



**MAR 04 2015**

Mr. Jerry Frost  
California Resources Production Corp.  
9600 Ming Avenue, Suite 300  
Bakersfield, CA 93311

**Re: Proposed ATC / Certificate of Conformity (Significant Mod)  
District Facility # S-1326, S-1327, S-8454, S-8567  
Project # S-1143931, S-1143925, S-1150622, S-1150623**

Dear Mr. Frost:

Enclosed for your review is the District's analysis of an application for Authorities to Construct for the facility identified above. You requested that Certificates of Conformity with the procedural requirements of 40 CFR Part 70 be issued with this project. California Resources Production Corp. is applying for Authority to Construct (ATC) permits for a new 25 MMBtu/hr steam generator to be used at various unspecified locations in the S-1326, S-1327, S-8454 and S-8567 stationary sources (the entire valley portion of Kern County).

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

If you have any questions, please contact Mr. Jim Swaney, Permit Services Manager, at (559) 230-5900.

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

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**Northern Region**  
4800 Enterprise Way  
Modesto, CA 95358-8718  
Tel: (209) 557-6400 FAX: (209) 557-6475

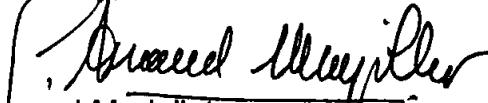
**Central Region (Main Office)**  
1890 E. Gettysburg Avenue  
Fresno, CA 93726-D244  
Tel: (559) 230-8000 FAX: (559) 230-6061

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

Mr. Jerry Frost  
Page 2

Thank you for your cooperation in this matter.

Sincerely,



Arnaud Marjollet  
Director of Permit Services

Enclosures

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



- Rule 4320 Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters Greater than 5.0 MMBtu/hr (10/16/08)  
Rule 4351 Boilers, Steam Generators, And Process Heaters – Phase 1 (8/21/03)  
Rule 4405 Oxides Of Nitrogen Emissions From Existing Steam Generators Used In Thermally Enhanced Oil Recovery – Central And Western Kern County Fields (12/17/92)  
Rule 4406 Sulfur Compounds From Oil-Field Steam Generators – Kern County (12/17/92)  
Rule 4801 Sulfur Compounds (12/17/92)  
CH&SC 41700 Health Risk Assessment  
CH&SC 42301.6 School Notice  
Public Resources Code 21000-21177: California Environmental Quality Act (CEQA)  
California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387:  
CEQA Guidelines

### III. PROJECT LOCATION

The subject steam generator will be operated at various unspecified locations within the Heavy Oil Central, Heavy Oil Western, Light Oil Central, and Light Oil Western Stationary Sources.

Facility #	Stationary Source
S-1326	Heavy Oil Central
S-1327	Heavy Oil Western
S-6848	
S-8454	Light Oil Western
S-8567	Light Oil Central

The equipment is not located within 1,000 feet of the outer boundary of a K-12 school. Therefore, the public notification requirement of California Health and Safety Code 42301.6 is not applicable to this project.

### IV. PROCESS DESCRIPTION

In thermally enhanced oil recovery (TEOR), natural gas is combusted in steam generators to produce steam for injection into heavy crude oil bearing strata via injection wells to reduce the viscosity of the crude oil, thereby facilitating thermally enhanced oil production.

**V. EQUIPMENT LISTING**

ATC Permit #	ATC Equipment Description
S-1326-457-0	25 MMBTU/HR NATURAL GAS/TEOR GAS/FIELD GAS/PROPANE-FIRED PORTABLE STEAM GENERATOR WITH NORTH AMERICAN LE, COEN QLN-11, OR EQUIVALENT LOW NOX BURNER AND A FLUE GAS RECIRCULATION SYSTEM (VARIOUS UNSPECIFIED LOCATIONS WITHIN HEAVY OIL CENTRAL STATIONARY SOURCE)
S-1327-219-0	25 MMBTU/HR NATURAL GAS/TEOR GAS/FIELD GAS/PROPANE-FIRED PORTABLE STEAM GENERATOR WITH NORTH AMERICAN LE, COEN QLN-11, OR EQUIVALENT LOW NOX BURNER AND A FLUE GAS RECIRCULATION SYSTEM (VARIOUS UNSPECIFIED LOCATIONS WITHIN HEAVY OIL WESTERN STATIONARY SOURCE)
S-8454-18-0	25 MMBTU/HR NATURAL GAS/TEOR GAS/FIELD GAS/PROPANE-FIRED PORTABLE STEAM GENERATOR WITH NORTH AMERICAN LE, COEN QLN-11, OR EQUIVALENT LOW NOX BURNER AND A FLUE GAS RECIRCULATION SYSTEM (VARIOUS UNSPECIFIED LOCATIONS WITHIN LIGHT OIL WESTERN STATIONARY SOURCE)
S-8567-1-0	25 MMBTU/HR NATURAL GAS/TEOR GAS/FIELD GAS/PROPANE-FIRED PORTABLE STEAM GENERATOR WITH NORTH AMERICAN LE, COEN QLN-11, OR EQUIVALENT LOW NOX BURNER AND A FLUE GAS RECIRCULATION SYSTEM (VARIOUS UNSPECIFIED LOCATIONS WITHIN LIGHT OIL CENTRAL STATIONARY SOURCE)

Per District policy APR 1035, "Flexibility in Equipment Descriptions in ATCs," flexibility in the final specifications of the equipment is requested and will be allowed as stated in the following conditions:

- The permittee shall obtain written District approval for the use of any equivalent equipment not specifically approved by this Authority to Construct. Approval of the equivalent equipment shall be made only after the District's determination that the submitted design and performance of the proposed alternate equipment is equivalent to the specifically authorized equipment. [District Rule 2201]
- The permittee's request for approval of equivalent equipment shall include the make, model, manufacturer's maximum rating, manufacturer's guaranteed emission rates, equipment drawing(s), and operational characteristics/parameters. [District Rule 2201]
- Alternate equipment shall be of the same class and category of source as the equipment authorized by the Authority to Construct. [District Rule 2201]
- No emission factor and no emission shall be greater for the alternate equipment than for the proposed equipment. No changes in the hours of operation, operating rate, throughput, or firing rate may be authorized for any alternate equipment. [District Rule 2201]

## VI. EMISSION CONTROL TECHNOLOGY EVALUATION

Emissions from natural gas-fired steam generators include NO<sub>x</sub>, CO, VOC, PM<sub>10</sub>, and SO<sub>x</sub>.

Low-NO<sub>x</sub> burners reduce NO<sub>x</sub> formation by producing lower flame temperatures (and longer flames) than conventional burners. Conventional burners thoroughly mix all the fuel and air in a single stage just prior to combustion, whereas low-NO<sub>x</sub> burners delay the mixing of fuel and air by introducing the fuel (or sometimes the air) in multiple stages. Generally, in the first combustion stage, the air-fuel mixture is fuel rich. In a fuel rich environment, all the oxygen will be consumed in reactions with the fuel, leaving no excess oxygen available to react with nitrogen to produce thermal NO<sub>x</sub>. In the secondary and tertiary stages, the combustion zone is maintained in a fuel-lean environment. The excess air in these stages helps to reduce the flame temperature so that the reaction between the excess oxygen with nitrogen is minimized.

The use of flue gas re-circulation (FGR) can reduce nitrogen oxides (NO<sub>x</sub>) emissions by 60% to 70%. In an FGR system, a portion of the flue gas is re-circulated back to the inlet air. As flue gas is composed mainly of nitrogen and the products of combustion, it is much lower in oxygen than the inlet air and contains virtually no combustible hydrocarbons to burn. Thus, flue gas is practically inert. The addition of an inert mass of gas to the combustion reaction serves to absorb heat without producing heat, thereby lowering the flame temperature. Since thermal NO<sub>x</sub> is formed by high flame temperatures, the lower flame temperatures produced by FGR serve to reduce thermal NO<sub>x</sub>.

## VII. GENERAL CALCULATIONS

### A. Assumptions

- The maximum operating schedule is 24 hours/day, 365 days/year (per applicant)
- F-factor for natural gas/TEOR gas/field gas is 8,578 dscf/MMBtu (corrected to 60 °F, 40 CFR 60, Appendix B)
- Molar Specific Volume of a gas @ 60 °F is 379.5 ft<sup>3</sup>/lb-mol
- Natural Gas/TEOR gas/field gas Heating Value: 1,000 Btu/scf (District Practice)
- Commercial propane maximum sulfur content = 15 gr S/100 scf (per CRC Handbook of Tables for Applied Engineering Science, 2nd Edition, page 390)

**B. Emission Factors**

Steady State

Pollutant	Emission Factors		Source
NO <sub>x</sub>	0.008 lb/MMBtu	7 ppmvd NO <sub>x</sub> (@ 3% O <sub>2</sub> )	Manufacturer's Guarantee
SO <sub>x</sub>	0.016 lb/MMBtu		AP-42 (7/08) Table 1.5-1
PM <sub>10</sub>	0.0076 lb/MMBtu		AP-42 (10/98) Table 1.4-2 and AP-42 (7/08) Table 1.5-1
CO	0.0185 lb/MMBtu	25 ppmvd CO (@ 3% O <sub>2</sub> )	Manufacturer's Guarantee
VOC	0.0055 lb/MMBtu		AP-42 (7/98) Table 1.4-2

Startup and Shutdown

The applicant has stated SO<sub>x</sub>, PM<sub>10</sub>, CO, and VOC will meet the steady state emission limits during startup.

The startup and shutdown emission rates are expected to be greater than the steady state emission rates for NO<sub>x</sub> emissions.

Pollutant	Startup and Shutdown Emission Factor	Source
NO <sub>x</sub>	0.036 lb/MMBtu	AP-42 (7/98) Table 1.4-1

**C. Calculations**

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

Since these are new emission units, PE1 = 0 for all pollutants.

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

The PE2 for each pollutant is calculated with the following equation:

- $PE2 = EF \text{ (lb/MMBtu)} \times \text{Heat Input (MMBtu/hr)} \times \text{Operational Schedule (hr/day or hr/year)}$

It is assumed that the steam generator will spend 2 hours/day in startup mode, 2 hours/day in shutdown mode, leaving a remainder of 20 hours of operation per day at steady state.

Startup and Shutdown

Startup Daily Post-Project Potential to Emit						
NO <sub>x</sub>	0.036	(lb/MMBtu)	x	25	(MMBtu/hr)	x 2 (hr/day) = 1.8 (lb/day)

Shutdown Daily Post-Project Potential to Emit						
NO <sub>x</sub>	0.036	(lb/MMBtu)	x	25	(MMBtu/hr)	x 2 (hr/day) = 1.8 (lb/day)

Steady State

Steady State Daily Post-Project Potential to Emit						
NO <sub>x</sub>	0.008	(lb/MMBtu)	x	25	(MMBtu/hr)	x 20 (hr/day) = 4.0 (lb/day)
SO <sub>x</sub>	0.016	(lb/MMBtu)	x	25	(MMBtu/hr)	x 24 (hr/day) = 9.6 (lb/day)
PM <sub>10</sub>	0.0076	(lb/MMBtu)	x	25	(MMBtu/hr)	x 24 (hr/day) = 4.6 (lb/day)
CO	0.0185	(lb/MMBtu)	x	25	(MMBtu/hr)	x 24 (hr/day) = 11.1 (lb/day)
VOC	0.0055	(lb/MMBtu)	x	25	(MMBtu/hr)	x 24 (hr/day) = 3.3 (lb/day)

Worst Case Daily Post-Project Potential to Emit	
Pollutant	Daily PE2 (lb/day)
NO <sub>x</sub>	1.8 + 1.8 + 4.0 = 7.6
SO <sub>x</sub>	9.6
PM <sub>10</sub>	4.6
CO	11.1
VOC	3.3

Annual Post-Project Potential to Emit						
NO <sub>x</sub>	0.008	(lb/MMBtu)	x	25	(MMBtu/hr)	x 8,760 (hr/year) = 1,752 (lb/year)
SO <sub>x</sub>	0.016	(lb/MMBtu)	x	25	(MMBtu/hr)	x 8,760 (hr/year) = 3,504 (lb/year)
PM <sub>10</sub>	0.0076	(lb/MMBtu)	x	25	(MMBtu/hr)	x 8,760 (hr/year) = 1,664 (lb/year)
CO	0.0185	(lb/MMBtu)	x	25	(MMBtu/hr)	x 8,760 (hr/year) = 4,052 (lb/year)
VOC	0.0055	(lb/MMBtu)	x	25	(MMBtu/hr)	x 8,760 (hr/year) = 1,205 (lb/year)

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

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

The following values were taken from projects S-1140286, S-1140291, S-1140292, and S-1140496.

<b>Pre-Project Stationary Source Potential to Emit [SSPE1]</b>					
Facility #	NO <sub>x</sub> (lb/year)	SO <sub>x</sub> (lb/year)	PM <sub>10</sub> (lb/year)	CO (lb/year)	VOC (lb/year)
S-1326	148,885	55,284	53,605	352,503	182,167
S-1327	143,880	52,199	24,345	451,979	421,474
S-8567	70,789	4,637	14,616	168,511	59,000
S-8454	> 20,000	> 140,000	> 140,000	> 200,000	> 20,000

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

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

<b>Post-Project Stationary Source Potential to Emit [SSPE2]</b>					
<b>Facility S-1326</b>					
Permit Unit	NO <sub>x</sub> (lb/year)	SO <sub>x</sub> (lb/year)	PM <sub>10</sub> (lb/year)	CO (lb/year)	VOC (lb/year)
SSPE1	148,885	55,284	53,605	352,503	182,167
ATC S-1326-457-0	1,752	3,504	1,664	4,052	1,205
Post-project SSPE (SSPE2)	150,637	58,788	55,269	356,555	183,372

<b>Post-Project Stationary Source Potential to Emit [SSPE2]</b>					
<b>Facility S-1327</b>					
Permit Unit	NO <sub>x</sub> (lb/year)	SO <sub>x</sub> (lb/year)	PM <sub>10</sub> (lb/year)	CO (lb/year)	VOC (lb/year)
SSPE1	143,880	52,199	24,345	451,979	421,474
ATC S-1327-219-0	1,752	3,504	1,664	4,052	1,205
Post-project SSPE (SSPE2)	145,632	55,703	26,009	456,031	422,679

<b>Post-Project Stationary Source Potential to Emit [SSPE2] Facility S-8454</b>					
Permit Unit	NO <sub>x</sub> (lb/year)	SO <sub>x</sub> (lb/year)	PM <sub>10</sub> (lb/year)	CO (lb/year)	VOC (lb/year)
SSPE1	> 20,000	> 140,000	> 140,000	> 200,000	> 20,000
ATC S-8454-18-0	1,752	3,504	1,664	4,052	1,205
Post-project SSPE (SSPE2)	> 20,000	> 140,000	> 140,000	> 200,000	> 20,000

<b>Post-Project Stationary Source Potential to Emit [SSPE2] Facility S-8567</b>					
Permit Unit	NO <sub>x</sub> (lb/year)	SO <sub>x</sub> (lb/year)	PM <sub>10</sub> (lb/year)	CO (lb/year)	VOC (lb/year)
SSPE1	70,789	4,637	14,616	168,511	59,000
ATC S-8567-1-0	1,752	3,504	1,664	4,052	1,205
Post-project SSPE (SSPE2)	72,541	8,141	16,280	172,563	60,205

## 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

<b>Rule 2201 Major Source Determination (lb/year) Facility S-1326</b>						
	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO	VOC
Pre-Project SSPE (SSPE1)	148,885	55,284	53,605	≤ 53,605	352,503	182,167
Post Project SSPE (SSPE2)	150,637	58,788	55,269	≤ 55,269	356,555	183,372
Major Source Threshold	20,000	140,000	140,000	200,000	200,000	20,000
Major Source?	Yes	No	No	No	Yes	Yes

As seen in the table above, the facility is an existing Major Source for NO<sub>x</sub>, CO, and VOC and is not becoming a Major Source as a result of this project.

<b>Rule 2201 Major Source Determination (lb/year) Facility S-1327</b>						
	<b>NO<sub>x</sub></b>	<b>SO<sub>x</sub></b>	<b>PM<sub>10</sub></b>	<b>PM<sub>2.5</sub></b>	<b>CO</b>	<b>VOC</b>
Pre-Project SSPE (SSPE1)	143,880	52,199	24,345	≤ 24,345	451,979	421,474
Post Project SSPE (SSPE2)	145,632	55,703	26,009	≤ 26,009	456,031	422,679
Major Source Threshold	20,000	140,000	140,000	200,000	200,000	20,000
Major Source?	Yes	No	No	No	Yes	Yes

As seen in the table above, the facility is an existing Major Source for NO<sub>x</sub>, CO, and VOC and is not becoming a Major Source as a result of this project.

<b>Rule 2201 Major Source Determination (lb/year) Facility S-8454</b>						
	<b>NO<sub>x</sub></b>	<b>SO<sub>x</sub></b>	<b>PM<sub>10</sub></b>	<b>PM<sub>2.5</sub></b>	<b>CO</b>	<b>VOC</b>
Pre-Project SSPE (SSPE1)	> 20,000	> 140,000	> 140,000	> 200,000	> 200,000	> 20,000
Post Project SSPE (SSPE2)	> 20,000	> 140,000	> 140,000	> 200,000	> 200,000	> 20,000
Major Source Threshold	20,000	140,000	140,000	200,000	200,000	20,000
Major Source?	Yes	Yes	Yes	Yes	Yes	Yes

As seen in the table above, the facility is an existing Major Source for NO<sub>x</sub>, SO<sub>x</sub>, PM<sub>10</sub>, PM<sub>2.5</sub>, CO, and VOC and is not becoming a Major Source as a result of this project.

<b>Rule 2201 Major Source Determination (lb/year) Facility S-8567</b>						
	<b>NO<sub>x</sub></b>	<b>SO<sub>x</sub></b>	<b>PM<sub>10</sub></b>	<b>PM<sub>2.5</sub></b>	<b>CO</b>	<b>VOC</b>
Pre-Project SSPE (SSPE1)	70,789	4,637	14,616	≤ 14,616	168,511	59,000
Post Project SSPE (SSPE2)	72,541	8,141	16,280	≤ 16,280	172,563	60,205
Major Source Threshold	20,000	140,000	140,000	200,000	200,000	20,000
Major Source?	Yes	No	No	No	No	Yes

As seen in the table above, the facility is an existing Major Source for NO<sub>x</sub> and VOC and is not becoming a Major Source 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)(i). Therefore the following PSD Major Source thresholds are applicable.

<b>PSD Major Source Determination (tons/year) Facility S-1326</b>						
	NO2	VOC	SO2	CO	PM	PM10
Estimated Facility PE before Project Increase	74.4	91.1	27.6	176.3	26.8	26.8
PSD Major Source Thresholds	250	250	250	250	250	250
PSD Major Source ? (Y/N)	N	N	N	N	N	N

<b>PSD Major Source Determination (tons/year) Facility S-8454</b>						
	NO2	VOC	SO2	CO	PM	PM10
Estimated Facility PE before Project Increase	35.4	29.5	2.3	84.3	7.3	7.3
PSD Major Source Thresholds	250	250	250	250	250	250
PSD Major Source ? (Y/N)	N	N	N	N	N	N

<b>PSD Major Source Determination (tons/year) Facility S-8567</b>						
	NO2	VOC	SO2	CO	PM	PM10
Estimated Facility PE before Project Increase	71.9	210.7	26.1	226.0	12.2	12.2
PSD Major Source Thresholds	250	250	250	250	250	250
PSD Major Source ? (Y/N)	N	N	N	N	N	N

As shown above, the facilities are not existing PSD major sources for any regulated NSR pollutant expected to be emitted at these facilities.

Per project S-1142343,

<b>PSD Major Source Determination (tons/year) Facility S-8454</b>	
	CO
Estimated Facility PE before Project Increase	> 250
PSD Major Source Thresholds	250
PSD Major Source ? (Y/N)	Y

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

**6. Baseline Emissions (BE)**

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

Pursuant to District Rule 2201, BE = PE1 for:

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

otherwise,

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

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

**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."

Pursuant to the applicant this application is a separate "project" from other applications submitted by the facility for new steam generators at the same contiguous and adjacent property, because the proposed steam generator is not economically or technically dependent on the installation of the other proposed steam generators.

As such, the calculations below include only the subject project.

S-8454 is a major source for all 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.

<b>SB 288 Major Modification Thresholds</b>			
<b>Pollutant</b>	<b>Project PE2 (lb/year)</b>	<b>Threshold (lb/year)</b>	<b>SB 288 Major Modification Calculation Required?</b>
NO <sub>x</sub>	1,752	50,000	No
SO <sub>x</sub>	3,504	80,000	No
PM <sub>10</sub>	1,664	30,000	No
VOC	1,205	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.

Pursuant to the applicant this application is a separate "project" from other applications submitted by the facility for new steam generators at the same contiguous and adjacent property, because the proposed steam generator is not economically or technically dependent on the installation of the other proposed steam generators.

As such, the calculations below include only the subject project.

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

#### Step 1

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

<b>Federal Major Modification Thresholds for Emission Increases</b>			
<b>Pollutant</b>	<b>Total Emissions Increases (lb/yr)</b>	<b>Thresholds (lb/yr)</b>	<b>Federal Major Modification?</b>
NO <sub>x</sub>	1,752	0	Yes
VOC	1,205	0	Yes
PM <sub>10</sub>	1,664	30,000	No
PM <sub>2.5</sub>	1,664	20,000	No
SO <sub>x</sub>	3,504	80,000	No

Since there is an increase in NO<sub>x</sub> and VOC emissions, this project constitutes a Federal Major Modification for NO<sub>x</sub> and VOC emissions, and no further analysis is required.

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

Rule 2410 applies to pollutants for which the District is in attainment or for unclassified, pollutants. The pollutants addressed in the PSD applicability determination are listed as follows:

- NO<sub>2</sub> (as a primary pollutant)
- SO<sub>2</sub> (as a primary pollutant)
- CO
- PM
- PM<sub>10</sub>

**I. Project Location Relative to Class 1 Area**

As demonstrated in the "PSD Major Source Determination" Section above, facility S-8454 was determined to be a 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.

<b>PSD Significant Emission Increase Determination: Potential to Emit (tons/year)</b>					
	NO <sub>2</sub>	SO <sub>2</sub>	CO	PM	PM <sub>10</sub>
Total PE from New and Modified Units	0.9	1.8	2.0	0.8	0.8
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 - PE1, where:

- QNEC = Quarterly Net Emissions Change for each emissions unit, lb/qtr.  
 PE2 = Post Project Potential to Emit for each emissions unit, lb/qtr.  
 PE1 = Pre-Project Potential to Emit for each emissions unit, lb/qtr.

Using the values in Sections VII.C.2 and VII.C.6 in the evaluation above, quarterly PE2 and quarterly PE1 can be calculated as follows:

$$\begin{aligned} \text{PE2}_{\text{quarterly}} &= \text{PE2}_{\text{annual}} \div 4 \text{ quarters/year} \\ &= 1,752 \text{ lb/year} \div 4 \text{ qtr/year} \\ &= 438 \text{ lb NO}_x/\text{qtr} \end{aligned}$$

$$\begin{aligned} \text{PE1}_{\text{quarterly}} &= \text{PE1}_{\text{annual}} \div 4 \text{ quarters/year} \\ &= 0 \text{ lb/year} \div 4 \text{ qtr/year} \\ &= 0 \text{ lb NO}_x/\text{qtr} \end{aligned}$$

Quarterly NEC [QNEC]			
	PE2 (lb/qtr)	PE1 (lb/qtr)	QNEC (lb/qtr)
NO <sub>x</sub>	438	0	438
SO <sub>x</sub>	876	0	876
PM <sub>10</sub>	416	0	416
CO	1,013	0	1,013
VOC	301	0	301

## VIII. COMPLIANCE

### Rule 2201 New and Modified Stationary Source Review Rule

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

##### 1. BACT Applicability

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

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

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

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

As seen in Section VII.C.2 of this evaluation, the applicant is proposing to install a new steam generator with a PE greater than 2 lb/day for NO<sub>x</sub>, SO<sub>x</sub>, PM<sub>10</sub>, CO, and VOC. BACT is triggered for NO<sub>x</sub>, SO<sub>x</sub>, PM<sub>10</sub>, CO, and VOC since the PEs are greater than 2 lbs/day and the SSPE2 for CO is greater than 200,000 lbs/year, as demonstrated in Section VII.C.5 above.

**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.8 above, this project does constitute Federal Major Modification for NO<sub>x</sub> and VOC; therefore BACT is triggered for NO<sub>x</sub> and VOC for all emissions units in the project for which there is an emission increase.

**2. BACT Guideline**

BACT Guideline 1.2.1, applies to oilfield steam generators greater than or equal to 20 MMBtu/hr. [Oilfield Steam Generator (> or = 20 MMBtu/hr)] (See Attachment A)

**3. Top-Down BACT Analysis**

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

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

NO<sub>x</sub>: 7 ppmvd @ 3% O<sub>2</sub>

SO<sub>x</sub>: Fired on PUC quality natural gas, commercial propane, and/or commercial LPG; or gaseous fuel treated to remove 95% by weight of sulfur compounds; or treated such that the sulfur content of all fuel streams combined does not exceed 1 gr of sulfur compounds (as S) per 100 dscf

PM<sub>10</sub>: Fired on PUC quality natural gas, commercial propane, and/or commercial LPG; or gaseous fuel treated to remove 95% by weight of sulfur compounds; or treated such that the sulfur content of all fuel streams combined does not exceed 1 gr of sulfur compounds (as S) per 100 dscf

CO: 25 ppmvd @ 3% O<sub>2</sub>

VOC: Gaseous fuel

## B. Offsets

### 1. Offset Applicability

Pursuant to Rule 2201, offset requirements shall be triggered on a pollutant by pollutant basis and shall be required if the Post Project Stationary Source Potential to Emit (SSPE2) equals to or exceeds the offset threshold levels in Table 4-1 of Rule 2201.

The following table compares the post-project facility-wide annual emissions in order to determine if offsets will be required for this project.

<b>Offset Determination</b>					
	NO <sub>x</sub> (lb/year)	SO <sub>x</sub> (lb/year)	PM <sub>10</sub> (lb/year)	CO (lb/year)	VOC (lb/year)
Post Project SSPE (SSPE2)	> 20,000	> 54,750	> 29,200	> 20,000	> 20,000
Offset Threshold	20,000	54,750	29,200	200,000	20,000
Offsets triggered?	Yes	Yes	Yes	Yes	Yes

### 2. Quantity of Offsets Required

As seen above, the SSPE2 is greater than the offset thresholds for NO<sub>x</sub>, SO<sub>x</sub>, PM<sub>10</sub>, CO, and VOC emissions; therefore offset calculations will be required for this project.

The quantity of offsets in pounds per year 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) = (Σ[PE2 – BE] + ICCE) x DOR, for all new or modified emissions units in the project,

Where,

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

BE = Baseline Emissions, (lb/year)

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

DOR = Distance Offset Ratio, determined pursuant to Section 4.8

BE = Pre-project Potential to Emit for:

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

otherwise,

BE = Historic Actual Emissions (HAE)

There are no increases in cargo carrier emissions; therefore offsets can be determined as follows:

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

#### CO Offset Calculations

CO offsets are triggered by CO emissions in excess of 200,000 lb/year for the facility.

However, pursuant to Section 4.6.1, "Emission Offsets shall not be required for the following: increases in carbon monoxide in attainment areas if 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 (AAQS)."

The Technical Services Section of the San Joaquin Valley Unified Air Pollution Control District performed a CO modeling run, using the EPA AERMOD air dispersion model, to determine if the CO emissions would exceed the State and Federal AAQS. Modeling of the worst case 1 hour and 8 hour CO impacts were performed. These values were added to the worst case ambient concentration (background) measured and compared to the ambient air quality standards.

This modeling demonstrates that the proposed increase in CO emissions will not cause a violation of the CO ambient air quality standards. Therefore, the increase in CO emissions is exempt from offsets pursuant to Section 6.4.1.

**Offset Calculations**

<b>Offset Requirement</b>				
Pollutant	NOx (lb/year)	SOx (lb/year)	PM <sub>10</sub> (lb/year)	VOC (lb/year)
PE2	1,752	3,504	1,664	1,205
BE	0	0	0	0
PE2 – BE	1,752	3,504	1,664	1,205

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

<b>Quarterly Offset Requirement</b>				
Pollutant	1 <sup>st</sup> Qtr (lb/qtr)	2 <sup>nd</sup> Qtr (lb/qtr)	3 <sup>rd</sup> Qtr (lb/qtr)	4 <sup>th</sup> Qtr (lb/qtr)
NOx	438	438	438	438
SOx	876	876	876	876
PM <sub>10</sub>	416	416	416	416
VOC	301	301	301	302

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

<b>Quarterly Offset Requirement x DOR = 1.5</b>				
Pollutant	1 <sup>st</sup> Qtr (lb/qtr)	2 <sup>nd</sup> Qtr (lb/qtr)	3 <sup>rd</sup> Qtr (lb/qtr)	4 <sup>th</sup> Qtr (lb/qtr)
NOx	657	657	657	657
SOx	1,314	1,314	1,314	1,314
PM <sub>10</sub>	624	624	624	624
VOC	452	452	452	452

The applicant has stated that the facility plans to use ERC certificates S-4211-2, N-1237-5, and S-4348-1 to offset the increases in emissions associated with this project. The above certificates have available quarterly credits as follows:

<b>Proposed ERC Certificates</b>				
ERC Certificate #	1 <sup>st</sup> Qtr (lb/qtr)	2 <sup>nd</sup> Qtr (lb/qtr)	3 <sup>rd</sup> Qtr (lb/qtr)	4 <sup>th</sup> Qtr (lb/qtr)
S-4211-2 (NOx)	13,364	14,303	18,022	17,508
N-1237-5 (SOx)	23,884	21,221	14,279	24,460
S-4348-1 (VOC)	0	2,138	3,271	7

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

### Proposed Rule 2201 (offset) Conditions

- Prior to operating equipment under this Authority to Construct, permittee shall surrender NOx emission reduction credits for the following quantity of emissions: 1st quarter – 438 lb, 2nd quarter – 438 lb, 3rd quarter – 438 lb, and fourth quarter – 438 lb. Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 4/21/11). [District Rule 2201]
- Prior to operating equipment under this Authority to Construct, permittee shall surrender SOx emission reduction credits for the following quantity of emissions: 1st quarter – 876 lb, 2nd quarter – 876 lb, 3rd quarter – 876 lb, and fourth quarter – 876 lb. Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 4/21/11). [District Rule 2201]
- Prior to operating equipment under this Authority to Construct, permittee shall surrender PM10 emission reduction credits for the following quantity of emissions: 1st quarter – 416 lb, 2nd quarter – 416 lb, 3rd quarter – 416 lb, and fourth quarter – 416 lb. Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 4/21/11). [District Rule 2201]
- Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter – 301 lb, 2nd quarter – 301 lb, 3rd quarter – 301 lb, and fourth quarter – 301 lb. Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 4/21/11). [District Rule 2201]
- ERC Certificate Numbers S-4211-2, N-1237-5, and S-4348-1 (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]

## **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 VII.C.7 and VII.C.8, this project does constitute a Federal Major Modification for NO<sub>x</sub> and VOC; therefore, public noticing for Federal Major Modification purposes is required.

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

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

**c. Offset Threshold**

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

<b>Offset Threshold</b>				
<b>Pollutant</b>	<b>SSPE1 (lb/year)</b>	<b>SSPE2 (lb/year)</b>	<b>Offset Threshold</b>	<b>Public Notice Required?</b>
NO <sub>x</sub>	> 20,000	> 20,000	20,000 lb/year	No
SO <sub>x</sub>	> 54,750	> 54,750	54,750 lb/year	No
PM <sub>10</sub>	> 29,200	> 29,200	29,200 lb/year	No
CO	> 200,000	> 200,000	200,000 lb/year	No
VOC	> 20,000	> 20,000	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 Stationary Source Increase in Permitted Emissions (SSIPE) of more than 20,000 lb/year of any affected pollutant. According to District policy, the SSIPE is calculated as the Post Project Stationary Source Potential to Emit (SSPE2) minus the Pre-Project Stationary Source Potential to Emit (SSPE1), i.e. SSIPE

= SSPE2 – SSPE1. The SSIPE is compared to the SSIPE Public Notice thresholds in the following table:

<b>Stationary Source Increase in Permitted Emissions [SSIPE] – Public Notice</b>					
<b>Pollutant</b>	<b>Project PE2 (lb/year)</b>	<b>Project PE1 (lb/year)</b>	<b>SSIPE (lb/year)</b>	<b>SSIPE Public Notice Threshold</b>	<b>Public Notice Required?</b>
NO <sub>x</sub>	1,752	0	1,752	20,000 lb/year	No
SO <sub>x</sub>	3,504	0	3,504	20,000 lb/year	No
PM <sub>10</sub>	1,664	0	1,664	20,000 lb/year	No
CO	4,052	0	4,052	20,000 lb/year	No
VOC	1,205	0	1,205	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 for Federal Major Modification for NO<sub>x</sub> and VOC emissions and for Title V significant permit modification. Therefore, public notice documents will be submitted to the California Air Resources Board (CARB), US Environmental Protection Agency (US EPA), and a public notice will be published in a local newspaper of general circulation prior to the issuance of the ATC permits 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.

The DELs for the unit is based on the heat input rating of the steam generator and emission factors.

### Proposed Rule 2201 (DEL) Conditions

- Emission rates from the unit shall not exceed any of the following limits: 7 ppmvd NO<sub>x</sub> @ 3% O<sub>2</sub> or 0.008 lb-NO<sub>x</sub>/MMBtu, 0.016 lb-SO<sub>x</sub>/MMBtu, 0.0076 lb-PM<sub>10</sub>/MMBtu, 25 ppmvd CO @ 3% O<sub>2</sub> or 0.018 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, and 4320]

## **E. Compliance Assurance**

### **1. Source Testing**

This unit is subject to District Rule 4320, *Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters Greater than 5.0 MMBtu/hr*. Source testing requirements, in accordance with District Rule 4320, will be discussed in Section VIII, *District Rule 4320*, of this evaluation.

### **2. Monitoring**

As required by District Rule 4320, *Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters Greater than 5.0 MMBtu/hr*, this unit is subject to monitoring requirements. Monitoring requirements, in accordance with District Rule 4320, will be discussed in Section VIII, *District Rule 4320*, of this evaluation.

### **3. Recordkeeping**

As required by District Rule 4320, *Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters Greater than 5.0 MMBtu/hr*, this unit is subject to recordkeeping requirements. Recordkeeping requirements, in accordance with District Rule 4320, will be discussed in Section VIII, *District Rule 4320*, of this evaluation.

The following permit conditions will be listed on permits as follows:

- Permittee shall maintain records of calculated annual emissions from the unit. [District Rule 2201]
- All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, 4306, and 4320]

### **4. Reporting**

No reporting is required to demonstrate compliance with Rule 2201.

## **F. Ambient Air Quality Analysis**

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.

The proposed location is in an attainment area for NO<sub>x</sub>, CO, and SO<sub>x</sub>. As shown by the AAQA summary sheet the proposed equipment will not cause a violation of an air quality standard for NO<sub>x</sub>, CO, or SO<sub>x</sub>.

The proposed location is in a non-attainment area for the state's PM<sub>10</sub> as well as federal and state PM<sub>2.5</sub> thresholds. The proposed equipment will not cause a violation of an air quality standard for PM<sub>10</sub> and PM<sub>2.5</sub>.

## **G. Compliance Certification**

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

## **H. Alternate Siting Analysis**

Section 4.15.1 of this Rule requires that an analysis of alternative sites, sizes and production processes is required under Section 173 of the Federal Clean Air Act. The applicant is required to prepare an analysis functionally equivalent to the requirements of Division 13, Section 21000 et seq. of the Public Resources Code.

The proposed steam generator represents an expansion at an existing stationary source and cannot be relocated since it is an existing crude oil production operation. Therefore, an alternate location is not viable for this 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**

The prevention of significant deterioration (PSD) program is a construction permitting program for new major stationary sources and major modifications to existing major stationary sources located in areas classified as attainment or in areas that are unclassifiable for any criteria air pollutant.

As demonstrated above, this project is not subject to the requirements of Rule 2410 due to a significant emission increase and 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. Section 3.29 defines a significant permit modification as a "permit amendment that does not qualify as a minor permit modification or administrative amendment."

Section 3.20.5 states that a minor permit modification is a permit modification that does not meet the definition of modification as given in Section 111 or Section 112 of the Federal Clean Air Act. Since this project is a Title I modification (i.e. Federal Major Modification), the proposed project is considered to be a modification under the Federal Clean Air Act. As a result, the proposed project constitutes a Significant Modification to the Title V Permit pursuant to Section 3.29.

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

### **Rule 4001 New Source Performance Standards**

#### **40 CFR Part 60 Subpart Dc Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units**

This rule incorporates NSPS from Part 60, Chapter 1, Title 40, Code of Federal Regulations (CFR); and applies to all new sources of air pollution and modifications of existing sources of air pollution listed in 40 CFR Part 60. 40 CFR Part 60, Subpart Dc applies to Small Industrial-Commercial-Industrial Steam Generators between 10 MMBtu/hr and 100 MMBtu/hr (post-6/9/89 construction, modification or, reconstruction). Subpart Dc has standards for SO<sub>x</sub> and PM<sub>10</sub>. The 25 MMBtu/hr steam generator is subject to Subpart Dc requirements.

#### **60.42c – Standards for Sulfur Dioxide**

Since coal is not combusted by the steam generator in this project, the requirements of this section are not applicable.

#### **60.43c – Standards for Particulate Matter**

The steam generator is not fired on coal, combusts mixtures of coal with other fuels, combusts wood, combusts mixture of wood with other fuels, or oil; therefore it will not be subject to the requirements of this section.

**60.44c – Compliance and Performance Tests Methods and Procedures for Sulfur Dioxide.**

Since the steam generator in this project is not subject to the sulfur dioxide requirements of this subpart, no testing to show compliance is required. Therefore, the requirements of this section are not applicable to the steam generator in this project.

**60.45c – Compliance and Performance Test Methods and Procedures for Particulate Matter**

Since the steam generator in this project are not subject to the particulate matter requirements of this subpart, no testing to show compliance is required. Therefore, the requirements of this section are not applicable to the steam generator in this project.

**60.46c – Emission Monitoring for Sulfur Dioxide**

Since the steam generator in this project is not subject to the sulfur dioxide requirements of this subpart, no monitoring is required. Therefore, the requirements of this section are not applicable to the steam generator in this project.

**60.47c – Emission Monitoring for Particulate Matter**

Since the steam generator in this project is not subject to the particulate matter requirements of this subpart, no monitoring is required. Therefore, the requirements of this section are not applicable to the steam generator in this project.

**60.48c – Reporting and Recordingkeeping Requirements**

Section 60.48c (a) states that the owner or operator of each affected facility shall submit notification of the date of construction or reconstruction and actual startup, as provided by §60.7 of this part. This notification shall include:

- (1) The design heat input capacity of the affected facility and identification of fuels to be combusted in the affected facility.

The design heat input capacity and type of fuel combusted at the facility will be listed on the unit's equipment description. No conditions are required to show compliance with this requirement.

- (2) If applicable, a copy of any Federally enforceable requirement that limits the annual capacity factor for any fuel mixture of fuels under §60.42c or §40.43c.

This requirement is not applicable since the unit is not subject to §60.42c or §40.43c.

- (3) The annual capacity factor at which the owner or operator anticipates operating the affected facility based on all fuels fired and based on each individual fuel fired.

The facility has not proposed an annual capacity factor; therefore one will not be required.

- (4) Notification if an emerging technology will be used for controlling SO<sub>2</sub> emissions. The Administrator will examine the description of the control device and will determine whether the technology qualifies as an emerging technology. In making this determination, the Administrator may require the owner or operator of the affected facility to submit additional information concerning the control device. The affected facility is subject to the provisions of §60.42c(a) or (b)(1), unless and until this determination is made by the Administrator

This requirement is not applicable since the unit will not be equipped with an emerging technology used to control SO<sub>2</sub> emissions.

District Rule 4001, §3.0 defines the Administrator as the APCO of the District. The following condition ensures compliance:

- Permittee shall submit notification to the District of the date of construction and actual startup. Notifications shall be postmarked no later than 30 days after construction and 15 days after actual startup. The notifications shall include the design heat input and identification of fuels for this permit unit. [40 CFR 60.48c (a)]

Section 60.48c (g) states that the owner or operator of each affected facility shall record and maintain records of the amounts of each fuel combusted during each day. The following conditions will be added to the permit to ensure compliance with this section.

- A non-resettable, totalizing mass or volumetric fuel flow meter to measure the amount of fuel combusted in the unit shall be installed, utilized and maintained. [District Rules 2201 and 40 CFR 60.48c (g)]
- Permittee shall maintain daily records of the type and quantity of fuel combusted by the steam generator. [District Rule 2201 and 40 CFR 60.48c (g)]

Section 60.48c (i) states that all records required under this section shall be maintained by the owner or operator of the affected facility for a period of two years following the date of such record. District Rule 4320 requires that records be kept for five years.

Compliance is ensured with the following condition:

- All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, 4306, 4320, and 40 CFR 60.48c (i)]

Therefore, compliance with the requirements of this rule is expected.

### **Rule 4101 Visible Emissions**

Per Section 5.0, no person shall discharge into the atmosphere emissions of any air contaminant aggregating more than 3 minutes in any hour which is as dark as or darker than Ringelmann 1 (or 20% opacity). The following condition will be placed on the permits to ensure compliance with the opacity limit.

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

Therefore, compliance with the requirements of this rule is expected.

### **Rule 4102 Nuisance**

Section 4.0 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 Analysis**

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 D), 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:

<b>HRA Summary</b>		
<b>Unit</b>	<b>Cancer Risk</b>	<b>T-BACT Required</b>
S-1326-457-0	0.0075 per million	No
S-1327-219-0	0.00438 per million	No
S-8454-18-0	0.0163 per million	No
S-8576-1-0	0.00596 per million	No

### Discussion of T-BACT

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

District policy APR 1905 also specifies that the increase in emissions associated with a proposed new source or modification not have acute or chronic indices, or a cancer risk greater than the District's significance levels (i.e. acute and/or chronic indices greater than 1 and a cancer risk greater than 10 in a million). As outlined by the HRA Summary in Attachment D of this report, the emissions increases for this project was determined to be less than significant.

Therefore, compliance with the requirements of this rule 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: 8,578 dscf/MMBtu at 60 °F

PM<sub>10</sub> Emission Factor: 0.0076 lb-PM<sub>10</sub>/MMBtu

Percentage of PM as PM<sub>10</sub> in Exhaust: 100%

Exhaust Oxygen (O<sub>2</sub>) Concentration: 3%

$$\text{Excess Air Correction to F Factor} = \frac{20.9}{(20.9 - 3)} = 1.17$$

$$GL = \left( \frac{0.0076 \text{ lb-PM}}{\text{MMBtu}} \times \frac{7,000 \text{ grain}}{\text{lb-PM}} \right) / \left( \frac{8,578 \text{ ft}^3}{\text{MMBtu}} \times 1.17 \right)$$

$$GL = 0.005 \text{ grain/dscf} < 0.1 \text{ grain/dscf}$$

Therefore, compliance with the requirements of this rule is expected.

### Rule 4301 Fuel Burning Equipment

Rule 4301 limits air contaminant emissions from fuel burning equipment as defined in the rule. Section 3.1 defines fuel burning equipment as "any furnace, boiler, apparatus, stack, and all appurtenances thereto, used in the process of burning fuel for the primary purpose of producing heat or power by indirect heat transfer".

Section 5.0 gives the requirements of the rule.

A person shall not discharge into the atmosphere combustion contaminants exceeding in concentration at the point of discharge, 0.1 grain per cubic foot of gas calculated to 12% of carbon dioxide at dry standard conditions.

A person shall not build, erect, install or expand any non-mobile fuel burning equipment unit unless the discharge into the atmosphere of contaminants will not and does not exceed any one or more of the following rates:

- 200 pound per hour of sulfur compounds, calculated as sulfur dioxide (SO<sub>2</sub>)
- 140 pounds per hour of nitrogen oxides, calculated as nitrogen dioxide (NO<sub>2</sub>)
- Ten pounds per hour of combustion contaminants as defined in Rule 1020 and derived from the fuel.

<b>District Rule 4301 Limits</b>			
	<b>NO<sub>2</sub></b>	<b>Total PM</b>	<b>SO<sub>2</sub></b>
	0.20	0.19	0.40
<b>Rule Limit (lb/hr)</b>	140	10	200

The particulate emissions from the steam generator will not exceed 0.1 gr/dscf at 12% CO<sub>2</sub> or 10 lb/hr. Further, the emissions of SO<sub>x</sub> and NO<sub>x</sub> will not exceed 200 lb/hr or 140 lb/hr, respectively.

Therefore, compliance with the requirements of this rule is expected.

**Rule 4305 Boilers, Steam Generators, And Process Heaters – Phase 2**

The steam generator is subject to District Rule 4305, *Boilers, Steam Generators and Process Heaters – Phase 2*. In addition, the steam generator is also subject to District Rule 4306, *Boilers, Steam Generators and Process Heaters – Phase 3* and District Rule 4320, *Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters Greater than 5.0 MMBtu/hr*.

Since emissions limits of District Rule 4320 and all other requirements are equivalent or more stringent than District Rule 4305 requirements, compliance with District Rule 4320 requirements will satisfy requirements of District Rule 4305.

**Rule 4306 Boilers, Steam Generators, And Process Heaters – Phase 3**

The steam generator is subject to District Rule 4306, *Boilers, Steam Generators and Process Heaters – Phase 3*. In addition, the steam generator is also subject to District Rule 4320, *Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters Greater than 5.0 MMBtu/hr*.

Since emissions limits of District Rule 4320 and all other requirements are equivalent or more stringent than District Rule 4306 requirements, compliance with District Rule 4320 requirements will satisfy requirements of District Rule 4306.

**Rule 4320    Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters Greater than 5.0 MMBtu/hr**

The steam generator is subject to District Rule 4320 requirements pursuant to Section 2.0 of District Rule 4320.

**Section 5.2, NO<sub>x</sub> and CO Emissions Limits**

Section 5.2.1 states that on and after the indicated Compliance Deadline, units shall not be operated in a manner which exceeds the applicable NO<sub>x</sub> limit specified in Table 1 of this rule, shown below. On and after October 1, 2008, units shall not be operated in a manner which exceeds a carbon dioxide (CO) emissions limit of 400 ppmv.

The steam generator is rated greater than 20 MMBtu/hr; thus, the applicable emission limit category is Section 5.2, Table 1, Category C, from District Rule 4320.

<b>Rule 4320 NO<sub>x</sub> Emission Limits</b>	
C. Oilfield Steam Generators	NO <sub>x</sub> Limit
Units with a total rated heat input > 20 MMBtu/hr	a) Standard Schedule 7 ppmv or 0.008 lb/MMBtu; or
	b) Staged Enhanced Schedule Initial Limit 9 ppmv or 0.011 lb/MMBtu; and ----- Final Limit 5 ppmv or 0.0062 lb/MMBtu

The steam generator will be limited to 7 ppmvd NO<sub>x</sub> and 25 ppmvd CO, all corrected to 3% O<sub>2</sub>. Thus, compliance with the District Rule 4320 NO<sub>x</sub> and CO emission limits is expected.

**Section 5.3, Annual Fee Calculation**

Annual Fees are required if an emissions unit will not be meeting the emission limits in Section 5.2 of this rule. Since the proposed steam generator will meet the emissions limits of Section 5.2, the annual fee requirements are not applicable.

**Section 5.4, Particulate Matter Control Requirements**

Section 5.4.1 of this rule requires the operator to comply with one of the following requirements:

1. Fire the steam generator exclusively on PUC-quality natural gas, commercial propane, butane, or liquefied petroleum gas, or a combination of such gases;
2. Limit fuel sulfur content to no more than five grains of total sulfur per one hundred (100) standard cubic feet;
3. Install and properly operate an emission control system that reduces SO<sub>2</sub> emissions by at least 95% by weight; or limit exhaust SO<sub>2</sub> to less than or equal to 9 ppmv corrected to 3.0% O<sub>2</sub>;

The steam generator will be fired on natural gas//TEOR gas/field gas/commercial propane. The following condition will be listed on the permits to ensure compliance:

- Unit shall be fired only on LPG or propane, regulated natural gas, TEOR gas or waste/field gas, or a mixture of any of these fuels, with no more than 1.0 gr-S/100 scf, or waste/field gas treated to remove at least 95% by weight of sulfur compounds. [District Rule 2201 and 4320]

Therefore, compliance with Section 5.4 of District Rule 4320 is expected.

### **Section 5.5, Low Use**

The steam generator annual heat input will exceed the 1.8 billion Btu heat input per calendar year criteria limit addressed by this section. Thus, the requirements of Section 5.5 are not applicable.

### **Section 5.6, Startup and Shutdown Provisions**

Section 5.6 states that on and after the full compliance deadline in Section 5.0, the applicable emission limits of Sections 5.2 Table 1 and 5.5.2 shall not apply during start-up or shutdown provided an operator complies with the requirements specified in Sections 5.6.1 through 5.6.5.

The facility has requested startup and shutdown provisions for this steam generator. The following condition will be listed on the permits to ensure compliance:

- Duration of start-up and shutdown shall not exceed 2 hours each per occurrence. [District Rules 4305, 4306 and 4320]

### **Section 5.7, Monitoring Provisions**

Section 5.7.1 requires that permit units subject to District Rule 4320, Section 5.2 emissions limits shall either install and maintain Continuous Emission Monitoring (CEM) equipment for NO<sub>x</sub>, CO and O<sub>2</sub>, or install and maintain APCO-approved alternate monitoring.

For the steam generator in this project, the facility will use pre-approved alternate monitoring scheme A (pursuant to District Policy SSP-1105), which requires that monitoring of NO<sub>x</sub>, CO, and O<sub>2</sub> exhaust concentrations shall be conducted at least once per month (in which a source test is not performed) using a portable analyzer. The following conditions will be incorporated into the permit in order to ensure compliance with the requirements of the proposed alternate monitoring plan:

- The permittee shall monitor and record the stack concentration of NO<sub>x</sub>, CO, and O<sub>2</sub> at least once every month (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 be performed within five days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4102, 4305, 4306, and 4320]
- If the NO<sub>x</sub> or CO concentrations, as measured by the portable analyzer, exceed the permitted levels, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than one hour of operation after detection. If the portable analyzer or the ammonia monitoring equipment continue to show emission limit violations after 1 hour of operation following detection, the permittee shall notify the District within the following one 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 the performing the notification and testing required by this condition. [District Rules 4102, 4305, 4306, and 4320]
- All NO<sub>x</sub>, CO, and O<sub>2</sub> 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 NO<sub>x</sub>, CO and O<sub>2</sub> 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 readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 4102, 4305, 4306, and 4320]
- The permittee shall maintain records of: (1) the date and time of NO<sub>x</sub>, CO, and O<sub>2</sub> measurements, (2) the O<sub>2</sub> concentration in percent by volume and the measured NO<sub>x</sub> and CO concentrations corrected to 3% O<sub>2</sub>, (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 at or below the acceptable levels. [District Rules 4102, 4305, 4306, and 4320]

Section 5.7.6 outlines requirements for monitoring SO<sub>x</sub> emissions. For units that are complying with Section 5.4.1.1 or 5.4.1.2 of this Rule, the facility must provide an annual fuel analysis to the District unless a more frequent sampling and reporting period is included in the Permit to Operate. The steam generators in this project are complying using Sections 5.4.1.1 or 5.4.1.2.

These units are fired on natural gas//TEOR gas/field gas/commerical propane. Therefore, the following requirement will be included on the permits to comply with the SO<sub>x</sub> emissions monitoring requirement:

- If the unit is fired on PUC-regulated natural gas, valid purchase contracts, supplier certifications, tariff sheets, or transportation contracts may be used to satisfy the fuel sulfur content analysis, provided they establish the fuel sulfur concentration and higher heating value. [District Rule 4320]
- If the unit is not fired on PUC-regulated natural gas, the sulfur content of each fuel source shall be tested weekly except that if compliance with the fuel sulfur content limit has been demonstrated for 8 consecutive weeks for a fuel source, then the testing frequency shall be quarterly. If a test shows noncompliance with the sulfur content requirement, the source must return to weekly testing until eight consecutive weeks show compliance. [District Rules 2201 and 4320]
- If the unit is not fired on PUC-regulated natural gas and compliance is achieved through fuel sulfur content limitations, then the sulfur content of the fuel shall be determined by testing sulfur content at a location after all fuel sources are combined prior to incineration, or by performing mass balance calculations based on monitoring the sulfur content and volume of each fuel source. The sulfur content of the fuel shall be determined using the test methods referenced in this permit. [District Rule 4320]
- If the unit is not fired on PUC-regulated natural gas, then the sulfur content of the natural gas being fired in the unit shall be determined using ASTM method D 1072, D 3031, D 4084 or D 3246. [District Rule 4320]
- Operators complying with Sections 5.4.1.1 or 5.4.1.2 shall provide an annual fuel analysis to the District upon request. [District Rule 4320]

## **Section 5.8 Compliance Determination**

Section 5.8.1 requires that the operator of any unit have the option of complying with either the applicable heat input (lb/MMBtu) emission limits or the concentration (ppmv) emission limits specified in Section 5.2. The emission limits selected to demonstrate compliance shall be specified in the source test proposal pursuant to Rule 1081 (Source Sampling). Therefore, the following condition will be listed on the permits to ensure compliance:

- The source plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306 and 4320]

Section 5.8.2 requires that 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. Unless otherwise 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. Therefore, the following condition will be listed on the permits to ensure compliance:

- 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. Unless otherwise 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. For the purposes of permittee-performed alternate monitoring, emissions measurements may be performed at any time after the unit reaches conditions representative of normal operation. [District Rules 4305, 4306 and 4320]

Section 5.8.4 requires that for emissions monitoring pursuant to Sections 5.7.1 and 6.3.1 using a portable NO<sub>x</sub> analyzer as part of an APCO approved Alternate Emissions Monitoring System, emission readings 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. Therefore, the following condition will be listed on the permits to ensure compliance:

- 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 4305, 4306 and 4320]

Section 5.8.5 requires that for emissions source testing performed pursuant to Section 6.3.1 for the purpose of determining compliance with an applicable standard or numerical limitation of this rule, the arithmetic average of three (3) 30-consecutive-minute test runs shall apply. If two (2) of three (3) runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. Therefore, the following permit condition will be listed on the permits to ensure compliance:

- 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 4305, 4306 and 4320]

## **Section 6.1, Recordkeeping**

Section 6.1 requires that the records required by Sections 6.1.1 through 6.1.5 shall be maintained for five calendar years and shall be made available to the APCO upon request. Failure to maintain records or information contained in the records that demonstrate non-compliance with the applicable requirements of this rule shall constitute a violation of this rule.

The following condition will be listed on the permit to ensure compliance:

- All records shall be maintained and retained on-site for a minimum of five years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, 4306, 4320, and 40 CFR 60.48c (i)]

Section 6.1.2 requires that the operator of a unit subject to Section 5.5 shall record the amount of fuel use at least on a monthly basis. Since the steam generators in this project are not subject to the requirements listed in Section 5.5, Section 6.1.2 requirements are not applicable.

Section 6.1.3 requires that the operator of a unit subject to Section 5.5.1 or 6.3.1 shall maintain records to verify that the required tune-up and the required monitoring of the operational characteristics have been performed. The steam generators in this project are not subject to Sections 5.5.1 or 6.3.1. Therefore, the requirements of this section do not apply.

Section 6.1.4 requires that the operator of a unit with startup or shutdown provisions keep records of the duration of the startup or shutdowns. The following condition will be listed on the permits to ensure compliance:

- Permittee shall maintain records of duration of each start-up and shutdown. [District Rule 4320]

Section 6.1.5 requires that the operator of a unit fired on liquid fuel during PUC-quality natural gas curtailment periods record the sulfur content of the fuel, amount of fuel used, and duration of the natural gas curtailment period. The steam generators in this project are not fired on liquid fuels. Therefore, the requirements of this section do not apply.

## **Section 6.2, Test Methods**

Section 6.2 identifies the following test methods as District-approved source testing methods for the pollutants listed:

Pollutant	Units	Test Method Required
NO <sub>x</sub>	ppmv	EPA Method 7E or ARB Method 100
NO <sub>x</sub>	lb/MMBtu	EPA Method 19
CO	ppmv	EPA Method 10 or ARB Method 100
Stack Gas O <sub>2</sub>	%	EPA Method 3 or 3A, or ARB Method 100
Stack Gas Velocities	ft/min	EPA Method 2 or 19
Stack Gas Moisture Content	%	EPA Method 4

The following condition will be listed on the permits to ensure compliance:

- The following test methods shall be used: NO<sub>x</sub> (ppmv) - EPA Method 7E or ARB Method 100, NO<sub>x</sub> (lb/MMBtu) - EPA Method 19; CO (ppmv) - EPA Method 10 or ARB Method 100; Stack gas oxygen (O<sub>2</sub>) - EPA Method 3 or 3A or ARB Method 100; stack gas velocities - EPA Method 2; Stack gas moisture content - EPA Method 4; SO<sub>x</sub> - EPA Method 6C or 8 or ARB Method 100; fuel gas sulfur as H<sub>2</sub>S content - EPA Method 11 or 15; and fuel hhv (MMBtu) -ASTM D 1826 or D 1945 in conjunction with ASTM D 3588. [District Rule 1081, 4305, 4306, 4320, and 4351]

### Section 6.3, Compliance Testing

Section 6.3.1 requires that this unit be tested to determine compliance with the applicable requirements of section 5.2 not less than once every 12 months. Upon demonstrating compliance on two consecutive compliance source tests, the source test may be deferred for up to thirty-six months. The following condition will be listed on the permits to ensure compliance:

- Source testing to measure NO<sub>x</sub> and CO emissions from this unit shall be conducted at least once every twelve months. After demonstrating compliance on two consecutive annual source tests, the unit shall be tested not less than once every 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 months. [District Rules 2201, 4305, 4306, and 4320]

### Conclusion

Compliance with District Rule 4320 requirements is expected.

**Rule 4351 Boilers, Steam Generators, And Process Heaters - Phase 1**

This rule applies to boilers, steam generators, and process heaters at NO<sub>x</sub> Major Sources that are not located west of Interstate 5 in Fresno, Kings, or Kern counties. If applicable, the emission limits, monitoring provisions, and testing requirements of this rule are satisfied when the unit is operated in compliance with Rule 4320.

Therefore, compliance with the requirements of this rule is expected.

**Rule 4405 Oxides of Nitrogen Emissions from Existing Steam Generators Used in Thermally Enhanced Oil Recovery - Central/Western Kern County Fields**

This rule limits NO<sub>x</sub> emissions from existing steam generators used in thermally enhanced oil recovery operations prior to August 22, 1986. The NO<sub>x</sub> emissions limits of the steam generators in this project are well below the NO<sub>x</sub> limit of 0.14 lb/MMBtu allowed by this rule for natural gas-fired units.

Therefore, compliance with the requirements of this rule is expected.

**Rule 4406 - Sulfur Compounds from Oil-Field Steam Generators - Kern County**

This rule limits sulfur compound emissions from existing steam generators used in oil field operations prior to September 12, 1979. The limit imposed by the rule is 0.11 lb S/MMBtu, either individually or on average basis for all of an operating steam generators subject to the rule requirements. The proposed SO<sub>2</sub> emissions factor, 0.00285 lb-SO<sub>x</sub>/MMBtu (0.001425 lb-S/MMBtu), is in compliance with the rule.

Therefore, compliance with the requirements of this rule is expected.

**Rule 4801 Sulfur Compounds**

A person shall not discharge into the atmosphere sulfur compounds, which would exist as a liquid or gas at standard conditions, exceeding in concentration at the point of discharge: 0.2 % by volume calculated as SO<sub>2</sub>, on a dry basis averaged over 15 consecutive minutes.

Using the ideal gas equation and the emission factors presented in Section VII, the sulfur compound emissions are calculated as follows:

$$\text{Volume SO}_2 = \frac{nRT}{P}$$

With:

N = moles SO<sub>2</sub>

T (Standard Temperature) = 60°F = 520°R

P (Standard Pressure) = 14.7 psi

R (Universal Gas Constant) =  $\frac{10.73 \text{ psi} \cdot \text{ft}^3}{\text{lb} \cdot \text{mol} \cdot ^\circ\text{R}}$

$$\frac{0.016 \text{ lb} - \text{SO}_x}{\text{MMBtu}} \times \frac{\text{MMBtu}}{8,578 \text{ dscf}} \times \frac{1 \text{ lb} \cdot \text{mol}}{64 \text{ lb}} \times \frac{10.73 \text{ psi} \cdot \text{ft}^3}{\text{lb} \cdot \text{mol} \cdot ^\circ\text{R}} \times \frac{520^\circ\text{R}}{14.7 \text{ psi}} \times \frac{1,000,000 \cdot \text{parts}}{\text{million}} = 11.1 \frac{\text{parts}}{\text{million}}$$

$$\text{Sulfur Concentration} = 11.1 \frac{\text{parts}}{\text{million}} < 2,000 \text{ ppmv (or 0.2\%)} < 2,000 \text{ ppmv (or 0.2\%)}$$

Therefore, compliance with the requirements of this rule is expected.

### California Environmental Quality Act (CEQA)

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

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

### Greenhouse Gas (GHG) Significance Determination

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

On December 17, 2009, the District's Governing Board adopted a policy, APR 2005, Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency, for addressing GHG emission impacts

when the District is Lead Agency under CEQA and approved the District's guidance document for use by other agencies when addressing GHG Impacts as lead agencies under CEQA. Under this policy, the District's determination of significance of project-specific GHG emissions is founded on the principal that projects with GHG emission reductions consistent with AB 32 emission reduction targets are considered to have a less than significant impact on global climate change. Consistent with District Policy 2005, projects complying with an approved GHG emission reduction plan or GHG mitigation program, which avoids or substantially reduces GHG emissions within the geographic area in which the project is located, would be determined to have a less than significant individual and cumulative impact for GHG emission.

The California Air Resources Board (ARB) adopted a Cap-and-Trade regulation as part one of the strategies identified for AB 32. This Cap-and-Trade regulation is a statewide plan, supported by a CEQA compliant environmental review document, aimed at reducing or mitigating GHG emissions from targeted industries. Facilities subject to the Cap-and-Trade regulation are subject to an industry-wide cap on overall GHG emissions. Any growth in emissions must be accounted for under that cap such that a corresponding and equivalent reduction in emissions must occur to allow any increase. Further, the cap decreases over time, resulting in an overall decrease in GHG emissions.

Under District policy APR 2025, CEQA Determinations of Significance for Projects Subject to ARB's GHG Cap-and-Trade Regulation, the District finds that the Cap-and-Trade is a regulation plan approved by ARB, consistent with AB32 emission reduction targets, and supported by a CEQA compliant environmental review document. As such, consistent with District Policy 2005, projects complying with Cap-and-Trade requirements are determined to have a less than significant individual and cumulative impact for GHG emissions.

These facilities are subject to the Cap-and-Trade regulation. Therefore, as discussed above, consistent with District Policies APR 2005 and APR 2025, the District concludes that the GHG emissions increases associated with this project would have a less than significant individual and cumulative impact on global climate change.

### **District CEQA Findings**

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

have the potential for causing a significant effect on the environment (CEQA Guidelines §15061(b)(3)).

#### **IX. RECOMMENDATION**

Compliance with all applicable rules and regulations is expected. Pending a successful NSR Public Noticing period, issue Authority to Construct permits S-1326-457-0, S-1327-219-0, S-8454-18-0, and S-8567-1-0 subject to the permit conditions on the attached draft Authority to Construct permits in Attachment E.

#### **X. BILLING INFORMATION**

Since there is only one steam generator listed on multiple permits, the annual permit fee will be billed to only one permit.

<b>Annual Permit Fees</b>			
<b>Permit Number</b>	<b>Fee Schedule</b>	<b>Fee Description</b>	<b>Annual Fee</b>
S-1326-457-0	999-99	25 MMBtu/hr	N/A
S-1327-219-0	3020-02-H	25 MMBtu/hr	\$1,030
S-8454-18-0	999-99	25 MMBtu/hr	N/A
S-8567-1-0	999-99	25 MMBtu/hr	N/A

#### **Attachments**

- A BACT Guideline 1.2.1 and Top Down BACT Analysis
- B Compliance Certification
- C Certificate of Conformity
- D Health Risk Assessment Analysis
- E Draft Authority to Construct Permits

## **ATTACHMENT A**

### **BACT Guideline 1.2.1 and Top Down BACT Analysis**

San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.2.1\***

Last Update 3/24/2014

**Oilfield Steam Generator (> or =20 MMBtu/hr)**

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC	Gaseous fuel		
SOx	Fired on PUC quality natural gas, commercial propane, and/or commercial LPG; or gaseous fuel treated to remove 95% by weight of sulfur compounds; or treated such that the sulfur content of all fuel streams combined does not exceed 1 gr of sulfur compounds (as S) per 100 dscf; or use of a continuously operating SO2 scrubber and either achieve 95% by weight control of sulfur compounds or achieve an emission rate of 9 ppmvd SO2 @ 3% O2		
PM10	Fired on PUC quality natural gas, commercial propane, and/or commercial LPG; or gaseous fuel treated to remove 95% by weight of sulfur compounds; or treated such that the sulfur content of all fuel streams combined does not exceed 1 gr of sulfur compounds (as S) per 100 dscf; or use of a continuously operating SO2 scrubber and either achieve 95% by weight control of sulfur compounds or achieving an emission rate of 9 ppmvd SO2 @ 3% O2		
NOx	<ul style="list-style-type: none"> <li>•Units rated 85 MMBtu/hr and fired solely on PUC quality natural gas: 6 ppmvd @ 3% O2; or</li> <li>•Units firing on ≥50% PUC quality natural gas; commercial propane; and/or LPG: 7 ppmvd @ 3% O2, except units rated 85 MMBtu/hr and fired solely on PUC quality natural gas; or</li> <li>•Units firing on &lt;50% PUC quality natural gas; commercial propane; and/or LPG: 9 ppmvd @ 3% O2</li> </ul>	5 ppmvd @ 3% O2	
CO	25 ppmvd @ 3% O2		

## Top Down BACT Analysis for Steam Generator

For the steam generator, BACT is required for NO<sub>x</sub>, SO<sub>x</sub>, PM<sub>10</sub>, CO, and VOC.

### Top-Down BACT Analysis for NO<sub>x</sub> Emissions

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

From the SJVUAPCD BACT Clearinghouse, Guideline 1.2.1, Oilfield Steam Generator (> or = 20 MMBtu/hr, 1<sup>st</sup> quarter 2015, identifies BACT for NO<sub>x</sub> emissions as follows:

Pollutant	Achieved in Practice or contained in SIP	Technologically Feasible	Alternate Basic Equipment
NO <sub>x</sub>	<ul style="list-style-type: none"> <li>Units rated 85 MMBtu/hr and fired solely on PUC quality natural gas: 6 ppmvd @ 3% O<sub>2</sub>; or</li> <li>Units firing on ≥ 50% PUC quality natural gas; commercial propane; and/or LPG: 7 ppmvd @ 3% O<sub>2</sub>, except units rated 85 MMBtu/hr and fired solely on PUC quality natural gas; or</li> <li>Units firing on &lt; 50% PUC quality natural gas; commercial propane; and/or LPG: 9 ppmvd @ 3% O<sub>2</sub></li> </ul>	5 ppmvd @ 3% O <sub>2</sub>	

#### Step 2 - Eliminate Technologically Infeasible Options

None of the above listed technologies are technologically infeasible.

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

- 5 ppmvd @ 3% O<sub>2</sub> – Technologically Feasible
- 7 ppmvd @ 3% O<sub>2</sub> – Achieved in Practice

#### Step 4 - Cost Effectiveness Analysis

The applicant has proposed to limit the NO<sub>x</sub> emissions of the steam generator in this project to 7 ppmv @ 3% O<sub>2</sub>; therefore a cost effective analysis is required.

## SCR Emission Reductions

### **Assumptions:**

- District standard emissions is the NOx emission rate of 7 ppmv @ 3% O2 (0.008 lb/MMBtu) in accordance with Rule 4320.
- Unit's maximum emissions are defined by the burner size multiplied by the emissions rate and a maximum annual operating schedule of 8,760 hours.

### SCR Capital Cost

Obtained from PCL Industrial Services, Inc for project S-1111824: \$745,000.00 (includes all purchased equipment, taxes, freight and installation of SCR for an 85 MMBtu/hr unit).

This cost will be adjusted to reflect the expected cost for a 25 MMBtu/hr capacity steam generator using the "six-tenths" method. This cost scaling method is typically applied to costs for the same type of equipment (i.e., steam generators) utilized in a similar process or operation (i.e., steam generating) with a different capacity. The scaled cost is calculated as follows:

$$\begin{aligned}\text{Cost Adjustment Factor} &= (\text{Capacity}_{\text{New}}/\text{Capacity}_{\text{Old}})^{0.60} \\ &= [(25 \text{ MMBtu/hr})/(85 \text{ MMBtu/hr})]^{0.60} \\ &= 0.48\end{aligned}$$

$$\text{Adjusted SCR Cost} = (\$745,000)(0.48) = \$357,600$$

### **Equivalent Annual Capital Cost**

$$A = (P) \left[ \frac{(i)(1+i)^n}{(1+i)^n - 1} \right] \text{ where,}$$

- A: Equivalent annual capital cost of the control equipment  
P: Present value of the control equipment  
i: Interest rate (District policy is to use 10%)  
n: Equipment life (District policy is to use 10 years)

$$\begin{aligned}A &= (\$357,600)[(0.1)(1+0.1)^{10}]/[(1+0.1)^{10} - 1] \\ &= \$58,198\end{aligned}$$

**Total Annualized Cost = \$58,198/year**

### **Emission Calculations**

District Std NO<sub>x</sub> Emissions = 25 MMBtu/hr x 0.008 lb/MMBtu x 8,760 hr/yr  
= 1,752 lb/year

Technologically Feasible NO<sub>x</sub> Emissions = 25 MMBtu/hr x 0.006 lb/MMBtu x 8,760 hr/yr  
= 1,314 lb/yr

### **NO<sub>x</sub> reduction due to SCR**

Total reduction = Emissions<sub>(7 ppmv)</sub> – Emissions<sub>(5 ppmv)</sub>  
Total reduction = 1,752 lb/year – 1,314 lb/year  
Total reduction = 438 lb/year = 0.219 ton/year

### **Cost Effectiveness**

Cost effectiveness = \$58,198/0.219 ton  
Cost effectiveness = \$265,744/ton

The cost effectiveness is greater than the \$24,500/ton cost effectiveness threshold specified in the District BACT policy. Therefore, the use of SCR with ammonia injection is not cost effective and is not required as BACT.

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

BACT for NO<sub>x</sub> emissions from the oilfield steam generator is 7 ppmvd @ 3% O<sub>2</sub>. The applicant has proposed to install a steam generator with a NO<sub>x</sub> limit of 7 ppmvd @ 3% O<sub>2</sub>; therefore, BACT for NO<sub>x</sub> emissions is satisfied.

## Top Down BACT Analysis for SO<sub>x</sub> and PM<sub>10</sub> Emissions

### Step 1 - Identify all control technologies

From the SJVUAPCD BACT Clearinghouse, Guidellne 1.2.1, Oilfield Steam Generator (> or = 20 MMBtu/hr, 1<sup>st</sup> quarter 2015, identifies BACT for SO<sub>x</sub> and PM<sub>10</sub> emissions as follows:

Pollutant	Achieved in Practice or contained in SIP	Technologically Feasible	Alternate Basic Equipment
SO <sub>x</sub>	Fired on PUC quality natural gas, commercial propane, and/or commercial LPG; or gaseous fuel treated to remove 95% by weight of sulfur compounds; or treated such that the sulfur content of all fuel streams combined does not exceed 1 gr of sulfur compounds (as S) per 100 dscf; or use of a continuously operating SO <sub>2</sub> scrubber and either achieve 95% by weight control of sulfur compounds or achieve an emission rate of 9 ppmvd SO <sub>2</sub> @ 3% O <sub>2</sub>		
PM <sub>10</sub>	Fired on PUC quality natural gas, commercial propane, and/or commercial LPG; or gaseous fuel treated to remove 95% by weight of sulfur compounds; or treated such that the sulfur content of all fuel streams combined does not exceed 1 gr of sulfur compounds (as S) per 100 dscf; or use of a continuously operating SO <sub>2</sub> scrubber and either achieve 95% by weight control of sulfur compounds or achieve an emission rate of 9 ppmvd SO <sub>2</sub> @ 3% O <sub>2</sub>		

### Step 2 - Eliminate Technologically Infeasible Options

All control options are technologically feasible.

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

1. Fired on PUC quality natural gas, commercial propane, and/or commercial LPG; or gaseous fuel treated to remove 95% by weight of sulfur compounds; or treated such that the sulfur content of all fuel streams combined does not exceed 1 gr of sulfur compounds (as S) per 100 dscf; or use of a continuously operating SO<sub>2</sub> scrubber and either achieve 95% by weight control of sulfur compounds or achieve an emission rate of 9 ppmvd SO<sub>2</sub> @ 3% O<sub>2</sub>. (Achieved in Practice)

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

The applicant has proposed to fire on PUC quality natural gas, commercial propane, and/or commercial LPG; or gaseous fuel treated to remove 95% by weight of sulfur compounds; or treated such that the sulfur content of all fuel streams combined does not exceed 1 gr of sulfur compounds (as S) per 100 dscf; or use of a continuously operating SO<sub>2</sub> scrubber and either achieve 95% by weight control of sulfur compounds or achieve an emission rate of 9 ppmvd SO<sub>2</sub> @ 3% O<sub>2</sub>, which meets the most stringent emission requirements of BACT. Therefore, BACT is satisfied and a cost effective analysis does not need to be performed.

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

The applicant has proposed to fire on PUC quality natural gas, commercial propane, and/or commercial LPG; or gaseous fuel treated to remove 95% by weight of sulfur compounds; or treated such that the sulfur content of all fuel streams combined does not exceed 1 gr of sulfur compounds (as S) per 100 dscf; or use of a continuously operating SO<sub>2</sub> scrubber and either achieve 95% by weight control of sulfur compounds or achieve an emission rate of 9 ppmvd SO<sub>2</sub> @ 3% O<sub>2</sub>; therefore BACT for SO<sub>x</sub> and PM<sub>10</sub> emissions is satisfied.

## Top Down BACT Analysis for CO Emissions

### Step 1 - Identify all control technologies

From the SJVUAPCD BACT Clearinghouse, Guideline 1.2.1, Oilfield Steam Generator (> or = 20 MMBtu/hr, 1st quarter 2015, identifies BACT for CO emissions as follows:

Pollutant	Achieved in Practice or contained in SIP	Technologically Feasible	Alternate Basic Equipment
CO	25 ppmvd @ 3% O <sub>2</sub>		

### Step 2 - Eliminate Technologically Infeasible Options

The above listed technology is technologically feasible.

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

1. 25 ppmvd @ 3% O<sub>2</sub> (Achieved-In-Practice)

### Step 4 - Cost Effectiveness Analysis

The applicant has proposed a CO emission limit of 25 ppmvd @ 3% O<sub>2</sub>, which meets the most stringent emission requirements of BACT. Therefore, BACT is satisfied and a cost effective analysis does not need to be performed.

### Step 5 - Select BACT for CO

BACT for CO emissions from the steam generator in this project is 25 ppmvd @ 3% O<sub>2</sub>. The applicant has proposed CO emissions of 25 ppmvd @ 3% O<sub>2</sub>; therefore BACT for CO emissions is satisfied.

## Top Down BACT Analysis for VOC Emissions

### Step 1 - Identify All Possible VOC Control Technologies

From the SJVUAPCD BACT Clearinghouse, Guideline 1.2.1, Oilfield Steam Generator (> or = 20 MMBtu/hr, 1st quarter 2015, identifies BACT for VOC emissions as follows:

Pollutant	Achieved in Practice or contained in SIP	Technologically Feasible	Alternate Basic Equipment
VOC	Gaseous fuel		

### Step 2 - Eliminate Technologically Infeasible Options

None of the above listed technologies are technologically infeasible.

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

1. Gaseous fuel (Achieved-In-Practice)

### Step 4 - Cost Effectiveness Analysis

The applicant has proposed the use of gaseous fuel for the steam generator in this project. Since the applicant has chosen the most effective control technology in step 3, a cost effectiveness analysis is not required.

### Step 5 - Select BACT

BACT for VOC emissions from the steam generator in this project is gaseous fuel. The applicant has proposed gaseous fuel; therefore BACT for VOC emissions is satisfied.

## **ATTACHMENT B**

### **Compliance Certification**

RECEIVED

OCT 08 2014

SJVAPCD  
Southern Region

October 6, 2014

Mr. Leonard Scandura  
Permit Services Manager  
San Joaquin Valley Unified  
Air Pollution Control District  
34946 Flyover Ct.  
Bakersfield, CA 93308

**Subject: ATC Application – Portable Steam Generator  
Federal Major Modification Compliance Certification**

Dear Mr. Scandura:

I hereby certify that all major Stationary Sources owned or operated by such person (or by any entity controlling, controlled by, or under common control with such person) in California, which are subject to emission limitations, are in compliance or on a schedule for compliance with all applicable emission limitations and standards.

  
Signature

Name: Anibal Araya  
Title: Operations Manager

## **ATTACHMENT C**

### **Certificate of Conformity**

RECEIVED

OCT 08 2014

SJVAPCD  
Southern Region

# San Joaquin Valley Unified Air Pollution Control District

## TITLE V MODIFICATION - COMPLIANCE CERTIFICATION FORM

### I. TYPE OF PERMIT ACTION (Check appropriate box)

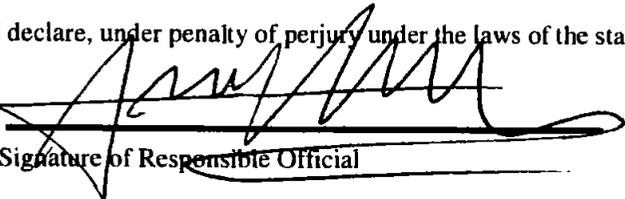
- SIGNIFICANT PERMIT MODIFICATION                       ADMINISTRATIVE  
 MINOR PERMIT MODIFICATION                                       AMENDMENT

COMPANY NAME: VINTAGE PRODUCTION CALIFORNIA, LLC	FACILITY ID: Various
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:	
3. Agent to the Owner:	

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

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

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

  
 \_\_\_\_\_  
 Signature of Responsible Official

10/6/14  
 \_\_\_\_\_  
 Date

Anibal Araya

\_\_\_\_\_  
 Name of Responsible Official (please print)  
 \_\_\_\_\_  
 Operations Manager

Title of Responsible Official (please print)

Mailing Address: Central Regional Office \* 1990 E. Gettysburg Avenue \* Fresno, California 93726-0244 \* (559) 230-5900 \* FAX (559) 230-6061

## **ATTACHMENT D**

### **Health Risk Assessment Analysis**

# San Joaquin Valley Air Pollution Control District Risk Management Review

To: David Torji – Permit Services  
 From: Kyle Melching – Technical Services  
 Date: December 8, 2014  
 Facility Name: Vintage Petroleum  
 Location: Various Locations HOC  
 Application #(s): S-1326-457-0  
 Project #: S-1143931

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## A. RMR SUMMARY

<b>RMR Summary</b>			
<b>Categories</b>	<b>25 MMBtu NG/CVRG Steam Generator (Unit 457-0)</b>	<b>Project Totals</b>	<b>Facility Totals</b>
<b>Prioritization Score</b>	0.5	0.5	>1
<b>Acute Hazard Index</b>	0.00	0.00	0.35
<b>Chronic Hazard Index</b>	0.00	0.00	0.03
<b>Maximum Individual Cancer Risk</b>	<b>7.5E-09</b>	7.5E-09	7.49E-06
<b>T-BACT Required?</b>	<b>No</b>		
<b>Special Permit Conditions?</b>	<b>Yes</b>		

### Proposed Permit Conditions

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

#### Unit # 457-0

1. {1898} 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] N

## I. Project Description

Technical Services received a request on November 5, 2014, to perform an Ambient Air Quality Analysis and Risk Management Review to install up to a 25 MMBtu/hr NG/CVRG transportable steam generator to be operated at multiple facilities and permitted under different facility ID numbers. The new steam generator will also be permitted as S-1737-199-0, S-1327-219-0, and S-1738-508-0. This particular RMR will evaluate the potential worst case health risk while operating the unit in the Heavy Oilfield Central (HOC) property. A worst case operation location within the NE Bakersfield modeling domain has been selected to determine the units maximum potential risk within HOC.

## II. Analysis

Toxic emissions for the Petroleum Steam Generators fueled by Natural Gas and Casing Vapor Recovery Gas were calculated using emission factors from *December 2009 Emission Estimation Protocol for Petroleum Refineries* by the American Petroleum Institute and Western States Petroleum Association. In accordance with the District's *Risk Management Policy for Permitting New and Modified Sources* (APR 1905-1, March 2, 2001), risks from the project were prioritized using the procedures in the 1990 CAPCOA Facility Prioritization Guidelines and incorporated in the District's HEART's database. The prioritization score for the project was less than 1.0 (see RMR Summary Table); however, the facility's total prioritization score was greater than 1.0. Therefore, a refined Health Risk Assessment was required and performed for the project. This analysis uses guidance for Vintage Production projects operating within designated fields. The guidance and total risk by receptor can be found under facility S-1326. AERMOD was used with source parameters outlined below and concatenated 5-year meteorological data from Bakersfield to determine maximum dispersion factors at the nearest residential and business receptors. The dispersion factors were input into the HARP model to calculate the Chronic and Acute Hazard Indices and the Carcinogenic Risk.

The following parameters were used for the review:

<b>Analysis Parameters (Unit 457-0)</b>			
<b>Source Type</b>	<b>Point</b>	<b>Location Type</b>	<b>Rural</b>
<b>Stack Height (m)</b>	6.1	<b>NG/CVRG Usage (mmscf/hr)</b>	0.025
<b>Stack Diameter (m)</b>	0.91	<b>NG/CVRG Usage (mmscf/yr)</b>	219
<b>Stack Temperature (K)</b>	477		
<b>Stack Velocity (m/s)</b>	4.31		

Technical Services also performed modeling for criteria pollutants CO, NO<sub>x</sub>, SO<sub>x</sub>, and PM<sub>10</sub>. Emission rates used for criteria pollutant modeling were 0.45 lb/hr & 3942 lb/yr CO, 0.2 lb/hr & 1752 lb/yr NO<sub>x</sub>, 0.4 lb/hr & 3504 lb/yr SO<sub>x</sub>, and 0.19 lb/hr & 1664 lb/yr PM<sub>10</sub>.

The results from the Criteria Pollutant Modeling are as follows:

### Criteria Pollutant Modeling Results\*

Values are in  $\mu\text{g}/\text{m}^3$

NG-Fired Generator	1 Hour	3 Hours	8 Hours	24 Hours	Annual
CO	Pass	X	Pass	X	X
NO <sub>x</sub>	Pass <sup>1</sup>	X	X	X	Pass
SO <sub>x</sub>	Pass	Pass	X	Pass	Pass
PM <sub>10</sub>	X	X	X	Pass <sup>2</sup>	Pass <sup>2</sup>
PM <sub>2.5</sub>	X	X	X	Pass <sup>2</sup>	Pass <sup>2</sup>

\*Results were taken from the attached PSD spreadsheet.

<sup>1</sup>The project was compared to the 1-hour NO<sub>2</sub> National Ambient Air Quality Standard that became effective on April 12, 2010, using the District's approved procedures.

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

### III. Conclusions

The acute and chronic indices are below 1.0; and the maximum individual cancer risk associated with the project is **7.5E-09**, which is less than the 1 in a million threshold. In accordance with the District's Risk Management Policy, the project is approved **without** Toxic Best Available Control Technology (T-BACT).

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

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

### IV. Attachments

- A. RMR request from the project engineer
- B. Additional information from the applicant/project engineer
- C. Prioritization score w/ toxic emissions summary
- D. HARP Risk Results
- E. Facility Summary

# San Joaquin Valley Air Pollution Control District Risk Management Review

To: David Torii – Permit Services  
 From: Kyle Melching – Technical Services  
 Date: December 5, 2014  
 Facility Name: Vintage Petroleum  
 Location: Various Locations HOW  
 Application #(s): S-1327-219-0  
 Project #: S-1143925

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## A. RMR SUMMARY

RMR Summary			
Categories	25 MMBtu NG/CVRG Steam Generator (Unit 219-0)	Project Totals	Facility Totals
Prioritization Score	0.5	0.5	>1
Acute Hazard Index	0.01	0.01	0.01
Chronic Hazard Index	0.00	0.00	0.02
Maximum Individual Cancer Risk	4.38E-09	4.38E-09	6.79E-06
T-BACT Required?	No		
Special Permit Conditions?	Yes		

### Proposed Permit Conditions

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

#### Unit # 219-0

1. {1898} 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] N

**I. Project Description**

Technical Services received a request on November 5, 2014, to perform an Ambient Air Quality Analysis and Risk Management Review to install up to a 25 MMBtu/hr NG/CVRG transportable steam generator to be operated at multiple facilities and permitted under different facility ID numbers. The new steam generator will also be permitted as S-1737-199-0, S-1326-457-0, and S-1738-508-0. This particular RMR will evaluate the potential worst case health risk while operating the unit in the Heavy Oilfield Western (HOW) property. A worst case operation location within the Maricopa modeling domain has been selected to determine the units maximum potential risk within HOW.

**II. Analysis**

Toxic emissions for the Petroleum Steam Generators fueled by Natural Gas and Casing Vapor Recovery Gas were calculated using emission factors from *December 2009 Emission Estimation Protocol for Petroleum Refineries* by the American Petroleum Institute and Western States Petroleum Association. In accordance with the District's *Risk Management Policy for Permitting New and Modified Sources* (APR 1905-1, March 2, 2001), risks from the project were prioritized using the procedures in the 1990 CAPCOA Facility Prioritization Guidelines and incorporated in the District's HEART's database. The prioritization score for the project was less than 1.0 (see RMR Summary Table); however, the facility's total prioritization score was greater than 1.0. Therefore, a refined Health Risk Assessment was required and performed for the project. This analysis uses guidance for Vintage Production projects operating within designated fields. The guidance and total risk by receptor can be found under facility S-1327. AERMOD was used with source parameters outlined below and concatenated 5-year meteorological data from Fellows to determine maximum dispersion factors at the nearest residential and business receptors. The dispersion factors were input into the HARP model to calculate the Chronic and Acute Hazard Indices and the Carcinogenic Risk.

The following parameters were used for the review:

<b>Analysis Parameters (Unit 219-0)</b>			
<b>Source Type</b>	<b>Point</b>	<b>Location Type</b>	<b>Rural</b>
<b>Stack Height (m)</b>	6.1	<b>NG/CVRG Usage (mmscf/hr)</b>	0.025
<b>Stack Diameter (m)</b>	0.91	<b>NG/CVRG Usage (mmscf/yr)</b>	219
<b>Stack Temperature (K)</b>	477		
<b>Stack Velocity (m/s)</b>	4.31		

Technical Services also performed modeling for criteria pollutants CO, NO<sub>x</sub>, SO<sub>x</sub>, and PM<sub>10</sub>. Emission rates used for criteria pollutant modeling were 0.45 lb/hr & 3942 lb/yr CO, 0.2 lb/hr & 1752 lb/yr NO<sub>x</sub>, 0.4 lb/hr & 3504 lb/yr SO<sub>x</sub>, and 0.19 lb/hr & 1664 lb/yr PM<sub>10</sub>.

The results from the Criteria Pollutant Modeling are as follows:

**Criteria Pollutant Modeling Results\***  
Values are in µg/m<sup>3</sup>

NG-Fired Generator	1 Hour	3 Hours	8 Hours	24 Hours	Annual
CO	Pass	X	Pass	X	X
NO <sub>x</sub>	Pass <sup>1</sup>	X	X	X	Pass
SO <sub>x</sub>	Pass	Pass	X	Pass	Pass
PM <sub>10</sub>	X	X	X	Pass <sup>2</sup>	Pass <sup>2</sup>
PM <sub>2.5</sub>	X	X	X	Pass <sup>2</sup>	Pass <sup>2</sup>

\*Results were taken from the attached PSD spreadsheet.

<sup>1</sup>The project was compared to the 1-hour NO<sub>2</sub> National Ambient Air Quality Standard that became effective on April 12, 2010, using the District's approved procedures.

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

### III. Conclusions

The acute and chronic indices are below 1.0; and the maximum individual cancer risk associated with the project is **4.38E-09**, which is less than the 1 in a million threshold. In accordance with the District's Risk Management Policy, the project is approved **without** Toxic Best Available Control Technology (T-BACT).

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

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

### IV. Attachments

- A. RMR request from the project engineer
- B. Additional information from the applicant/project engineer
- C. Prioritization score w/ toxic emissions summary
- D. HARP Risk Results
- E. Facility Summary

# San Joaquin Valley Air Pollution Control District Risk Management Review

To: David Torii – Permit Services  
 From: Kyle Melching – Technical Services  
 Date: December 8, 2014  
 Facility Name: Vintage Petroleum  
 Location: Various Locations LOC  
 Application #(s): S-1737-199-0  
 Project #: S-1143932

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## A. RMR SUMMARY

<b>RMR Summary</b>			
<b>Categories</b>	<b>25 MMBtu NG/CVRG Steam Generator (Unit 199-0)</b>	<b>Project Totals</b>	<b>Facility Totals</b>
<b>Prioritization Score</b>	0.5	0.5	>1
<b>Acute Hazard Index</b>	0.00	0.00	0.15
<b>Chronic Hazard Index</b>	0.00	0.00	0.07
<b>Maximum Individual Cancer Risk</b>	<b>5.96E-09</b>	5.96E-09	8.7E-06
<b>T-BACT Required?</b>	<b>No</b>		
<b>Special Permit Conditions?</b>	<b>Yes</b>		

### Proposed Permit Conditions

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

#### Unit # 199-0

1. {1898} 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] N

## I. Project Description

Technical Services received a request on November 5, 2014, to perform an Ambient Air Quality Analysis and Risk Management Review to install up to a 25 MMBtu/hr NG/CVRG transportable steam generator to be operated at multiple facilities and permitted under different facility ID numbers. The new steam generator will also be permitted as S-1326-457-0, S-1327-219-0, and S-1738-508-0. This particular RMR will evaluate the potential worst case health risk while operating the unit in the Light Oilfield Central (LOC) property. A worst case operation location within the Wasco-Shafter modeling domain has been selected to determine the units maximum potential risk within LOC.

## II. Analysis

Toxic emissions for the Petroleum Steam Generators fueled by Natural Gas and Casing Vapor Recovery Gas were calculated using emission factors from *December 2009 Emission Estimation Protocol for Petroleum Refineries* by the American Petroleum Institute and Western States Petroleum Association. In accordance with the District's *Risk Management Policy for Permitting New and Modified Sources* (APR 1905-1, March 2, 2001), risks from the project were prioritized using the procedures in the 1990 CAPCOA Facility Prioritization Guidelines and incorporated in the District's HEART's database. The prioritization score for the project was less than 1.0 (see RMR Summary Table); however, the facility's total prioritization score was greater than 1.0. Therefore, a refined Health Risk Assessment was required and performed for the project. This analysis uses guidance for Vintage Production projects operating within designated fields. The guidance and total risk by receptor can be found under facility S-1737. AERMOD was used with source parameters outlined below and concatenated 5-year meteorological data from Wasco to determine maximum dispersion factors at the nearest residential and business receptors. The dispersion factors were input into the HARP model to calculate the Chronic and Acute Hazard Indices and the Carcinogenic Risk.

The following parameters were used for the review:

Analysis Parameters (Unit 199-0)			
Source Type	Point	Location Type	Rural
Stack Height (m)	6.1	NG/CVRG Usage (mmscf/hr)	0.025
Stack Diameter (m)	0.91	NG/CVRG Usage (mmscf/yr)	219
Stack Temperature (K)	477		
Stack Velocity (m/s)	4.31		

Technical Services also performed modeling for criteria pollutants CO, NO<sub>x</sub>, SO<sub>x</sub>, and PM<sub>10</sub>. Emission rates used for criteria pollutant modeling were 0.45 lb/hr & 3942 lb/yr CO, 0.2 lb/hr & 1752 lb/yr NO<sub>x</sub>, 0.4 lb/hr & 3504 lb/yr SO<sub>x</sub>, and 0.19 lb/hr & 1664 lb/yr PM<sub>10</sub>.

The results from the Criteria Pollutant Modeling are as follows:

**Criteria Pollutant Modeling Results\***  
Values are in µg/m<sup>3</sup>

NG-Fired Generator	1 Hour	3 Hours	8 Hours	24 Hours	Annual
CO	Pass	X	Pass	X	X
NO <sub>x</sub>	Pass <sup>1</sup>	X	X	X	Pass
SO <sub>x</sub>	Pass	Pass	X	Pass	Pass
PM <sub>10</sub>	X	X	X	Pass <sup>2</sup>	Pass <sup>2</sup>
PM <sub>2.5</sub>	X	X	X	Pass <sup>2</sup>	Pass <sup>2</sup>

\*Results were taken from the attached PSD spreadsheet.

<sup>1</sup>The project was compared to the 1-hour NO<sub>2</sub> National Ambient Air Quality Standard that became effective on April 12, 2010, using the District's approved procedures.

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

### iii. Conclusions

The acute and chronic indices are below 1.0; and the maximum individual cancer risk associated with the project is **5.96E-09**, which is less than the 1 in a million threshold. In accordance with the District's Risk Management Policy, the project is approved **without** Toxic Best Available Control Technology (T-BACT).

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

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

### IV. Attachments

- A. RMR request from the project engineer
- B. Additional information from the applicant/project engineer
- C. Prioritization score w/ toxic emissions summary
- D. HARP Risk Results
- E. Facility Summary

# San Joaquin Valley Air Pollution Control District Risk Management Review

To: David Torii – Permit Services  
 From: Kyle Melching – Technical Services  
 Date: December 8, 2014  
 Facility Name: Vintage Petroleum  
 Location: Various Locations LOW  
 Application #(s): S-1738-508-0  
 Project #: S-1143930

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## A. RMR SUMMARY

RMR Summary			
Categories	25 MMBtu NG/CVRG Steam Generator (Unit 508-0)	Project Totals	Facility Totals
<b>Prioritization Score</b>	0.5	0.5	>1
<b>Acute Hazard Index</b>	0.00	0.00	0.84
<b>Chronic Hazard Index</b>	0.00	0.00	0.03
<b>Maximum Individual Cancer Risk</b>	1.63E-08	1.63E-08	9.88E-06
<b>T-BACT Required?</b>	No		
<b>Special Permit Conditions?</b>	Yes		

### Proposed Permit Conditions

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

#### Unit # 508-0

1. {1898} 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] N

## I. Project Description

Technical Services received a request on November 5, 2014, to perform an Ambient Air Quality Analysis and Risk Management Review to install up to a 25 MMBtu/hr NG/CVRG transportable steam generator to be operated at multiple facilities and permitted under different facility ID numbers. The new steam generator will also be permitted as S-1737-199-0, S-1327-219-0, and S-1326-457-0. This particular RMR will evaluate the potential worst case health risk while operating the unit in the Light Oilfield Western (LOW) property. A worst case operation location within the Elk Hill-Fellows modeling domain has been selected to determine the units maximum potential risk within LOW.

## II. Analysis

Toxic emissions for the Petroleum Steam Generators fueled by Natural Gas and Casing Vapor Recovery Gas were calculated using emission factors from *December 2009 Emission Estimation Protocol for Petroleum Refineries* by the American Petroleum Institute and Western States Petroleum Association. In accordance with the District's *Risk Management Policy for Permitting New and Modified Sources* (APR 1905-1, March 2, 2001), risks from the project were prioritized using the procedures in the 1990 CAPCOA Facility Prioritization Guidelines and incorporated in the District's HEART's database. The prioritization score for the project was less than 1.0 (see RMR Summary Table); however, the facility's total prioritization score was greater than 1.0. Therefore, a refined Health Risk Assessment was required and performed for the project. This analysis uses guidance for Vintage Production projects operating within designated fields. The guidance and total risk by receptor can be found under facility S-1738. AERMOD was used with source parameters outlined below and concatenated 5-year meteorological data from Fellows to determine maximum dispersion factors at the nearest residential and business receptors. The dispersion factors were input into the HARP model to calculate the Chronic and Acute Hazard Indices and the Carcinogenic Risk.

The following parameters were used for the review:

<b>Analysis Parameters (Unit 508-0)</b>			
<b>Source Type</b>	<b>Point</b>	<b>Location Type</b>	<b>Rural</b>
<b>Stack Height (m)</b>	6.1	<b>NG/CVRG Usage (mmscf/hr)</b>	0.025
<b>Stack Diameter (m)</b>	0.91	<b>NG/CVRG Usage (mmscf/yr)</b>	219
<b>Stack Temperature (K)</b>	477		
<b>Stack Velocity (m/s)</b>	4.31		

Technical Services also performed modeling for criteria pollutants CO, NO<sub>x</sub>, SO<sub>x</sub>, and PM<sub>10</sub>. Emission rates used for criteria pollutant modeling were 0.45 lb/hr & 3942 lb/yr CO, 0.2 lb/hr & 1752 lb/yr NO<sub>x</sub>, 0.4 lb/hr & 3504 lb/yr SO<sub>x</sub>, and 0.19 lb/hr & 1664 lb/yr PM<sub>10</sub>.

The results from the Criteria Pollutant Modeling are as follows:

**Criteria Pollutant Modeling Results\***  
Values are in µg/m<sup>3</sup>

NG-Fired Generator	1 Hour	3 Hours	8 Hours	24 Hours	Annual
CO	Pass	X	Pass	X	X
NO <sub>x</sub>	Pass <sup>1</sup>	X	X	X	Pass
SO <sub>x</sub>	Pass	Pass	X	Pass	Pass
PM <sub>10</sub>	X	X	X	Pass <sup>2</sup>	Pass <sup>2</sup>
PM <sub>2.5</sub>	X	X	X	Pass <sup>2</sup>	Pass <sup>2</sup>

\*Results were taken from the attached PSD spreadsheet.

<sup>1</sup>The project was compared to the 1-hour NO<sub>2</sub> National Ambient Air Quality Standard that became effective on April 12, 2010, using the District's approved procedures.

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

### III. Conclusions

The acute and chronic indices are below 1.0; and the maximum individual cancer risk associated with the project is **1.63E-08**, which is less than the 1 in a million threshold. In accordance with the District's Risk Management Policy, the project is approved **without** Toxic Best Available Control Technology (T-BACT).

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

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

### IV. Attachments

- A. RMR request from the project engineer
- B. Additional information from the applicant/project engineer
- C. Prioritization score w/ toxic emissions summary
- D. HARP Risk Results
- E. Facility Summary

## **ATTACHMENT E**

### **Draft Authority to Construct Permits**

San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

ISSUANCE DATE: DRAFT  
**DRAFT**

**PERMIT NO:** S-1326-457-0

**LEGAL OWNER OR OPERATOR:** CALIFORNIA RESOURCES PRODUCTION CORP  
**MAILING ADDRESS:** 9600 MING AVENUE, SUITE 300  
BAKERSFIELD, CA 93311

**LOCATION:** HEAVY OIL CENTRAL STATIONARY SOURCE  
KERN COUNTY, CA

**EQUIPMENT DESCRIPTION:**

25 MMBTU/HR NATURAL GAS/TEOR GAS/FIELD GAS/PROPANE-FIRED PORTABLE STEAM GENERATOR WITH NORTH AMERICAN LE, COEN QLN-11, OR EQUIVALENT LOW NOX BURNER AND A FLUE GAS RECIRCULATION SYSTEM (VARIOUS UNSPECIFIED LOCATIONS WITHIN HEAVY OIL CENTRAL STATIONARY SOURCE)

**CONDITIONS**

1. 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. Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. Prior to operating equipment under this Authority to Construct, permittee shall surrender NOx emission reduction credits for the following quantity of emissions: 1st quarter - 438 lb, 2nd quarter - 438 lb, 3rd quarter - 438 lb, and fourth quarter - 438 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 4/21/11) for the ERC specified below. [District Rule 2201] Federally Enforceable Through Title V Permit
4. Prior to operating equipment under this Authority to Construct, permittee shall surrender SOx emission reduction credits for the following quantity of emissions: 1st quarter - 876 lb, 2nd quarter - 876 lb, 3rd quarter - 876 lb, and fourth quarter - 876 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 4/21/11) for the ERC specified below. [District Rule 2201] Federally Enforceable Through Title V Permit

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**  
8-1326-457-0 Feb 24 2015 1:54PM - TOMS Joint Inspection NOT Required

5. Prior to operating equipment under this Authority to Construct, permittee shall surrender PM10 emission reduction credits for the following quantity of PM10 emissions: 1st quarter - 416 lb, 2nd quarter - 416 lb, 3rd quarter - 416 lb, and fourth quarter - 416 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 4/21/11) for the ERC specified below. [District Rule 2201] Federally Enforceable Through Title V Permit
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 - 301 lb, 2nd quarter - 301 lb, 3rd quarter - 301 lb, and fourth quarter - 301 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 4/21/11) for the ERC specified below. [District Rule 2201] Federally Enforceable Through Title V Permit
7. ERC Certificate Numbers S-4211-2, N-1237-5 and S-4348-1 (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. ERCs are only required to be surrendered for one of ATC permits S-1326-457-0, S-1327-219-0, S-8454-18-0, or S-8567-1-0. [District Rule 2201] Federally Enforceable Through Title V Permit
9. The permittee shall obtain written District approval for the use of any equivalent equipment not specifically approved by this Authority to Construct. Approval of the equivalent equipment shall be made only after the District's determination that the submitted design and performance of the proposed alternate equipment is equivalent to the specifically authorized equipment. [District Rule 2201] Federally Enforceable Through Title V Permit
10. The permittee's request for approval of equivalent equipment shall include the make, model, manufacturer's maximum rating, manufacturer's guaranteed emission rates, equipment drawing(s), and operational characteristics/parameters. [District Rule 2201] Federally Enforceable Through Title V Permit
11. Alternate equipment shall be of the same class and category of source as the equipment authorized by the Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
12. No emission factor and no emission shall be greater for the alternate equipment than for the proposed equipment. No changes in the hours of operation, operating rate, throughput, or firing rate may be authorized for any alternate equipment. [District Rule 2201] Federally Enforceable Through Title V Permit
13. This unit is permitted as S-1327-219, S-8454-18, and S-8567-1 and is approved to operate in California Resources Production Corporation's and California Resources Elk Hills, LLC's, or its subsidiary's, Light and Heavy Oil Western and Central stationary sources. [District Rule 2201] Federally Enforceable Through Title V Permit
14. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
15. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101] Federally Enforceable Through Title V Permit
16. This unit shall only use public utility supplied power or IC engine powered electrical generators S-1326-447 and '448 for its electrical needs. [District Rule 2201] Federally Enforceable Through Title V Permit
17. Unit shall not be located within 1000 feet of any K-12 school. [CH&SC 42301.6]
18. Permittee shall notify the District Compliance Division to arrange a start-up inspection at the initial location of the unit. [District Rule 1070] Federally Enforceable Through Title V Permit
19. Permittee shall notify the District Compliance Division of each location at which the unit is located in excess of 24 hours. Such notification shall be made no later than 48 hours after starting operation at the location. [District Rule 1070] Federally Enforceable Through Title V Permit
20. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit
21. 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]

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CONDITIONS CONTINUE ON NEXT PAGE

22. Unit shall only be fired on gaseous fuel that includes PUC-quality natural gas, propane, waste/field gas, and TEOR gas or a mixture of any of these fuels. [District Rule 2201] Federally Enforceable Through Title V Permit
23. Sulfur content of PUC-quality natural gas, waste/field gas, TEOR gas, or a mixture of these fuels shall not exceed 1.0 grain per 100 dry standard cubic feet or shall be treated to remove at least 95% by weight of sulfur compounds. [District Rule 2201] Federally Enforceable Through Title V Permit
24. During startup and shutdown, emissions shall not exceed 0.036 lb-NO<sub>x</sub>/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit
25. Except for periods of startup and shutdown, emissions shall not exceed any of the following limits: 7 ppmvd NO<sub>x</sub> @ 3% O<sub>2</sub> or 0.008 lb-NO<sub>x</sub>/MMBtu. [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
26. Emissions shall not exceed any of the following limits: 0.016 lb-SO<sub>x</sub>/MMBtu, 0.0076 lb-PM<sub>10</sub>/MMBtu, 25 ppmvd CO @ 3% O<sub>2</sub> or 0.0185 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
27. Emissions, including startup and shutdown, shall not exceed any of the following limits: 1,752 lb-NO<sub>x</sub>/year, 3,504 lb-SO<sub>x</sub>/year, 1,664 lb-PM<sub>10</sub>/year, or 1,205 lb-VOC/year. [District Rule 2201] Federally Enforceable Through Title V Permit
28. Duration of start-up or shutdown shall not exceed two hours each per occurrence. During start-up or shutdown, the emissions control system shall be in operation, and emissions shall be minimized insofar as technologically possible. The operator shall maintain daily records of the duration of start-up and shutdown periods. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
29. Start-up is defined as the period of time during which a unit is brought from a shutdown status to its operating temperature and pressure, including the time required by the unit's emission control system to reach full operation. Shutdown is defined as the period of time during which a unit is taken from an operational to a non-operational status by allowing it to cool down from its operating temperature to ambient temperature as the fuel supply to the unit is completely turned off. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
30. Source testing to measure natural gas-combustion NO<sub>x</sub> and CO emissions from this unit shall be conducted within 60 days of initial startup and at least once every twelve (12) months thereafter. 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 Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
31. Source testing and/or stack monitoring prescribed in this permit shall not be required while this equipment is in storage or is located outside of the jurisdiction of the San Joaquin Valley Air Pollution Control District. Upon reactivation from storage or relocation of this equipment within the jurisdiction of the SJVUAPCD, normal source testing and/or stack monitoring shall recommence. If a source test is postponed due to the equipment being in storage or located outside of SJVAPCD jurisdiction, a source test shall be conducted within 60 days of recommencing operation within the jurisdiction of the SJVUAPCD. [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
32. If and when this unit is fired on LPG/propane, source testing to measure NO<sub>x</sub> and CO emissions from this unit shall be conducted within 60 days of first firing on the LPG/propane fuel. Additional source testing when firing on LPG/propane fuel is not required, but may be conducted and used by the operator to satisfy the applicable twelve (12) month or thirty-six (36) month periodic testing required by this permit. [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
33. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
34. 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

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CONDITIONS CONTINUE ON NEXT PAGE

35. 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
36. 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 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
37. CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
38. Stack gas oxygen (O2) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
39. 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 4306. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
40. 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 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
41. The operator shall determine within 60 days of first use and annually thereafter the fuel sulfur content of each source of unregulated natural gas fuel combusted in this unit using EPA Method 11 or 15, or ASTM Method D1072, D3246 or D6228 or double GC with mercaptans. In lieu of fuel sulfur content testing, the operator may conduct a source test for combustion SOx emissions within 60 days of startup and at least once every 12 months thereafter. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
42. If the unit is fired on regulated natural gas and/or propane, valid purchase contracts, supplier certifications, tariff sheets, or transportation contracts may be used to satisfy the fuel sulfur content analysis, provided they establish the fuel sulfur concentration and higher heating value. [District Rule 4320] Federally Enforceable Through Title V Permit
43. Sulfur content testing is not required for propane. [District Rule 4320] Federally Enforceable Through Title V Permit
44. If the unit is not fired solely on regulated natural gas and compliance is achieved through fuel sulfur content limitations, then the sulfur content of the fuel shall be determined by testing sulfur content at a location after all fuel sources are combined prior to incineration, or by performing mass balance calculations based on monitoring the sulfur content and volume of each fuel source. The sulfur content of the fuel shall be determined using the test methods referenced in this permit. [District Rule 4320] Federally Enforceable Through Title V Permit
45. Operators complying with Sections 5.4.1.1 or 5.4.1.2 shall provide an annual fuel analysis to the District upon request. [District Rule 4320] Federally Enforceable Through Title V Permit
46. The permittee shall monitor and record the stack concentration of NOx, CO, and O2 at least once every month (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 be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
47. 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 the performing the notification and testing required by this condition. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

48. 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 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
49. The permittee shall maintain records of: (1) the date and time of NO<sub>x</sub>, CO, and O<sub>2</sub> measurements, (2) the O<sub>2</sub> concentration in percent and the measured NO<sub>x</sub> and CO concentrations corrected to 3% O<sub>2</sub>, (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 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
50. Permittee shall submit notification to the District of the date of construction and actual startup. Notifications shall be postmarked no later than 30 days after construction and 15 days after actual startup. The notifications shall include the design heat input and identification of fuels for this permit unit. [40 CFR 60.48c (a)] Federally Enforceable Through Title V Permit
51. A non-resettable, totalizing mass or volumetric fuel flow meter to measure the amount of fuel combusted in the unit shall be installed, utilized and maintained. [District Rules 2201 and 40 CFR 60.48c (g)] Federally Enforceable Through Title V Permit
52. Permittee shall maintain daily records of the type and quantity of fuel combusted by the steam generator. [District Rule 2201 and 40 CFR 60.48c (g)] Federally Enforceable Through Title V Permit
53. Permittee shall maintain records of calculated annual emissions from the unit. [District Rule 2201] Federally Enforceable Through Title V Permit
54. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, 4306, 4320, and 40 CFR 60.48c (i)] Federally Enforceable Through Title V Permit

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San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

ISSUANCE DATE: DRAFT  
**DRAFT**

**PERMIT NO:** S-1327-219-0

**LEGAL OWNER OR OPERATOR:** CALIFORNIA RESOURCES PRODUCTION CORP  
**MAILING ADDRESS:** 9600 MING AVE., SUITE 300  
BAKERSFIELD, CA 93311

**LOCATION:** HEAVY OIL WESTERN, KERN COUNTY  
CA

**EQUIPMENT DESCRIPTION:**  
25 MMBTU/HR NATURAL GAS/TEOR GAS/FIELD GAS/PROPANE-FIRED PORTABLE STEAM GENERATOR WITH NORTH AMERICAN LE, COEN QLN-11, OR EQUIVALENT LOW NOX BURNER AND A FLUE GAS RECIRCULATION SYSTEM (VARIOUS UNSPECIFIED LOCATIONS WITHIN HEAVY OIL WESTERN STATIONARY SOURCE)

**CONDITIONS**

1. 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. Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. Prior to operating equipment under this Authority to Construct, permittee shall surrender NOx emission reduction credits for the following quantity of emissions: 1st quarter - 438 lb, 2nd quarter - 438 lb, 3rd quarter - 438 lb, and fourth quarter - 438 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 4/21/11) for the ERC specified below. [District Rule 2201] Federally Enforceable Through Title V Permit
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Seyed Sadredin, Executive Director APCO

**DRAFT**

Arnaud Marjollet, Director of Permit Services  
S-1327-219-0 Feb 24 2015 1:54PM -- TOMB : Joint Inspection NOT Required

5. Prior to operating equipment under this Authority to Construct, permittee shall surrender PM10 emission reduction credits for the following quantity of PM10 emissions: 1st quarter - 416 lb, 2nd quarter - 416 lb, 3rd quarter - 416 lb, and fourth quarter - 416 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 4/21/11) for the ERC specified below. [District Rule 2201] Federally Enforceable Through Title V Permit
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11. Alternate equipment shall be of the same class and category of source as the equipment authorized by the Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
12. No emission factor and no emission shall be greater for the alternate equipment than for the proposed equipment. No changes in the hours of operation, operating rate, throughput, or firing rate may be authorized for any alternate equipment. [District Rule 2201] Federally Enforceable Through Title V Permit
13. This unit is permitted as S-1326-457, S-8454-18, and S-8567-1 and is approved to operate in California Resources Production Corporation's and California Resources Elk Hills, LLC's, or its subsidiary's, Light and Heavy Oil Western and Central stationary sources. [District Rule 2201] Federally Enforceable Through Title V Permit
14. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
15. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101] Federally Enforceable Through Title V Permit
16. This unit shall only use public utility supplied power or IC engine powered electrical generators S-1326-447 and '448 for its electrical needs. [District Rule 2201] Federally Enforceable Through Title V Permit
17. Unit shall not be located within 1000 feet of any K-12 school. [CH&SC 42301.6]
18. Permittee shall notify the District Compliance Division to arrange a start-up inspection at the initial location of the unit. [District Rule 1070] Federally Enforceable Through Title V Permit
19. Permittee shall notify the District Compliance Division of each location at which the unit is located in excess of 24 hours. Such notification shall be made no later than 48 hours after starting operation at the location. [District Rule 1070] Federally Enforceable Through Title V Permit
20. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit
21. 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]

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CONDITIONS CONTINUE ON NEXT PAGE

22. Unit shall only be fired on gaseous fuel that includes PUC-quality natural gas, propane, waste/field gas, and TEOR gas or a mixture of any of these fuels. [District Rule 2201] Federally Enforceable Through Title V Permit
23. Sulfur content of PUC-quality natural gas, waste/field gas, TEOR gas, or a mixture of these fuels shall not exceed 1.0 grain per 100 dry standard cubic feet or shall be treated to remove at least 95% by weight of sulfur compounds. [District Rule 2201] Federally Enforceable Through Title V Permit
24. During startup and shutdown, emissions shall not exceed 0.036 lb-NOx/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit
25. Except for periods of startup and shutdown, emissions shall not exceed any of the following limits: 7 ppmvd NOx @ 3% O2 or 0.008 lb-NOx/MMBtu. [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
26. Emissions shall not exceed any of the following limits: 0.016 lb-SOx/MMBtu, 0.0076 lb-PM10/MMBtu, 25 ppmvd CO @ 3% O2 or 0.0185 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
27. Emissions, including startup and shutdown, shall not exceed any of the following limits: 1,752 lb-NOx/year, 3,504 lb-SOx/year, 1,664 lb-PM10/year, or 1,205 lb-VOC/year. [District Rule 2201] Federally Enforceable Through Title V Permit
28. Duration of start-up or shutdown shall not exceed two hours each per occurrence. During start-up or shutdown, the emissions control system shall be in operation, and emissions shall be minimized insofar as technologically possible. The operator shall maintain daily records of the duration of start-up and shutdown periods. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
29. Start-up is defined as the period of time during which a unit is brought from a shutdown status to its operating temperature and pressure, including the time required by the unit's emission control system to reach full operation. Shutdown is defined as the period of time during which a unit is taken from an operational to a non-operational status by allowing it to cool down from its operating temperature to ambient temperature as the fuel supply to the unit is completely turned off. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
30. Source testing to measure natural gas-combustion NOx and CO emissions from this unit shall be conducted within 60 days of initial startup and at least once every twelve (12) months thereafter. 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 Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
31. Source testing and/or stack monitoring prescribed in this permit shall not be required while this equipment is in storage or is located outside of the jurisdiction of the San Joaquin Valley Air Pollution Control District. Upon reactivation from storage or relocation of this equipment within the jurisdiction of the SJVUAPCD, normal source testing and/or stack monitoring shall recommence. If a source test is postponed due to the equipment being in storage or located outside of SJVAPCD jurisdiction, a source test shall be conducted within 60 days of recommencing operation within the jurisdiction of the SJVUAPCD. [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
32. If and when this unit is fired on LPG/propane, source testing to measure NOx and CO emissions from this unit shall be conducted within 60 days of first firing on the LPG/propane fuel. Additional source testing when firing on LPG/propane fuel is not required, but may be conducted and used by the operator to satisfy the applicable twelve (12) month or thirty-six (36) month periodic testing required by this permit. [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
33. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
34. 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

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CONDITIONS CONTINUE ON NEXT PAGE

35. 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
36. NO<sub>x</sub> 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 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
37. CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
38. Stack gas oxygen (O<sub>2</sub>) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
39. 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 4306. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
40. 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 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
41. The operator shall determine within 60 days of first use and annually thereafter the fuel sulfur content of each source of unregulated natural gas fuel combusted in this unit using EPA Method 11 or 15, or ASTM Method D1072, D3246 or D6228 or double GC with mercaptans. In lieu of fuel sulfur content testing, the operator may conduct a source test for combustion SO<sub>x</sub> emissions within 60 days of startup and at least once every 12 months thereafter. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
42. If the unit is fired on regulated natural gas and/or propane, valid purchase contracts, supplier certifications, tariff sheets, or transportation contracts may be used to satisfy the fuel sulfur content analysis, provided they establish the fuel sulfur concentration and higher heating value. [District Rule 4320] Federally Enforceable Through Title V Permit
43. Sulfur content testing is not required for propane. [District Rule 4320] Federally Enforceable Through Title V Permit
44. If the unit is not fired solely on regulated natural gas and compliance is achieved through fuel sulfur content limitations, then the sulfur content of the fuel shall be determined by testing sulfur content at a location after all fuel sources are combined prior to incineration, or by performing mass balance calculations based on monitoring the sulfur content and volume of each fuel source. The sulfur content of the fuel shall be determined using the test methods referenced in this permit. [District Rule 4320] Federally Enforceable Through Title V Permit
45. Operators complying with Sections 5.4.1.1 or 5.4.1.2 shall provide an annual fuel analysis to the District upon request. [District Rule 4320] Federally Enforceable Through Title V Permit
46. The permittee shall monitor and record the stack concentration of NO<sub>x</sub>, CO, and O<sub>2</sub> at least once every month (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 be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
47. If either the NO<sub>x</sub> or CO concentrations corrected to 3% O<sub>2</sub>, 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 the performing the notification and testing required by this condition. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

48. 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 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
49. The permittee shall maintain records of: (1) the date and time of NO<sub>x</sub>, CO, and O<sub>2</sub> measurements, (2) the O<sub>2</sub> concentration in percent and the measured NO<sub>x</sub> and CO concentrations corrected to 3% O<sub>2</sub>, (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 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
50. Permittee shall submit notification to the District of the date of construction and actual startup. Notifications shall be postmarked no later than 30 days after construction and 15 days after actual startup. The notifications shall include the design heat input and identification of fuels for this permit unit. [40 CFR 60.48c (a)] Federally Enforceable Through Title V Permit
51. A non-resettable, totalizing mass or volumetric fuel flow meter to measure the amount of fuel combusted in the unit shall be installed, utilized and maintained. [District Rules 2201 and 40 CFR 60.48c (g)] Federally Enforceable Through Title V Permit
52. Permittee shall maintain daily records of the type and quantity of fuel combusted by the steam generator. [District Rule 2201 and 40 CFR 60.48c (g)] Federally Enforceable Through Title V Permit
53. Permittee shall maintain records of calculated annual emissions from the unit. [District Rule 2201] Federally Enforceable Through Title V Permit
54. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, 4306, 4320, and 40 CFR 60.48c (i)] Federally Enforceable Through Title V Permit

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San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

ISSUANCE DATE: DRAFT  
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**PERMIT NO:** S-8454-18-0

**LEGAL OWNER OR OPERATOR:** CALIFORNIA RESOURCES PRODUCTION CORP  
**MAILING ADDRESS:** 9600 MING AVE, SUITE 300  
BAKERSFIELD, CA 93311

**LOCATION:** LIGHT OIL WESTERN

**EQUIPMENT DESCRIPTION:**

25 MMBTU/HR NATURAL GAS/TEOR GAS/FIELD GAS/PROPANE-FIRED PORTABLE STEAM GENERATOR WITH NORTH AMERICAN LE, COEN QLN-11, OR EQUIVALENT LOW NOX BURNER AND A FLUE GAS RECIRCULATION SYSTEM (VARIOUS UNSPECIFIED LOCATIONS WITHIN LIGHT OIL WESTERN STATIONARY SOURCE)

**CONDITIONS**

1. 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. Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. Prior to operating equipment under this Authority to Construct, permittee shall surrender NOx emission reduction credits for the following quantity of emissions: 1st quarter - 438 lb, 2nd quarter - 438 lb, 3rd quarter - 438 lb, and fourth quarter - 438 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 4/21/11) for the ERC specified below. [District Rule 2201] Federally Enforceable Through Title V Permit
4. Prior to operating equipment under this Authority to Construct, permittee shall surrender SOx emission reduction credits for the following quantity of emissions: 1st quarter - 876 lb, 2nd quarter - 876 lb, 3rd quarter - 876 lb, and fourth quarter - 876 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 4/21/11) for the ERC specified below. [District Rule 2201] Federally Enforceable Through Title V Permit

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-8454-18-0, Feb 24 2015 1:54PM - TOMS : Joint Inspection NOT Required

5. Prior to operating equipment under this Authority to Construct, permittee shall surrender PM10 emission reduction credits for the following quantity of PM10 emissions: 1st quarter - 416 lb, 2nd quarter - 416 lb, 3rd quarter - 416 lb, and fourth quarter - 416 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 4/21/11) for the ERC specified below. [District Rule 2201] Federally Enforceable Through Title V Permit
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 - 301 lb, 2nd quarter - 301 lb, 3rd quarter - 301 lb, and fourth quarter - 301 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 4/21/11) for the ERC specified below. [District Rule 2201] Federally Enforceable Through Title V Permit
7. ERC Certificate Numbers S-4211-2, N-1237-5 and S-4348-1 (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. ERCs are only required to be surrendered for one of ATC permits S-1326-457-0, S-1327-219-0, S-8454-18-0, or S-8567-1-0. [District Rule 2201] Federally Enforceable Through Title V Permit
9. The permittee shall obtain written District approval for the use of any equivalent equipment not specifically approved by this Authority to Construct. Approval of the equivalent equipment shall be made only after the District's determination that the submitted design and performance of the proposed alternate equipment is equivalent to the specifically authorized equipment. [District Rule 2201] Federally Enforceable Through Title V Permit
10. The permittee's request for approval of equivalent equipment shall include the make, model, manufacturer's maximum rating, manufacturer's guaranteed emission rates, equipment drawing(s), and operational characteristics/parameters. [District Rule 2201] Federally Enforceable Through Title V Permit
11. Alternate equipment shall be of the same class and category of source as the equipment authorized by the Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
12. No emission factor and no emission shall be greater for the alternate equipment than for the proposed equipment. No changes in the hours of operation, operating rate, throughput, or firing rate may be authorized for any alternate equipment. [District Rule 2201] Federally Enforceable Through Title V Permit
13. This unit is permitted as S-1326-457, 1327-219, and S-8567-1 and is approved to operate in California Resources Production Corporation's and California Resources Elk Hills, LLC's, or its subsidiary's, Light and Heavy Oil Western and Central stationary sources. [District Rule 2201] Federally Enforceable Through Title V Permit
14. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
15. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101] Federally Enforceable Through Title V Permit
16. This unit shall only use public utility supplied power or IC engine powered electrical generators S-1326-447 and '448 for its electrical needs. [District Rule 2201] Federally Enforceable Through Title V Permit
17. Unit shall not be located within 1000 feet of any K-12 school. [CH&SC 42301.6]
18. Permittee shall notify the District Compliance Division to arrange a start-up inspection at the initial location of the unit. [District Rule 1070] Federally Enforceable Through Title V Permit
19. Permittee shall notify the District Compliance Division of each location at which the unit is located in excess of 24 hours. Such notification shall be made no later than 48 hours after starting operation at the location. [District Rule 1070] Federally Enforceable Through Title V Permit
20. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit
21. 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]

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CONDITIONS CONTINUE ON NEXT PAGE

22. Unit shall only be fired on gaseous fuel that includes PUC-quality natural gas, propane, waste/field gas, and TEOR gas or a mixture of any of these fuels. [District Rule 2201] Federally Enforceable Through Title V Permit
23. Sulfur content of PUC-quality natural gas, waste/field gas, TEOR gas, or a mixture of these fuels shall not exceed 1.0 grain per 100 dry standard cubic feet or shall be treated to remove at least 95% by weight of sulfur compounds. [District Rule 2201] Federally Enforceable Through Title V Permit
24. During startup and shutdown, emissions shall not exceed 0.036 lb-NOx/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit
25. Except for periods of startup and shutdown, emissions shall not exceed any of the following limits: 7 ppmvd NOx @ 3% O<sub>2</sub> or 0.008 lb-NOx/MMBtu. [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
26. Emissions shall not exceed any of the following limits: 0.016 lb-SOx/MMBtu, 0.0076 lb-PM<sub>10</sub>/MMBtu, 25 ppmvd CO @ 3% O<sub>2</sub> or 0.0185 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
27. Emissions, including startup and shutdown, shall not exceed any of the following limits: 1,752 lb-NOx/year, 3,504 lb-SOx/year, 1,664 lb-PM<sub>10</sub>/year, or 1,205 lb-VOC/year. [District Rule 2201] Federally Enforceable Through Title V Permit
28. Duration of start-up or shutdown shall not exceed two hours each per occurrence. During start-up or shutdown, the emissions control system shall be in operation, and emissions shall be minimized insofar as technologically possible. The operator shall maintain daily records of the duration of start-up and shutdown periods. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
29. Start-up is defined as the period of time during which a unit is brought from a shutdown status to its operating temperature and pressure, including the time required by the unit's emission control system to reach full operation. Shutdown is defined as the period of time during which a unit is taken from an operational to a non-operational status by allowing it to cool down from its operating temperature to ambient temperature as the fuel supply to the unit is completely turned off. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
30. Source testing to measure natural gas-combustion NOx and CO emissions from this unit shall be conducted within 60 days of initial startup and at least once every twelve (12) months thereafter. 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 Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
31. Source testing and/or stack monitoring prescribed in this permit shall not be required while this equipment is in storage or is located outside of the jurisdiction of the San Joaquin Valley Air Pollution Control District. Upon reactivation from storage or relocation of this equipment within the jurisdiction of the SJVUAPCD, normal source testing and/or stack monitoring shall recommence. If a source test is postponed due to the equipment being in storage or located outside of SJVAPCD jurisdiction, a source test shall be conducted within 60 days of recommencing operation within the jurisdiction of the SJVUAPCD. [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
32. If and when this unit is fired on LPG/propane, source testing to measure NOx and CO emissions from this unit shall be conducted within 60 days of first firing on the LPG/propane fuel. Additional source testing when firing on LPG/propane fuel is not required, but may be conducted and used by the operator to satisfy the applicable twelve (12) month or thirty-six (36) month periodic testing required by this permit. [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
33. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
34. 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

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CONDITIONS CONTINUE ON NEXT PAGE

35. 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
36. 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 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
37. CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
38. Stack gas oxygen (O<sub>2</sub>) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
39. 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 4306. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
40. 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 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
41. The operator shall determine within 60 days of first use and annually thereafter the fuel sulfur content of each source of unregulated natural gas fuel combusted in this unit using EPA Method 11 or 15, or ASTM Method D1072, D3246 or D6228 or double GC with mercaptans. In lieu of fuel sulfur content testing, the operator may conduct a source test for combustion SO<sub>x</sub> emissions within 60 days of startup and at least once every 12 months thereafter. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
42. If the unit is fired on regulated natural gas and/or propane, valid purchase contracts, supplier certifications, tariff sheets, or transportation contacts may be used to satisfy the fuel sulfur content analysis, provided they establish the fuel sulfur concentration and higher heating value. [District Rule 4320] Federally Enforceable Through Title V Permit
43. Sulfur content testing is not required for propane. [District Rule 4320] Federally Enforceable Through Title V Permit
44. If the unit is not fired solely on regulated natural gas and compliance is achieved through fuel sulfur content limitations, then the sulfur content of the fuel shall be determined by testing sulfur content at a location after all fuel sources are combined prior to incineration, or by performing mass balance calculations based on monitoring the sulfur content and volume of each fuel source. The sulfur content of the fuel shall be determined using the test methods referenced in this permit. [District Rule 4320] Federally Enforceable Through Title V Permit
45. Operators complying with Sections 5.4.1.1 or 5.4.1.2 shall provide an annual fuel analysis to the District upon request. [District Rule 4320] Federally Enforceable Through Title V Permit
46. The permittee shall monitor and record the stack concentration of NO<sub>x</sub>, CO, and O<sub>2</sub> at least once every month (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 be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
47. If either the NO<sub>x</sub> or CO concentrations corrected to 3% O<sub>2</sub>, 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 the performing the notification and testing required by this condition. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

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48. 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 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
49. The permittee shall maintain records of: (1) the date and time of NO<sub>x</sub>, CO, and O<sub>2</sub> measurements, (2) the O<sub>2</sub> concentration in percent and the measured NO<sub>x</sub> and CO concentrations corrected to 3% O<sub>2</sub>, (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 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
50. Permittee shall submit notification to the District of the date of construction and actual startup. Notifications shall be postmarked no later than 30 days after construction and 15 days after actual startup. The notifications shall include the design heat input and identification of fuels for this permit unit. [40 CFR 60.48c (a)] Federally Enforceable Through Title V Permit
51. A non-resettable, totalizing mass or volumetric fuel flow meter to measure the amount of fuel combusted in the unit shall be installed, utilized and maintained. [District Rules 2201 and 40 CFR 60.48c (g)] Federally Enforceable Through Title V Permit
52. Permittee shall maintain daily records of the type and quantity of fuel combusted by the steam generator. [District Rule 2201 and 40 CFR 60.48c (g)] Federally Enforceable Through Title V Permit
53. Permittee shall maintain records of calculated annual emissions from the unit. [District Rule 2201] Federally Enforceable Through Title V Permit
54. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, 4306, 4320, and 40 CFR 60.48c (i)] Federally Enforceable Through Title V Permit

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San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

ISSUANCE DATE: DRAFT  
**DRAFT**

**PERMIT NO:** S-8567-1-0

**LEGAL OWNER OR OPERATOR:** CALIFORNIA RESOURCES PRODUCTION CORP  
**MAILING ADDRESS:** 9600 MING AVENUE  
BAKERSFIELD, CA 93311

**LOCATION:** LIGHT OIL CENTRAL  
BAKERSFIELD, CA

**EQUIPMENT DESCRIPTION:**

25 MMBTU/HR NATURAL GAS/TEOR GAS/FIELD GAS/PROPANE-FIRED PORTABLE STEAM GENERATOR WITH NORTH AMERICAN LE, COEN QLN-11, OR EQUIVALENT LOW NOX BURNER AND A FLUE GAS RECIRCULATION SYSTEM (VARIOUS UNSPECIFIED LOCATIONS WITHIN LIGHT OIL CENTRAL STATIONARY SOURCE)

**CONDITIONS**

1. 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. Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. Prior to operating equipment under this Authority to Construct, permittee shall surrender NOx emission reduction credits for the following quantity of emissions: 1st quarter - 438 lb, 2nd quarter - 438 lb, 3rd quarter - 438 lb, and fourth quarter - 438 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 4/21/11) for the ERC specified below. [District Rule 2201] Federally Enforceable Through Title V Permit
4. Prior to operating equipment under this Authority to Construct, permittee shall surrender SOx emission reduction credits for the following quantity of emissions: 1st quarter - 876 lb, 2nd quarter - 876 lb, 3rd quarter - 876 lb, and fourth quarter - 876 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 4/21/11) for the ERC specified below. [District Rule 2201] Federally Enforceable Through Title V Permit

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 Marjoret, Director of Permit Services**

6-8567-1-0: Feb 24 2015 1:54PM - TOMS Joint Inspection NOT Required

5. Prior to operating equipment under this Authority to Construct, permittee shall surrender PM10 emission reduction credits for the following quantity of PM10 emissions: 1st quarter - 416 lb, 2nd quarter - 416 lb, 3rd quarter - 416 lb, and fourth quarter - 416 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 4/21/11) for the ERC specified below. [District Rule 2201] Federally Enforceable Through Title V Permit
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 - 301 lb, 2nd quarter - 301 lb, 3rd quarter - 301 lb, and fourth quarter - 301 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 4/21/11) for the ERC specified below. [District Rule 2201] Federally Enforceable Through Title V Permit
7. ERC Certificate Numbers S-4211-2, N-1237-5 and S-4348-1 (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. ERCs are only required to be surrendered for one of ATC permits S-1326-457-0, S-1327-219-0, S-8454-18-0, or S-8567-1-0. [District Rule 2201] Federally Enforceable Through Title V Permit
9. The permittee shall obtain written District approval for the use of any equivalent equipment not specifically approved by this Authority to Construct. Approval of the equivalent equipment shall be made only after the District's determination that the submitted design and performance of the proposed alternate equipment is equivalent to the specifically authorized equipment. [District Rule 2201] Federally Enforceable Through Title V Permit
10. The permittee's request for approval of equivalent equipment shall include the make, model, manufacturer's maximum rating, manufacturer's guaranteed emission rates, equipment drawing(s), and operational characteristics/parameters. [District Rule 2201] Federally Enforceable Through Title V Permit
11. Alternate equipment shall be of the same class and category of source as the equipment authorized by the Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
12. No emission factor and no emission shall be greater for the alternate equipment than for the proposed equipment. No changes in the hours of operation, operating rate, throughput, or firing rate may be authorized for any alternate equipment. [District Rule 2201] Federally Enforceable Through Title V Permit
13. This unit is permitted as S-1326-457, 1327-219, and S-8454-18 and is approved to operate in California Resources Production Corporation's and California Resources Elk Hills, LLC's, or its subsidiary's, Light and Heavy Oil Western and Central stationary sources. [District Rule 2201] Federally Enforceable Through Title V Permit
14. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
15. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101] Federally Enforceable Through Title V Permit
16. This unit shall only use public utility supplied power or IC engine powered electrical generators S-1326-447 and '448 for its electrical needs. [District Rule 2201] Federally Enforceable Through Title V Permit
17. Unit shall not be located within 1000 feet of any K-12 school. [CH&SC 42301.6]
18. Permittee shall notify the District Compliance Division to arrange a start-up inspection at the initial location of the unit. [District Rule 1070] Federally Enforceable Through Title V Permit
19. Permittee shall notify the District Compliance Division of each location at which the unit is located in excess of 24 hours. Such notification shall be made no later than 48 hours after starting operation at the location. [District Rule 1070] Federally Enforceable Through Title V Permit
20. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit
21. 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]

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CONDITIONS CONTINUE ON NEXT PAGE

22. Unit shall only be fired on gaseous fuel that includes PUC-quality natural gas, propane, waste/field gas, and TEOR gas or a mixture of any of these fuels. [District Rule 2201] Federally Enforceable Through Title V Permit
23. Sulfur content of PUC-quality natural gas, waste/field gas, TEOR gas, or a mixture of these fuels shall not exceed 1.0 grain per 100 dry standard cubic feet or shall be treated to remove at least 95% by weight of sulfur compounds. [District Rule 2201] Federally Enforceable Through Title V Permit
24. During startup and shutdown, emissions shall not exceed 0.036 lb-NOx/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit
25. Except for periods of startup and shutdown, emissions shall not exceed any of the following limits: 7 ppmvd NOx @ 3% O2 or 0.008 lb-NOx/MMBtu. [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
26. Emissions shall not exceed any of the following limits: 0.016 lb-SOx/MMBtu, 0.0076 lb-PM10/MMBtu, 25 ppmvd CO @ 3% O2 or 0.0185 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
27. Emissions, including startup and shutdown, shall not exceed any of the following limits: 1,752 lb-NOx/year, 3,504 lb-SOx/year, 1,664 lb-PM10/year, or 1,205 lb-VOC/year. [District Rule 2201] Federally Enforceable Through Title V Permit
28. Duration of start-up or shutdown shall not exceed two hours each per occurrence. During start-up or shutdown, the emissions control system shall be in operation, and emissions shall be minimized insofar as technologically possible. The operator shall maintain daily records of the duration of start-up and shutdown periods. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
29. Start-up is defined as the period of time during which a unit is brought from a shutdown status to its operating temperature and pressure, including the time required by the unit's emission control system to reach full operation. Shutdown is defined as the period of time during which a unit is taken from an operational to a non-operational status by allowing it to cool down from its operating temperature to ambient temperature as the fuel supply to the unit is completely turned off. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
30. Source testing to measure natural gas-combustion NOx and CO emissions from this unit shall be conducted within 60 days of initial startup and at least once every twelve (12) months thereafter. 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 Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
31. Source testing and/or stack monitoring prescribed in this permit shall not be required while this equipment is in storage or is located outside of the jurisdiction of the San Joaquin Valley Air Pollution Control District. Upon reactivation from storage or relocation of this equipment within the jurisdiction of the SJVUAPCD, normal source testing and/or stack monitoring shall recommence. If a source test is postponed due to the equipment being in storage or located outside of SJVAPCD jurisdiction, a source test shall be conducted within 60 days of recommencing operation within the jurisdiction of the SJVUAPCD. [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
32. If and when this unit is fired on LPG/propane, source testing to measure NOx and CO emissions from this unit shall be conducted within 60 days of first firing on the LPG/propane fuel. Additional source testing when firing on LPG/propane fuel is not required, but may be conducted and used by the operator to satisfy the applicable twelve (12) month or thirty-six (36) month periodic testing required by this permit. [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
33. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
34. 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

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CONDITIONS CONTINUE ON NEXT PAGE

35. 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
36. NO<sub>x</sub> 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 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
37. CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
38. Stack gas oxygen (O<sub>2</sub>) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
39. 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 4306. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
40. 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 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
41. The operator shall determine within 60 days of first use and annually thereafter the fuel sulfur content of each source of unregulated natural gas fuel combusted in this unit using EPA Method 11 or 15, or ASTM Method D1072, D3246 or D6228 or double GC with mercaptans. In lieu of fuel sulfur content testing, the operator may conduct a source test for combustion SO<sub>x</sub> emissions within 60 days of startup and at least once every 12 months thereafter. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
42. If the unit is fired on regulated natural gas and/or propane, valid purchase contracts, supplier certifications, tariff sheets, or transportation contracts may be used to satisfy the fuel sulfur content analysis, provided they establish the fuel sulfur concentration and higher heating value. [District Rule 4320] Federally Enforceable Through Title V Permit
43. Sulfur content testing is not required for propane. [District Rule 4320] Federally Enforceable Through Title V Permit
44. If the unit is not fired solely on regulated natural gas and compliance is achieved through fuel sulfur content limitations, then the sulfur content of the fuel shall be determined by testing sulfur content at a location after all fuel sources are combined prior to incineration, or by performing mass balance calculations based on monitoring the sulfur content and volume of each fuel source. The sulfur content of the fuel shall be determined using the test methods referenced in this permit. [District Rule 4320] Federally Enforceable Through Title V Permit
45. Operators complying with Sections 5.4.1.1 or 5.4.1.2 shall provide an annual fuel analysis to the District upon request. [District Rule 4320] Federally Enforceable Through Title V Permit
46. The permittee shall monitor and record the stack concentration of NO<sub>x</sub>, CO, and O<sub>2</sub> at least once every month (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 be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
47. If either the NO<sub>x</sub> or CO concentrations corrected to 3% O<sub>2</sub>, 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 the performing the notification and testing required by this condition. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

48. 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 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
49. The permittee shall maintain records of: (1) the date and time of NO<sub>x</sub>, CO, and O<sub>2</sub> measurements, (2) the O<sub>2</sub> concentration in percent and the measured NO<sub>x</sub> and CO concentrations corrected to 3% O<sub>2</sub>, (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 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
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