (1) the date and time of NO_x, CO, and O₂ measurements, (2) the O₂ concentration in percent and the measured NO_x and CO concentrations corrected to 3% O₂, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
22. Permittee shall submit written notification to the District upon designating the unit as nonoperational or active. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
23. If unit is not in operation, normal source testing shall not be required. Upon recommencing operation of this unit, normal source testing shall resume. Any source testing required by this permit shall be performed within 60 days of recommencing operation of this unit, regardless of whether the unit remains active or is again nonoperational. [District Rule 2080] Federally Enforceable Through Title V Permit
24. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
25. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
26. Source testing to measure NO_x, CO, and VOC emissions from this unit shall be conducted within 60 days of initial start-up. [District Rule 2201] Federally Enforceable Through Title V Permit
27. Source testing to measure NO_x, CO, and VOC emissions from this unit shall be conducted at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rule 2201] Federally Enforceable Through Title V Permit
28. NO_x emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 1080 and 2201] Federally Enforceable Through Title V Permit
29. CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 1080 and 2201] Federally Enforceable Through Title V Permit
30. VOC emissions for source test purposes shall be determined using EPA Method 18 or equivalent test method approved by the District. [District Rules 1080 and 2201] Federally Enforceable Through Title V Permit

DRAFT
CONDITIONS CONTINUE ON NEXT PAGE

31. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4320. [District Rules 1080 and 2201] Federally Enforceable Through Title V Permit
32. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 1080 and 2201]
33. Annual records (updated monthly) of combined annual heat input (MMBtu/yr) for S-1547-1348, '-1349, and '-1350 shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
34. All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rule 2201] Federally Enforceable Through Title V Permit

DRAFT

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT
DRAFT

PERMIT NO: S-1547-1349-0

LEGAL OWNER OR OPERATOR: AERA ENERGY LLC
MAILING ADDRESS: PO BOX 11164
BAKERSFIELD, CA 93389-1164

LOCATION: HEAVY OIL WESTERN STATIONARY SOURCE
KERN COUNTY, CA

SECTION: SE2,3 TOWNSHIP: 29S RANGE: 21E

EQUIPMENT DESCRIPTION:
36 MMBTU/HR CEB MODEL 800-CA VOC DESTRUCTION DEVICE (OR EQUIVALENT)

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. ATC shall be implemented subsequent to or concurrently with ATC S-1547-359-32. [District Rule 2201] Federally Enforceable Through Title V Permit
4. Prior to operating equipment under this Authority to Construct, permittee shall surrender NOx emission reduction credits for the following quantity of emissions: 1st quarter - 1419 lb, 2nd quarter - 1419 lb, 3rd quarter - 1419 lb, and fourth quarter - 1419 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 2/18/16) for the ERC specified below. [District Rule 2201] Federally Enforceable Through Title V Permit
5. Prior to operating equipment under this Authority to Construct, permittee shall surrender PM10 emission reduction credits for the following quantity of emissions: 1st quarter - 630 lb, 2nd quarter - 630 lb, 3rd quarter - 630 lb, and fourth quarter - 631 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 2/18/16) for the ERC specified below. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director / APCO

DRAFT
Arnaud Marjolle, Director of Permit Services

S-1547-1349-0 Jul 18 2016 1 27 PM -- EDG:HLR : Joint Inspection NOT Required

6. Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 315 lb, 2nd quarter - 315 lb, 3rd quarter - 315 lb, and fourth quarter - 315 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 2/18/16) for the ERC specified below. [District Rule 2201] Federally Enforceable Through Title V Permit
7. ERC Certificate Numbers S-3919-1, S-3689-2, and S-3833-5 (or a certificate split from these certificates) 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
8. The permittee shall obtain written District approval for the use of any equivalent equipment not specifically approved by this ATC. Approval of the equivalent equipment shall be made in writing and only after the District's determination that the submitted design and performance of the proposed alternate equipment is equivalent to the authorized equipment [District Rule 2010] Federally Enforceable Through Title V Permit
9. The permittee's request for approval of equivalent equipment shall include the make, model, manufacturer's maximum rating, manufacturer's guaranteed emissions rates, equipment drawing(s) and operational characteristics/parameters [District Rule 2010] Federally Enforceable Through Title V Permit
10. The unit is only allowed to operate at two locations (35.43216, -119.68367/Sec. 2, T29S, R21E; or 35.43504, -119.70472/Sec. 3, T29S, R21E). [District Rule 2201] Federally Enforceable Through Title V Permit
11. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1/4 or 5% opacity. [District Rules 2201 and 4101] Federally Enforceable Through Title V Permit
12. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
13. A flame shall be present at all times when combustible gases are vented. [District Rule 2201] Federally Enforceable Through Title V Permit
14. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102] Federally Enforceable Through Title V Permit
15. Emission rates from this unit shall not exceed any of the following limits: 0.018 lb-NOx/MMBtu (15 ppmv @ 3% O2); 0.008 lb-PM10/MMBtu; 0.011 lb-CO/MMBtu (14.9 ppmv @ 3% O2); or 0.004 lb-VOC/MMBtu (9.5 ppmv @ 3% O2) [District Rule 2201] Federally Enforceable Through Title V Permit
16. Total combined annual heat input of for S-1547-1348, '-1349, and '-1350 shall not exceed 630,720 MMBtu/yr. [District Rule 2201] Federally Enforceable Through Title V Permit
17. Permittee shall document compliance with the annual heat input limit required by this permit by calculation using the volume of gas combusted by each of S-1547-1348, '-1349, and '-1350 and the HHV of the gas. The HHV of the gas shall be determined annually. [District Rule 2201] Federally Enforceable Through Title V Permit
18. The permittee shall monitor and record the stack concentration of NOx, CO, and O2 at least once every quarter (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall recommence the next calendar quarter where the unit operates more than 5 days. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

DRAFT
CONDITIONS CONTINUE ON NEXT PAGE

19. If either the NOx or CO concentrations corrected to 3% O₂, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
20. All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
21. The permittee shall maintain records of: (1) the date and time of NOx, CO, and O₂ measurements, (2) the O₂ concentration in percent and the measured NOx and CO concentrations corrected to 3% O₂, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
22. Permittee shall submit written notification to the District upon designating the unit as nonoperational or active. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
23. If unit is not in operation, normal source testing shall not be required. Upon recommencing operation of this unit, normal source testing shall resume. Any source testing required by this permit shall be performed within 60 days of recommencing operation of this unit, regardless of whether the unit remains active or is again nonoperational. [District Rule 2080] Federally Enforceable Through Title V Permit
24. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
25. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
26. Source testing to measure NOx, CO, and VOC emissions from this unit shall be conducted within 60 days of initial start-up. [District Rule 2201] Federally Enforceable Through Title V Permit
27. Source testing to measure NOx, CO, and VOC emissions from this unit shall be conducted at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rule 2201] Federally Enforceable Through Title V Permit
28. NOx emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 1080 and 2201] Federally Enforceable Through Title V Permit
29. CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 1080 and 2201] Federally Enforceable Through Title V Permit
30. VOC emissions for source test purposes shall be determined using EPA Method 18 or equivalent test method approved by the District. [District Rules 1080 and 2201] Federally Enforceable Through Title V Permit

DRAFT
CONDITIONS CONTINUE ON NEXT PAGE

31. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4320. [District Rules 1080 and 2201] Federally Enforceable Through Title V Permit
32. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 1080 and 2201]
33. Annual records (updated monthly) of combined annual heat input (MMBtu/yr) for S-1547-1348, '-1349, and '-1350 shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
34. All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rule 2201] Federally Enforceable Through Title V Permit

DRAFT

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT
DRAFT

PERMIT NO: S-1547-1350-0

LEGAL OWNER OR OPERATOR: AERA ENERGY LLC
MAILING ADDRESS: PO BOX 11164
BAKERSFIELD, CA 93389-1164

LOCATION: HEAVY OIL WESTERN STATIONARY SOURCE
KERN COUNTY, CA

SECTION: SE2,3 TOWNSHIP: 29S RANGE: 21E

EQUIPMENT DESCRIPTION:
36 MMBTU/HR CEB MODEL 800-CA VOC DESTRUCTION DEVICE (OR EQUIVALENT)

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. ATC shall be implemented subsequent to or concurrently with ATC S-1547-359-32. [District Rule 2201] Federally Enforceable Through Title V Permit
4. Prior to operating equipment under this Authority to Construct, permittee shall surrender NOx emission reduction credits for the following quantity of emissions: 1st quarter - 1419 lb, 2nd quarter - 1419 lb, 3rd quarter - 1419 lb, and fourth quarter - 1419 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 2/18/16) for the ERC specified below. [District Rule 2201] Federally Enforceable Through Title V Permit
5. Prior to operating equipment under this Authority to Construct, permittee shall surrender PM10 emission reduction credits for the following quantity of emissions: 1st quarter - 630 lb, 2nd quarter - 630 lb, 3rd quarter - 630 lb, and fourth quarter - 631 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 2/18/16) for the ERC specified below. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director, APCO

DRAFT

Arnaud Marjolle, Director of Permit Services

S-1547-1350-0: Jul 19 2016 12:27PM -- EDOENHLR : Joint Inspection NOT Required

6. Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 315 lb, 2nd quarter - 315 lb, 3rd quarter - 315 lb, and fourth quarter - 315 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 2/18/16) for the ERC specified below. [District Rule 2201] Federally Enforceable Through Title V Permit
7. ERC Certificate Numbers S-3919-1, S-3689-2, and S-3833-5 (or a certificate split from these certificates) 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
8. The permittee shall obtain written District approval for the use of any equivalent equipment not specifically approved by this ATC. Approval of the equivalent equipment shall be made in writing and only after the District's determination that the submitted design and performance of the proposed alternate equipment is equivalent to the authorized equipment [District Rule 2010] Federally Enforceable Through Title V Permit
9. The permittee's request for approval of equivalent equipment shall include the make, model, manufacturer's maximum rating, manufacturer's guaranteed emissions rates, equipment drawing(s) and operational characteristics/parameters [District Rule 2010] Federally Enforceable Through Title V Permit
10. The unit is only allowed to operate at two locations (35.43216, -119.68367/Sec. 2, T29S, R21E; or 35.43504, -119.70472/Sec. 3, T29S, R21E). [District Rule 2201] Federally Enforceable Through Title V Permit
11. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1/4 or 5% opacity. [District Rules 2201 and 4101] Federally Enforceable Through Title V Permit
12. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
13. A flame shall be present at all times when combustible gases are vented. [District Rule 2201] Federally Enforceable Through Title V Permit
14. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102] Federally Enforceable Through Title V Permit
15. Emission rates from this unit shall not exceed any of the following limits: 0.018 lb-NOx/MMBtu (15 ppmv @ 3% O₂); 0.008 lb-PM₁₀/MMBtu; 0.011 lb-CO/MMBtu (14.9 ppmv @ 3% O₂); or 0.004 lb-VOC/MMBtu (9.5 ppmv @ 3% O₂) [District Rule 2201] Federally Enforceable Through Title V Permit
16. Total combined annual heat input of for S-1547-1348, '-1349, and '-1350 shall not exceed 630,720 MMBtu/yr. [District Rule 2201] Federally Enforceable Through Title V Permit
17. Permittee shall document compliance with the annual heat input limit required by this permit by calculation using the volume of gas combusted by each of S-1547-1348, '-1349, and '-1350 and the HHV of the gas. The HHV of the gas shall be determined annually. [District Rule 2201] Federally Enforceable Through Title V Permit
18. The permittee shall monitor and record the stack concentration of NO_x, CO, and O₂ at least once every quarter (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall recommence the next calendar quarter where the unit operates more than 5 days. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

DRAFT

CONDITIONS CONTINUE ON NEXT PAGE

19. If either the NO_x or CO concentrations corrected to 3% O₂, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
20. All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
21. The permittee shall maintain records of: (1) the date and time of NO_x, CO, and O₂ measurements, (2) the O₂ concentration in percent and the measured NO_x and CO concentrations corrected to 3% O₂, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
22. Permittee shall submit written notification to the District upon designating the unit as nonoperational or active. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
23. If unit is not in operation, normal source testing shall not be required. Upon recommencing operation of this unit, normal source testing shall resume. Any source testing required by this permit shall be performed within 60 days of recommencing operation of this unit, regardless of whether the unit remains active or is again nonoperational. [District Rule 2080] Federally Enforceable Through Title V Permit
24. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
25. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
26. Source testing to measure NO_x, CO, and VOC emissions from this unit shall be conducted within 60 days of initial start-up. [District Rule 2201] Federally Enforceable Through Title V Permit
27. Source testing to measure NO_x, CO, and VOC emissions from this unit shall be conducted at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rule 2201] Federally Enforceable Through Title V Permit
28. NO_x emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 1080 and 2201] Federally Enforceable Through Title V Permit
29. CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 1080 and 2201] Federally Enforceable Through Title V Permit
30. VOC emissions for source test purposes shall be determined using EPA Method 18 or equivalent test method approved by the District. [District Rules 1080 and 2201] Federally Enforceable Through Title V Permit

DRAFT
CONDITIONS CONTINUE ON NEXT PAGE

31. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4320. [District Rules 1080 and 2201] Federally Enforceable Through Title V Permit
32. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 1080 and 2201]
33. Annual records (updated monthly) of combined annual heat input (MMBtu/yr) for S-1547-1348, '-1349, and '-1350 shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
34. All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rule 2201] Federally Enforceable Through Title V Permit

DRAFT