



JAN 24 2019

Mr. Spencer Hammond  
E&B Natural Resources  
3000 James Road  
Bakersfield, CA 93308

**Re: Proposed ATC / Certificate of Conformity (Significant Mod)**  
**Facility Number: S-1624**  
**Project Number: S-1184033**

Dear Mr. Hammond:

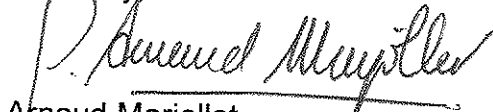
Enclosed for your review is the District's analysis of an application for Authorities to Construct for the facility identified above. You requested that Certificates of Conformity with the procedural requirements of 40 CFR Part 70 be issued with this project. The permits are for five steam generators.

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

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

Thank you for your cooperation in this matter.

Sincerely,



Arnaud Marjollet  
Director of Permit Services

Enclosures

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

Samir Sheikh  
Executive Director/Air Pollution Control Officer

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

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

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

# San Joaquin Valley Air Pollution Control District

## Authority to Construct Application Review

### New Steam Generators

Facility Name: E&B Natural Resources Date: 1/9/19  
Mailing Address: 3000 James Road Engineer: David Torii  
Bakersfield, CA 93308 Lead Engineer: Rich Karrs  
Contact Person: Spencer Hammond  
Telephone: 310-944-1685  
Application #(s): S-1624-338-0, '339-0, '340-0, '341-0 and '342-0  
Project #: 1184033  
Deemed Complete: 11/16/18

---

#### I. Proposal

E&B Natural Resources (EBNR) has requested an Authority to Construct (ATC) permits for the installation of five 85 MMBtu/hr steam generators. Additionally, tank permits S-1624-38 and '39 will be canceled to mitigate the steam generators' VOC emission increase.

EBNR has received their Title V Permit. This modification can be classified as a Title V significant modification pursuant to Rule 2520, and can be processed with a Certificate of Conformity (COC). Since the facility has specifically requested that this project be processed in that manner, the 45-day EPA comment period will be satisfied prior to the issuance of the Authority to Construct. EBNR must apply to administratively amend their Title V permit.

#### II. Applicable Rules

Rule 2201	New and Modified Stationary Source Review Rule (2/18/16)
Rule 2410	Prevention of Significant Deterioration (6/16/11)
Rule 2520	Federally Mandated Operating Permits (6/21/01)
Rule 4001	New Source Performance Standards (4/14/99)
Rule 4101	Visible Emissions (2/17/05)
Rule 4102	Nuisance (12/17/92)
Rule 4201	Particulate Matter Concentration (12/17/92)
Rule 4301	Fuel Burning Equipment (12/17/92)
Rule 4305	Boilers, Steam Generators, and Process Heaters – Phase 2 (8/21/03)
Rule 4306	Boilers, Steam Generators, and Process Heaters – Phase 3 (10/16/08)
Rule 4320	Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters Greater than 5.0 MMBtu/hr (10/16/08)
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 equipment will be located in the Wilcox lease within the SW/4 of Section 4, Township 28S, Range 27E in EBNR's Heavy Oil Central stationary source. 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 TEOR operations, steam generators are used to produce steam which is injected into the production zone to reduce the viscosity of the crude oil and pressurize the oil-bearing strata, thereby facilitating oil flow to producing wells. Produced fluids are then piped to surface facilities for processing and temporary storage.

Production from wells initially enters a gas/liquid separator. Liquid from the gas liquid separator enters wash tanks for separation into oil, gas and water. Separated oil is stored in stock tanks prior to custody transfer.

### V. Equipment Listing

#### Pre-Project Equipment Description (see PTOs in Appendix B):

S-1624-38-3: 1,000 BBL FIXED ROOF PETROLEUM STORAGE TANK, MABRY #8

S-1624-39-3: 1,000 BBL FIXED ROOF PETROLEUM STORAGE TANK, MABRY #9

#### Proposed ATCs:

S-1624-338-0: 85 MMBTU/HR NATURAL GAS/WASTE GAS-FIRED STEAM GENERATOR WITH A NORTH AMERICAN LE-85 BURNER AND FLUE GAS RECIRCULATION (EB-32 - WILCOX)

S-1624-339-0: 85 MMBTU/HR NATURAL GAS/WASTE GAS-FIRED STEAM GENERATOR WITH A NORTH AMERICAN LE-85 BURNER AND FLUE GAS RECIRCULATION (EB-33 - WILCOX)

S-1624-340-0: 85 MMBTU/HR NATURAL GAS/WASTE GAS-FIRED STEAM GENERATOR WITH A NORTH AMERICAN LE-85 BURNER AND FLUE GAS RECIRCULATION (EB-34 - WILCOX)

S-1624-341-0: 85 MMBTU/HR NATURAL GAS/WASTE GAS-FIRED STEAM GENERATOR WITH A NORTH AMERICAN LE-85 BURNER AND FLUE GAS RECIRCULATION (EB-35 - WILCOX)

S-1624-342-0: 85 MMBTU/HR NATURAL GAS/WASTE GAS-FIRED STEAM GENERATOR WITH A NORTH AMERICAN LE-85 BURNER AND FLUE GAS RECIRCULATION (EB-36 - WILCOX)

## 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>.

NO<sub>x</sub> is the major pollutant of concern when burning natural gas. NO<sub>x</sub> formation is either due to thermal fixation of atmospheric nitrogen in the combustion air (thermal NO<sub>x</sub>) or due to conversion of chemically bound nitrogen in the fuel (fuel NO<sub>x</sub>). Due to the low fuel nitrogen content of natural gas, nearly all NO<sub>x</sub> emissions are thermal NO<sub>x</sub>. Formation of thermal NO<sub>x</sub> is affected by four furnace zone factors: (1) nitrogen concentration, (2) oxygen concentration, (3) peak temperature, and (4) time of exposure at peak temperature.

Low-NO<sub>x</sub> burners reduce NO<sub>x</sub> formation by producing lower flame temperatures (and longer flames) than conventional burners. Low-NO<sub>x</sub> burners delay the mixing of fuel and air by introducing the fuel (or sometimes air) in multiple stages. In the first stage, the air-fuel mixture is fuel-rich in which the oxygen is consumed in reactions with the fuel, thereby limiting excess oxygen available to react with nitrogen to produce thermal NO<sub>x</sub>.

The combustion zones in the secondary and tertiary stages are maintained in a fuel-lean environment. The excess air in these stages helps to reduce the flame temperature, which in turn minimizes the reaction between excess oxygen and nitrogen. The North American burner incorporates patented internal mixing elements that pre-mix the fuel and air prior to combustion in the reaction zone. By completing a majority of the combustion in the burner reaction chamber, the low emissions of the burner are protected from process influences.

Flue gas recirculation (FGR) reduces NO<sub>x</sub> emissions by recirculating a percentage of the exhaust gas back into the windbox. This reduces the oxygen concentration in the air-fuel mixture and regulates the combustion process, lowering the combustion temperature. The lowered availability of oxygen in conjunction with lowered combustion temperature reduces the formation of NO<sub>x</sub>.

Tanks S-1624-38 and '39 are each equipped with a pressure-vacuum (PV) relief vent valve set to within 10% of the maximum allowable working pressure of the tanks. PV-valves reduce VOC wind induced emissions from the tank vent.

## VII. General Calculations

### A. Assumptions

#### Steam Generators:

- Maximum heat input rating = 85 MMBtu/hr (each steam generator)
- F-Factor for Natural Gas @ 60°F: 8,578 dscf/MMBtu
- Gas Molar Vol 60 °F =  $10.7316 \text{ psia ft}^3/\text{lbmol} \times 519.67 \text{ R}/(14.696 \text{ psia/atm})$   
= 378.61 ft<sup>3</sup>/lbmol
- Natural Gas Heating Value = 1,000 Btu/scf

#### Tank S-1624-38 and '39:

- Throughput = one turnover/day (District practice for tanks without a throughput limit)
- Pre-project TVP limit = 0.5 psia (PTO)

- Volume = 1,000 bbls (PTO)
- Not constant level

## B. Emission Factors

Pollutant	Steam Generators Emission Factors (EF)		Source
NO <sub>x</sub>	0.0062 lb-NO <sub>x</sub> /MMBtu	5 ppmvd NO <sub>x</sub> (@ 3%O <sub>2</sub> )	Proposed and BACT
SO <sub>x</sub>	0.00285 lb SO <sub>2</sub> /MMBtu	1.0 gr S/100 scf	Proposed and APR 1720
PM <sub>10</sub>	*0.0035 lb-PM <sub>10</sub> /MMBtu		Proposed
CO	0.0185 lb-CO/MMBtu	25 ppmv CO @3% O <sub>2</sub>	BACT
VOC	0.0055 lb-VOC/MMBtu	13 ppmv VOC @3% O <sub>2</sub>	Proposed & AP-42 (07/98) Table 1.4-2

\*The District has determined that steam generators fired solely on PUC-quality natural gas have PM<sub>10</sub> emissions no greater than 0.003 lb-PM<sub>10</sub>/ MMBtu. The applicant has conservatively proposed a limit of 0.0035 lb-PM<sub>10</sub>/ MMBtu.

The PE for tanks S-1624-38 and '39 are based on the results from the District's Microsoft Excel spreadsheets for Tank Emissions - Fixed Roof Crude Oil less than 26° API.

## C. Calculations

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

Since the steam generators are new emissions units, PE1 = 0 for all pollutants.

PE1*		
Tanks	Daily Emissions (lb/day)	Annual Emissions (lb/year)
S-1624-38	52.2	19,051
S-1624-39	52.2	19,051
Total:		38,102

\*See emission calculations in Appendix C

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

The potential to emit for each steam generator is summarized in the tables below:

Pollutant	Daily PE2			
	EF2 (lb/M MBtu)	Heat Input (M MBtu/hr)	Operating Schedule (hr/day)	Daily PE2 (lb/day)
NO <sub>x</sub>	0.0062	85	24	12.6
SO <sub>x</sub>	0.0029	85	24	5.8
PM <sub>10</sub>	0.0035	85	24	7.1
CO	0.0185	85	24	37.7
VOC	0.0055	85	24	11.2

Pollutant	Annual PE2			
	EF2 (lb/M MBtu)	Heat Input (M MBtu/hr)	Operating Schedule (hr/year)	Annual PE2 (lb/year)
NO <sub>x</sub>	0.0062	85	8,760	4,617
SO <sub>x</sub>	0.0029	85	8,760	2,122
PM <sub>10</sub>	0.0035	85	8,760	2,606
CO	0.0185	85	8,760	13,775
VOC	0.0055	85	8,760	4,095

Total PE2					
	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	CO	VOC
S-1624-338-0	4,617	2,122	2,606	13,775	4,095
S-1624-339-0	4,617	2,122	2,606	13,775	4,095
S-1624-340-0	4,617	2,122	2,606	13,775	4,095
S-1624-341-0	4,617	2,122	2,606	13,775	4,095
S-1624-342-0	4,617	2,122	2,606	13,775	4,095
Total:	23,085	10,610	13,030	68,875	20,475

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

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

SSPE1 (lb/year)					
	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	CO	VOC
SSPE1*	161,406	65,642	77,098	650,012	>> 20,000

\*from latest project S1183307

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

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

SSPE2 (lb/year)					
Permit Unit	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	CO	VOC
SSPE1	161,406	65,642	77,098	650,012	>> 20,000
S-1624-38-3	0	0	0	0	-19,051
S-1624-39-3	0	0	0	0	-19,051
S-1624-338-0	4,617	2,122	2,606	13,775	4,095
S-1624-339-0	4,617	2,122	2,606	13,775	4,095
S-1624-340-0	4,617	2,122	2,606	13,775	4,095
S-1624-341-0	4,617	2,122	2,606	13,775	4,095
S-1624-342-0	4,617	2,122	2,606	13,775	4,095
<b>SSPE2</b>	<b>184,491</b>	<b>76,252</b>	<b>90,128</b>	<b>718,887</b>	<b>&gt;&gt;20,000</b>
<b>SSIPE</b>	<b>23,085</b>	<b>10,610</b>	<b>13,030</b>	<b>68,875</b>	<b>-17,627</b>

#### 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

Rule 2201 Major Source Determination (lb/year)						
	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO	VOC
SSPE1	161,406	65,642	77,098	77,098	650,012	>>20,000
SSPE2	184,491	76,252	90,128	90,128	718,887	>>20,000
Major Source Threshold	20,000	140,000	140,000	140,000	200,000	20,000
Major Source?	y	n	n	n	y	y

Note: PM2.5 assumed to be equal to PM10

This source is an existing Major Source for NO<sub>x</sub>, CO and VOC emissions and will remain so. No change in other pollutants are proposed or expected as a result of this project.

**Rule 2410 Major Source Determination:**

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

PSD Major Source Determination (tons/year)						
	NO <sub>2</sub>	VOC	SO <sub>2</sub>	CO	PM	PM <sub>10</sub>
Estimated Facility PE before Project Increase				>250		
PSD Major Source Thresholds	250	250	250	250	250	250
PSD Major Source?				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 lb/year) is performed pollutant-by-pollutant for each unit within the project to calculate 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 steam generators are new emissions units, 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."

Since this facility is a major source for NO<sub>x</sub> and VOC the project's PE2 is compared to the SB 288 Major Modification Thresholds in the following table in order to determine if the SB 288 Major Modification calculation is required.



SB 288 Major Modification Thresholds			
Pollutant	Project PE2 (lb/year)	Threshold (lb/year)	SB 288 Major Modification Calculation Required?
NO <sub>x</sub>	23,085	50,000	N
SO <sub>x</sub>	NA	80,000	
PM <sub>10</sub>	NA	30,000	
VOC	20,475	50,000	N

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

## 8. Federal Major Modification

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

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

### Step 1

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

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

Federal Major Modification Thresholds for Emission Increases			
Pollutant	Total Emissions Increases (lb/yr)	Thresholds (lb/yr)	Federal Major Modification?
NO <sub>x</sub>	23,085	0	Y
VOC	20,475	0	Y
PM <sub>10</sub>	NA	30,000	
PM <sub>2.5</sub>	NA	20,000	
SO <sub>x</sub>	NA	80,000	

Since there is an increase in NO<sub>x</sub> and VOC emissions, this project constitutes a Federal Major Modification. Federal Offset quantities are calculated below.

### Federal Offset Quantities:

The Federal offset quantity is only calculated only for the pollutants for which the project is a Federal Major Modification. The Federal offset quantity is the sum of the annual emission changes for all new and modified emission units in a project calculated as the potential to emit after the modification (PE2) minus the actual emissions (AE) during the

baseline period for each emission unit multiplied by the applicable federal offset ratio. There are no special calculations performed for units covered by an SLC.

NOx		Federal Offset Ratio		1.5
Permit No.	Actual Emissions (lb/year)	Potential Emissions (lb/year)	Emissions Change (lb/yr)	
S-1624-338-0	NA	4,617	4,617	
S-1624-339-0	NA	4,617	4,617	
S-1624-340-0	NA	4,617	4,617	
S-1624-341-0	NA	4,617	4,617	
S-1624-342-0	NA	4,617	4,617	
Net Emission Change (lb/year):			23,085	
Federal Offset Quantity: (NEC * 1.5)			34,628	

VOC		Federal Offset Ratio		1.5
Permit No.	Actual Emissions (lb/year)	Potential Emissions (lb/year)	Emissions Change (lb/yr)	
S-1624-338-0	NA	4,095	4,095	
S-1624-339-0	NA	4,095	4,095	
S-1624-340-0	NA	4,095	4,095	
S-1624-341-0	NA	4,095	4,095	
S-1624-342-0	NA	4,095	4,095	
Net Emission Change (lb/year):			20,475	
Federal Offset Quantity: (NEC * 1.5)			30,713	

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

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

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

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

### II. Project Emission Increase – Significance Determination

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

As a screening tool, the post-project potential to emit from all new and modified units is compared to the PSD significant emission increase thresholds, and if the total potentials to emit from all new and modified units are below the applicable thresholds, no further PSD analysis is needed.

<b>PSD Significant Emission Increase Determination: Potential to Emit (tons/year)</b>					
	<b>NO<sub>2</sub></b>	<b>SO<sub>2</sub></b>	<b>CO</b>	<b>PM</b>	<b>PM<sub>10</sub></b>
Total PE from New and Modified Units	12	5	34	7	7
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 QNEC is calculated solely to establish emissions that are used to complete the District's PAS emissions profile screen. Detailed QNEC calculations are included in Appendix A.

### **VIII. Compliance Determination**

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

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

##### **1. BACT Applicability**

Pursuant to District Rule 2201, Section 4.1, BACT requirements are triggered on a pollutant-by-pollutant basis and on an emissions unit-by-emissions unit basis. Unless specifically exempted by Rule 2201, BACT shall be required for the following actions\*:

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

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

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

As seen in Section VII.C.2 above, the applicant is proposing to install new steam generators each with a PE greater than 2 lb/day for NO<sub>x</sub>, SO<sub>x</sub>, PM<sub>10</sub>, CO, and VOC. Therefore BACT for new units with PE > 2 lb/day purposes is triggered for NO<sub>x</sub>, SO<sub>x</sub>, PM<sub>10</sub>, CO, and VOC.

**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 Sections VII.C.7 and VII.C.8 above, this project does constitute a Federal Major Modification for NO<sub>x</sub> and VOC emissions. 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 the oilfield steam generators greater  $\geq$  20 MMBtu/hr. [Oilfield Steam Generator ( $>$  or  $=$ 20 MMBtu/hr)] (See **Appendix D**)

**3. Top-Down BACT Analysis**

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

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

NO <sub>x</sub> :	5 ppmvd @ 3% O <sub>2</sub>
SO <sub>x</sub> and PM <sub>10</sub> :	gaseous fuel treated such that the sulfur content does not exceed 1 gr of sulfur compounds (as S) per 100 dscf
CO:	25 ppmvd or less @ 3% O <sub>2</sub>
VOC:	Gaseous fuel

**B. Offsets****1. Offset Applicability**

Pursuant to District Rule 2201, Section 4.5, offset requirements shall be triggered on a pollutant by pollutant basis and shall be required if the SSPE2 equals or exceeds the offset threshold levels in Table 4-1 of Rule 2201.

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

Offset Determination (lb/year)					
	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	CO	VOC
SSPE2	184,491	76,252	90,128	718,887	>>20,000
Offset Thresholds	20,000	54,750	29,200	200,000	20,000
Offsets triggered?	y	y	y	y	y

## 2. Quantity of Offsets Required

The quantity of offsets in pounds per year for NO<sub>x</sub> is calculated as follows for sources with an SSPE1 greater than the offset threshold levels before implementing the project being evaluated.

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

Where,

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

BE = Baseline Emissions, (lb/year)

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

DOR = Distance Offset Ratio, determined pursuant to Section 4.8

BE = PE1 for:

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

otherwise,

BE = HAE

The facility is proposing to install new steam generators; therefore their BEs = 0. Also, there are no increases in cargo carrier emissions; therefore offsets can be determined as follows:

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

### NO<sub>x</sub>:

PE2 (NO<sub>x</sub>) = 4617 lb/year

BE (NO<sub>x</sub>) = 0 lb/year

The project is a Federal Major Modification for NO<sub>x</sub>. therefore the correct offset ratio for NO<sub>x</sub> is 1.5:1.

$$\begin{aligned}\text{Offsets Required (lb/year)} &= (4617 - 0) \times 1.5 \\ &= 6926 \text{ lb NO}_x/\text{year}\end{aligned}$$

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

$$\begin{aligned}\text{Quarterly offsets required (lb/qtr)} &= (6926 \text{ lb NO}_x/\text{year}) \div (4 \text{ quarters/year}) \\ &= 1731.5 \text{ lb/qtr}\end{aligned}$$

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

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

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

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

	1 <sup>st</sup> Quarter	2 <sup>nd</sup> Quarter	3 <sup>rd</sup> Quarter	4 <sup>th</sup> Quarter
S-1624-338-0	1731	1731	1732	1732
S-1624-339-0	1731	1731	1732	1732
S-1624-340-0	1731	1731	1732	1732
S-1624-341-0	1731	1731	1732	1732
S-1624-342-0	1731	1731	1732	1732
<b>Total</b>	<b>8655</b>	<b>8655</b>	<b>8660</b>	<b>8660</b>

The applicant has stated that the facility plans to use ERC certificate S-5016-2 to offset the increases in NO<sub>x</sub> emissions associated with this project. The above certificate has available quarterly NO<sub>x</sub> credits as follows:

	<u>1<sup>st</sup> Quarter</u>	<u>2<sup>nd</sup> Quarter</u>	<u>3<sup>rd</sup> Quarter</u>	<u>4<sup>th</sup> Quarter</u>
ERC #S-5016-2	8900	8900	8900	8900

As seen above, the facility has sufficient credits to fully offset the quarterly NO<sub>x</sub> emissions increases associated with this project.

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

- {GC# 4447 - edited} Prior to operating equipment under this Authority to Construct, permittee shall surrender NO<sub>x</sub> emission reduction credits for the following quantity of emissions: 1st quarter – 1,731 lb, 2nd quarter - 1,731 lb, 3rd quarter - 1,732 lb, and 4th quarter - 1,732 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 2/18/16) for the ERC specified below. [District Rule 2201]
- ERC Certificate Number S-5016-2 (or a certificate split from this certificate) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201]

**SO<sub>x</sub>:**

PE2 (SO<sub>x</sub>) = 2122 lb/year  
 BE (SO<sub>x</sub>) = 0 lb/year

The approved distance offset ratio is 1:1.2 because the emission reduction originated less than 15 miles for the proposed unit.

$$\begin{aligned} \text{Offsets Required (lb/year)} &= (2122 - 0) \times 1.2 \\ &= 2546 \text{ lb SO}_x\text{/year} \end{aligned}$$

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

$$\begin{aligned} \text{Quarterly offsets required (lb/qtr)} &= (2546 \text{ lb SO}_x\text{/year}) \div (4 \text{ quarters/year}) \\ &= 636.5 \text{ lb/qtr} \end{aligned}$$

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

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

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

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

	1 <sup>st</sup> Quarter	2 <sup>nd</sup> Quarter	3 <sup>rd</sup> Quarter	4 <sup>th</sup> Quarter
S-1624-338-0	636	636	637	637
S-1624-339-0	636	636	637	637
S-1624-340-0	636	636	637	637
S-1624-341-0	636	636	637	637
S-1624-342-0	636	636	637	637
Total	3180	3180	3185	3185

The applicant has stated that the facility plans to use ERC certificates S-5018-5 and S-5020-5 to offset the increases in SO<sub>x</sub> emissions associated with this project. The above certificates has available quarterly NO<sub>x</sub> credits as follows:

	1 <sup>st</sup> Quarter	2 <sup>nd</sup> Quarter	3 <sup>rd</sup> Quarter	4 <sup>th</sup> Quarter
ERC # S-5018-5	12,194	8,550	8,550	10,195
ERC # S-5020-5	4,906	8,550	8,550	6,905
Total:	17,100	17,100	17,100	17,100

As seen above, the facility has sufficient credits to fully offset the quarterly SO<sub>x</sub> emissions increases associated with this project.

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

- {GC# 4447 - edited} Prior to operating equipment under this Authority to Construct, permittee shall surrender SO<sub>x</sub> emission reduction credits for the following quantity of emissions: 1st quarter – 636 lb, 2nd quarter – 636 lb, 3rd quarter – 637 lb, and 4th quarter – 637 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 2/18/16) for the ERC specified below. [District Rule 2201]
- ERC Certificate Numbers S-5018-5 and S-5020-5 (or a certificate(s) split from these certificate(s)) 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]



**PM10:**

$$\begin{aligned} \text{PE2 (PM10)} &= 2606 \text{ lb/year} \\ \text{BE (PM10)} &= 0 \text{ lb/year} \end{aligned}$$

Interpollutant offset ratios for trades between SO<sub>x</sub> and PM<sub>10</sub> are allowed pursuant to Rule 2201, Section 4.13.3.1.2. Pursuant to draft District policy APR 1430, SO<sub>x</sub> ERCs may be used to offset PM10 at an interpollutant ratio of 1.0 : 1.0. An interpollutant ratio of 1.0 : 1.0 for SO<sub>x</sub> to PM<sub>10</sub> will be applied.

The approved distance offset ratio is 1:1.2 because the emission reduction originated less than 15 miles for the proposed unit.

$$\begin{aligned} \text{Offsets Required (lb/year)} &= (2606 - 0) \times 1.2 \\ &= 3127 \text{ lb PM10/year} \end{aligned}$$

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

$$\begin{aligned} \text{Quarterly offsets required (lb/qtr)} &= (3127 \text{ lb PM10/year}) \div (4 \text{ quarters/year}) \\ &= 781.75 \text{ lb/qtr} \end{aligned}$$

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

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

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

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

	1 <sup>st</sup> Quarter	2 <sup>nd</sup> Quarter	3 <sup>rd</sup> Quarter	4 <sup>th</sup> Quarter
S-1624-338-0	781	782	782	782
S-1624-339-0	781	782	782	782
S-1624-340-0	781	782	782	782
S-1624-341-0	781	782	782	782
S-1624-342-0	781	782	782	782
Total	3905	3910	3910	3910

The applicant has stated that the facility plans to use ERC certificates S-5018-5 and S-5020-5 to offset the increases in PM10 emissions associated with this project. The above certificates has available quarterly NO<sub>x</sub> credits as follows:

	1 <sup>st</sup> Quarter	2 <sup>nd</sup> Quarter	3 <sup>rd</sup> Quarter	4 <sup>th</sup> Quarter
ERC # S-5018-5	12,194	8,550	8,550	10,195
ERC # S-5020-5	4,906	8,550	8,550	6,905
Total:	17,100	17,100	17,100	17,100

As seen above, the facility has sufficient credits to fully offset the quarterly SO<sub>x</sub> emissions increases associated with this project.

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

- {GC# 4447 - edited} Prior to operating equipment under this Authority to Construct, permittee shall surrender SO<sub>x</sub> (for PM10) emission reduction credits for the following quantity of emissions: 1st quarter – 781 lb, 2nd quarter – 782 lb, 3rd quarter – 782 lb, and 4th quarter – 782 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 2/18/16) for the ERC specified below. [District Rule 2201]
- ERC Certificate Numbers S-5018-5 and S-5020-5 (or a certificate(s) split from these certificate(s)) 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]

**CO:**

Pursuant to section 4.6.1 of Rule 2201, increases in CO in attainment areas are exempt from offsetting 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. As shown below in section VII.F, Ambient Air Quality Standards are not violated; therefore, offsets are not required for CO.

**VOC:**

PE1 (five SGs) = 0  
 PE2 (five SGs) = 20,475 lb/year  
 BE (both tanks) = 38,102 lb/year  
 PE2 (both tanks) = 0

The project is a Federal Major Modification for VOC and therefore the correct offset ratio for VOC is 1.5:1.

$$\begin{aligned} \text{Offsets Required (lb/year)} &= (20,475 - 38,102) \times 1.5 \\ &= 0 \text{ lb VOC/year} \end{aligned}$$

As demonstrated in the calculation above, the amount of VOC offsets is zero. Therefore, VOC offsets will not be required for this project.

**3. ERC Withdrawal Calculations**

The applicant must identify the ERC Certificate(s) to be used to offset the increase of emissions for the project. As indicated in previous section, the applicant is proposing to use the identified ERC certificates to mitigate the increases of NO<sub>x</sub>, SO<sub>x</sub> and PM<sub>10</sub> emissions associated with this project. See **Appendix E** for detailed ERC Withdrawal Calculations.

**C. Public Notification****1. Applicability**

Pursuant to District Rule 2201, Section 5.4, 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,
- d. Any project with an SSIPE of greater than 20,000 lb/year for any pollutant, and/or
- e. Any project which results in a Title V significant permit modification

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

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

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

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

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

**c. Offset Threshold**

Pursuant to District Rule 2201, Section 4.5.3, offset requirements shall be triggered on a pollutant-by-pollutant basis, unless exempted pursuant to Section 4.6, offsets shall be required if the post-project Stationary Source Potential to Emit (SSPE2) equals or exceeds specific threshold levels.

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

Offset Thresholds				
Pollutant	SSPE1 (lb/year)	SSPE2 (lb/year)	Offset Threshold	Public Notice Required?
NO <sub>x</sub>	161,406	184,491	20,000 lb/year	No
SO <sub>x</sub>	65,642	76,252	54,750 lb/year	No
PM <sub>10</sub>	77,098	90,128	29,200 lb/year	No
CO	650,012	718,887	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 SSIPE of more than 20,000 lb/year of any affected pollutant. According to District policy, the SSIPE = SSPE2 – SSPE1. The SSIPE is compared to the SSIPE Public Notice thresholds in the following table.

SSIPE Public Notice Thresholds					
Pollutant	SSPE1 (lb/year)	SSPE2 (lb/year)	SSIPE (lb/year)	SSIPE Public Notice Threshold	Public Notice Required?
NO <sub>x</sub>	161,406	184,491	23,085	20,000 lb/year	Y
SO <sub>x</sub>	65,642	76,252	10,610	20,000 lb/year	N
PM <sub>10</sub>	77,098	90,128	13,030	20,000 lb/year	N
CO	650,012	718,887	68,875	20,000 lb/year	Y
VOC			-17,627	20,000 lb/year	N

As demonstrated above, the SSIPEs for NO<sub>x</sub> and CO were greater than 20,000 lb/year; therefore public noticing for SSIPE purposes is 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 NO<sub>x</sub> and VOC emissions triggering a Federal Major Modification and the IPE of NO<sub>x</sub> and CO greater than 20,000 lb/year. Therefore, public notice documents will be submitted to the California Air Resources Board (CARB) and a public notice will be published in a local newspaper of general circulation prior to the issuance of the ATC for this equipment.

## **D. Daily 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.

### **Proposed Rule 2201 (DEL) Conditions:**

*The unit shall only be fired on natural gas/waste gas with a maximum sulfur content of 1.0 gr S/100 scf. [District Rules 2201 and 4320]*

*Emission rates shall not exceed any of the following: NO<sub>x</sub> (as NO<sub>x</sub>): 5 ppmvd @ 3% O<sub>2</sub> or 0.0062 lb/MMBtu; SO<sub>x</sub>: 0.00285 lb/MMBtu; PM<sub>10</sub>: 0.0035 lb/MMBtu; CO: 25 ppmvd @ 3% O<sub>2</sub> or 0.0185 lb-CO/MMBtu; or VOC: 0.0055 lb/MMBtu. [District Rules 2201 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.

### **1. 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.

## 2. 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 condition will be listed on permits as follows:

*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)]*

*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)]*

## 4. Reporting

No reporting is required to demonstrate compliance with Rule 2201.

### F. Ambient Air Quality Analysis (AAQA)

An AAQA shall be conducted for the purpose of determining whether a new or modified Stationary Source will cause or make worse a violation of an air quality standard. The District's Technical Services Division conducted the required analysis. Refer to Appendix F of this document for the AAQA summary sheet.

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. As shown by the AAQA summary sheet 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 Federal Major Modification to demonstrate to the satisfaction of the District that all other Major Sources owned by such person and operating in California are in compliance or are on a schedule for compliance with all applicable emission limitations and standards. As discussed in Section VIII above, this facility is a new major source and this project does constitute a Federal Major Modification, therefore this requirement is applicable. E&B's compliance certification is included in Appendix F.

### H. Alternate Siting Analysis

The current project occurs at an existing facility. The applicant proposes to install steam generators.

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

#### **Rule 2410 Prevention of Significant Deterioration**

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

#### **Rule 2520 Federally Mandated Operating Permits**

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

Minor permit modifications are not Title I modifications as defined in this rule. This project triggers a Federal Major Modification, as a result, the proposed project constitutes a Significant Modification to the Title V Permit. E&Bs Title V Compliance Certification form is included in Appendix G.

#### **Rule 4001 New Source Performance Standards (NSPS)**

##### **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-Institutional 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 85 MMBtu/hr steam generators are subject to Subpart Dc requirements.

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

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

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

The steam generators do not fired on coal, combust mixtures of coal with other fuels, combust wood, combust mixtures 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 generators in this project are 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 generators in this project.

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

Since the steam generators 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 generators 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 generators in this project.

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

Since the steam generators 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 generators 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, anticipated startup, 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, anticipated startup, 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 Rule 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**

Rule 4101 states that 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). As the steam generators are fired solely on natural gas, visible emissions are not expected to exceed Ringelmann 1 or 20% opacity. Also, based on past inspections of the facility continued compliance is expected.

#### **Rule 4102 Nuisance**

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

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

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

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

The cancer risk for this project is shown below:

Units	Prioritization Score	Acute Hazard Index	Chronic Hazard Index	Maximum Individual Cancer Risk	T-BACT Required	Special Permit Requirements
338-0	0.02	0.00	0.00	4.80E-09	No	Yes
339-0	0.02	0.00	0.00	4.80E-09	No	Yes
340-0	0.02	0.00	0.00	4.80E-09	No	Yes
341-0	0.02	0.00	0.00	4.80E-09	No	Yes
342-0	0.02	0.00	0.00	4.80E-09	No	Yes
Project Totals	0.24	0.00	0.00	2.40E-08		
Facility Totals	>1	0.73	0.03	1.69E-05		

### Discussion of T-BACT

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

### Rule 4201 Particulate Matter Concentration

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

F-Factor for NG: 8,578 dscf/MMBtu at 60 °F

PM<sub>10</sub> Emission Factor: 0.005 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%

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

$$GL = \left( \frac{0.0035 \text{ lb-PM}}{\text{MMBtu}} \times \frac{7,000 \text{ grain}}{\text{lb-PM}} \right) / \left( \frac{8,578 \text{ ft}^3}{\text{MMBtu}} \times 1.17 \right)$$

$$GL = 0.002 \text{ grain/dscf} < 0.1 \text{ grain/dscf}$$

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

### Rule 4305 Boilers, Steam Generators and Process Heaters – Phase 2

Pursuant to Rule 4305, Section 2.0, the proposed new unit will be subject to Rule 4305. Also, the proposed new unit will also be subject to Rule 4306. Since emissions limits of Rule 4306 and all other requirements are equivalent to or more stringent than Rule 4305 requirements, compliance with Rule 4320 requirements will satisfy requirements of Rule 4305.

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

Pursuant to Rule 4306, Section 2.0, the proposed unit will be subject to Rule 4306. Also, the proposed unit will also be subject to Rule 4320. Since emissions limits of Rule 4320 and all other requirements are equivalent to or more stringent than Rule 4306 requirements, compliance with Rule 4320 requirements will satisfy requirements of Rule 4306.

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

This rule limits NO<sub>x</sub>, CO, SO<sub>2</sub> and PM<sub>10</sub> emissions from boilers, steam generators and process heaters rated greater than 5 MMBtu/hr. This rule also provides a compliance option of payment of fees in proportion to the actual amount of NO<sub>x</sub> emitted over the previous year.

The steam generators are rated at greater than 5 MMBtu/hr heat input. Therefore, this rule applies.

**Section 5.1 NO<sub>x</sub> Emission Limits**

Section 5.1 states that an operator of a unit(s) subject to this rule shall comply with all applicable requirements of the rule and one of the following, on a unit-by-unit basis:

- Operate the unit to comply with the emission limits specified in Sections 5.2 and 5.4; or
- Pay an annual emissions fee to the District as specified in Section 5.3 and comply with the control requirements specified in Section 5.4; or
- Comply with the applicable Low-use Unit requirements of Section 5.5.

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.

The units have a maximum heat input of 85.0 MMBtu/hr; therefore, the applicable emission limit category Section 5.2, Table 1, Category C.2 from District Rule 4320 applies as follows:

C. Oilfield Steam Generators			
Category	NO <sub>x</sub> Limit	Authority to Construct	Compliance Deadline
2. Units with a total rated heat input >20.0 MMBtu/hr	a) Standard Schedule 7 ppmv or 0.008 lb/MMBtu; or	July 1, 2009	July 1, 2010
	b) Staged Enhanced Schedule Initial Limit 9 ppmv or 0.011 lb/MMBtu; and	July 1, 2011	July 1, 2012
	Final Limit 5 ppmv or 0.0062 lb/MMBtu	January 1, 2013	January 1, 2014

EBNR has proposed to comply with Rule 4320 by limiting the burners to 5 ppm-NO<sub>x</sub> @ 3% O<sub>2</sub> (or 0.0062 lb-NO<sub>x</sub>/MMBtu). The following condition will be listed on the ATCs to ensure compliance:

*Emission rates shall not exceed any of the following: NO<sub>x</sub> (as NO<sub>x</sub>): 5 ppmvd @ 3% O<sub>2</sub> or 0.0062 lb/MMBtu; SO<sub>x</sub>: 0.00285 lb/MMBtu; PM<sub>10</sub>: 0.0035 lb/MMBtu; CO: 25 ppmvd @ 3% O<sub>2</sub> or 0.0185 lb-CO/MMBtu; or VOC: 0.0055 lb/MMBtu. [District Rules 2201 and 4320]*

## **Section 5.4 Particulate Matter Control Requirements**

5.4.1 To limit particulate matter emissions, an operator shall comply with one of the following requirements:

5.4.1.1 On and after the applicable NO<sub>x</sub> Compliance Deadline specified in Section 5.2 Table 1, operators shall fire units exclusively on PUC-quality natural gas, commercial propane, butane, or liquefied petroleum gas, or a combination of such gases;

5.4.1.2 On and after the applicable NO<sub>x</sub> Compliance Deadline specified in Section 5.2 Table 1, operators shall limit fuel sulfur content to no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet; or

5.4.1.3 On and after the applicable NO<sub>x</sub> Compliance Deadline specified in Section 5.2 Table 1, operators shall 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>.

5.4.1.4 Notwithstanding the compliance deadlines indicated in Sections 5.4.1.1 through 5.4.1.3, refinery units, which require modification of refinery equipment to reduce sulfur emissions, shall be in compliance with the applicable requirement in Section 5.4.1 no later than July 1, 2013.

EBNR has addressed the particulate matter requirement by proposing to fire the unit on fuel with a sulfur content to no more than one (1) grain of total sulfur per one hundred (100) standard cubic feet.

*The unit shall only be fired on natural gas/waste gas with a maximum sulfur content of 1 gr S/100 scf. [District Rules 2201 and 4320] N*

Compliance with section 5.4 is expected.

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

Section 5.6 states that on and after the full compliance deadline specified 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.

Emissions during start-up and shutdown are not be subject to the emission limits in Sections 5.2 and 5.2.2. Start-up and shutdown provisions are not proposed.

## **Section 5.7 Monitoring Provisions**

Section 5.7.1 requires that permit units subject to District Rule 4320, Section 5.2 shall both install and maintain an operational APCO approved Continuous Emission Monitoring System (CEMS) for NO<sub>x</sub>, CO and O<sub>2</sub>, or implement an APCO-approved alternate monitoring.

EBNR proposes to use 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 ATCs to ensure compliance with the requirements of the proposed alternate monitoring plan:

*{4063} 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 analyzer 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]*

*If the NO<sub>x</sub> or CO concentrations corrected to 3%, as measured by the portable analyzer, exceed the applicable emission limit, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4102, 4305, 4306 and 4320] Y*

*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 sample 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 4102, 4305, 4306 and 4320] Y*

*{4066} 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 within the acceptable range. [District Rules 4305, 4306 and 4320]*

*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 PTO, 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] Y*

Section 5.7.6 requires operators complying with Sections 5.4.1.1 or 5.4.1.2 to provide an annual fuel analysis to the District unless a more frequent sampling and reporting period is included in the Permits to Operate. Sulfur analysis shall be performed in accordance with the test methods in Section 6.2.

*When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, permittee shall demonstrate compliance at least annually. [District Rule 4320]*

The following condition will be listed on the ATCs to ensure compliance with the reporting section of this requirement:

*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]*

## **Section 5.8 Compliance Determination**

Section 5.8.1 requires that the operator of any unit shall 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 ATCs as follows:

*{2976} The source test 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. 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 permit condition will be listed on the ATCs as follows:

*{2972} 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. 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 permit condition will be listed on the ATCs as follows:

*{4065} 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 ATCs as follows:

*{2980} 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 and EPA upon request. Failure to maintain records or information contained in the records that demonstrate noncompliance with the applicable requirements of this rule shall constitute a violation of this rule.

A permit condition will be listed on the ATCs as follows:

*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]*

### **Section 6.2, Test Methods**

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

<b>Pollutant</b>	<b>Units</b>	<b>Test Method Required</b>
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
Stack Gas Moisture Content	%	EPA Method 4
Oxides of sulfur		EPA Method 6C, EPA Method 8, or ARB Method 100

Pollutant	Units	Test Method Required
Total Sulfur as Hydrogen Sulfide (H <sub>2</sub> S) Content		EPA Method 11 or EPA Method 15, as appropriate.
Sulfur Content of Liquid Fuel		ASTM D 6920-03 or ASTM D 5453-99

The following permit condition will be listed on the ATCs as follows:

*The following test methods shall be used: NOX (ppmv) - EPA Method 7E or ARB Method 100, NOx (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; SOx - 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 2201, 4305, 4306, 4320] N*

### Section 6.3, Compliance Testing

Section 6.3.1 requires that this unit be tested to determine compliance with the applicable requirements of section 5.1 and 5.2.3 not less than once every 12 months. Upon demonstrating compliance on two consecutive compliance source tests, the following source test may be deferred for up to thirty-six months.

The following permit conditions will be listed on the ATCs:

*A source test to demonstrate compliance with NOx and CO emission limits shall be performed within 60 days of startup of this unit. [District Rules 220, 4305, 4306 and 4320]*

*Source testing to measure natural gas-combustion NOx and CO emissions from this unit shall be conducted at least once every twelve (12) months (no more than 30 days before or after the required annual source test date). After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months (no more than 30 days before or after the required 36-month source test date). 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 4305, 4306 and 4320]*

*The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081]*

### Section 7.0, Compliance Schedule

Section 7.0 identifies the dates by which the operator shall submit an application for an ATC and the date by which the owner shall demonstrate compliance with this rule.

The unit will be in compliance with the emissions limits listed in Table 1, Section 5.2 of this rule, and periodic monitoring and source testing as required by District Rule 4320. Therefore, requirements of the compliance schedule, as listed in Section 7.0 of District Rule 4320, are satisfied. No further discussion is required.



## Conclusion

Conditions will be incorporated into the permit in order to ensure compliance with each section of this rule. Therefore, 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. The facility is a NO<sub>x</sub> Major Sources is located east of Interstate five. Therefore, this rule applies. Since emissions limits of Rule 4320 and all other requirements are equivalent to, or more stringent, than Rule 4351 requirements, compliance with Rule 4320 requirements will satisfy requirements of Rule 4351.

### 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. As the combustion equipment associated with this project will be fired on PUC quality natural gas, compliance with the requirements of this rule is expected.

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

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

### California Environmental Quality Act (CEQA)

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

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

### Greenhouse Gas (GHG) Significance Determination

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

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

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

### **District CEQA Findings**

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

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

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

### **Indemnification Agreement/Letter of Credit Determination**

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

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

## IX. Recommendation

Compliance with all applicable rules and regulations is expected. Pending a successful NSR Public Noticing period, issue the ATCs subject to the permit conditions on the attached draft ATCs in **Appendix G**.

## X. Billing Information

Annual Permit Fees			
Permit Number	Fee Schedule	Fee Description	Annual Fee
S-1624-338-0	3020-02 H	85 MMBtu/hr	\$1183
S-1624-339-0	3020-02 H	85 MMBtu/hr	\$1183
S-1624-340-0	3020-02 H	85 MMBtu/hr	\$1183
S-1624-341-0	3020-02 H	85 MMBtu/hr	\$1183
S-1624-342-0	3020-02 H	85 MMBtu/hr	\$1183

## Appendixes

- A: Quarterly Net Emissions Change
- B: Current PTO(s)
- C: Tank Emission Calculations
- D: BACT Guideline BACT Analysis
- E: ERC Withdrawal Calculations HRA Summary
- F: HRA
- G: Compliance Certification
- H: Draft ATCs

**APPENDIX A**  
**Quarterly Net Emissions Change (QNEC)**

### 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:

$PE2_{quarterly} = PE2_{annual} \div 4 \text{ quarters/year}$

$PE1_{quarterly} = PE1_{annual} \div 4 \text{ quarters/year}$

Quarterly NEC [QNEC] Each Steam Generator					
	PE2 (lb/yr)	PE2 (lb/qtr)	PE1 (lb/yr)	PE1 (lb/qtr)	QNEC (lb/qtr)
NO <sub>x</sub>	4,617	1,154	0	0	1,154
SO <sub>x</sub>	2,122	531	0	0	531
PM <sub>10</sub>	2,606	652	0	0	652
CO	13,775	3,444	0	0	3,444
VOC	4,095	1,024	0	0	1,024

**APPENDIX B**  
**Current PTO(s)**

# San Joaquin Valley Air Pollution Control District

**PERMIT UNIT:** S-1624-38-3

**EXPIRATION DATE:** 06/30/2021

**SECTION:** 04 **TOWNSHIP:** 28S **RANGE:** 27E

**EQUIPMENT DESCRIPTION:**

1,000 BBL FIXED ROOF PETROLEUM STORAGE TANK, MABRY #8

## PERMIT UNIT REQUIREMENTS

---

1. Instead of testing each uncontrolled fixed roof tank, the permittee may conduct a TVP test of the organic liquid stored in a representative tank provided the requirements of Sections 6.2.1.1.1 through 6.2.1.1.5 of Rule 4623 are met. [District Rule 4623] Federally Enforceable Through Title V Permit
2. This tank shall only store, place, or hold organic liquid with a true vapor pressure (TVP) of less than 0.5 psia under all storage conditions. [District Rules 2201 and 4623] Federally Enforceable Through Title V Permit
3. Permittee shall conduct true vapor pressure (TVP) testing of the organic liquid stored in this tank at least once every 24 months during summer (July - September), and/or whenever there is a change in the source or type of organic liquid stored in this tank in order to maintain exemption from the rule. [District Rule 4623] Federally Enforceable Through Title V Permit
4. The API gravity of crude oil or petroleum distillate shall be determined by using ASTM Method D 287 e1 "Standard Test Method for API Gravity of Crude Petroleum and Petroleum Products (Hydrometer Method). Sampling for API gravity shall be performed in accordance with ASTM Method D 4057 "Standard Practices for Manual Sampling of Petroleum and Petroleum Products." [District Rule 4623] Federally Enforceable Through Title V Permit
5. For crude oil with an API gravity of 26 degrees or less, the TVP shall be determined using the latest version of the Lawrence Berkeley National Laboratory "test Method for Vapor pressure of Reactive Organic Compounds in Heavy Crude Oil Using Gas Chromatograph", as approved by ARB and EPA. [District Rule 4623] Federally Enforceable Through Title V Permit
6. The TVP testing shall be conducted at actual storage temperature of the organic liquid in the tank. The permittee shall also conduct an API gravity testing. [District Rule 4623] Federally Enforceable Through Title V Permit
7. Permittee shall submit the records of TVP and API gravity testing to the APCO within 45 days after the date of testing. The records shall include the tank identification number, Permit to Operate number, type of stored organic liquid, TVP and API gravity of the organic liquid, test methods used, and a copy of the test results. [District Rule 4623] Federally Enforceable Through Title V Permit
8. The permittee shall keep accurate records of each organic liquid stored in the tank, including its storage temperature, TVP, and API gravity. [District Rule 4623] Federally Enforceable Through Title V Permit
9. All records required to be maintained by this permit shall be maintained for a period of at least five years and shall be made readily available for District inspection upon request. [District Rule 4623] Federally Enforceable Through Title V Permit

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

# San Joaquin Valley Air Pollution Control District

**PERMIT UNIT:** S-1624-39-3

**EXPIRATION DATE:** 06/30/2021

**SECTION:** 04 **TOWNSHIP:** 28S **RANGE:** 27E

**EQUIPMENT DESCRIPTION:**

1,000 BBL FIXED ROOF PETROLEUM STORAGE TANK, MABRY #9

## PERMIT UNIT REQUIREMENTS

---

1. Instead of testing each uncontrolled fixed roof tank, the permittee may conduct a TVP test of the organic liquid stored in a representative tank provided the requirements of Sections 6.2.1.1.1 through 6.2.1.1.5 of Rule 4623 are met. [District Rule 4623] Federally Enforceable Through Title V Permit
2. This tank shall only store, place, or hold organic liquid with a true vapor pressure (TVP) of less than 0.5 psia under all storage conditions. [District Rules 2201 and 4623] Federally Enforceable Through Title V Permit
3. Permittee shall conduct true vapor pressure (TVP) testing of the organic liquid stored in this tank at least once every 24 months during summer (July - September), and/or whenever there is a change in the source or type of organic liquid stored in this tank in order to maintain exemption from the rule. [District Rule 4623] Federally Enforceable Through Title V Permit
4. The API gravity of crude oil or petroleum distillate shall be determined by using ASTM Method D 287 e1 "Standard Test Method for API Gravity of Crude Petroleum and Petroleum Products (Hydrometer Method). Sampling for API gravity shall be performed in accordance with ASTM Method D 4057 "Standard Practices for Manual Sampling of Petroleum and Petroleum Products." [District Rule 4623] Federally Enforceable Through Title V Permit
5. For crude oil with an API gravity of 26 degrees or less, the TVP shall be determined using the latest version of the Lawrence Berkeley National Laboratory "test Method for Vapor pressure of Reactive Organic Compounds in Heavy Crude Oil Using Gas Chromatograph", as approved by ARB and EPA. [District Rule 4623] Federally Enforceable Through Title V Permit
6. The TVP testing shall be conducted at actual storage temperature of the organic liquid in the tank. The permittee shall also conduct an API gravity testing. [District Rule 4623] Federally Enforceable Through Title V Permit
7. Permittee shall submit the records of TVP and API gravity testing to the APCO within 45 days after the date of testing. The records shall include the tank identification number, Permit to Operate number, type of stored organic liquid, TVP and API gravity of the organic liquid, test methods used, and a copy of the test results. [District Rule 4623] Federally Enforceable Through Title V Permit
8. The permittee shall keep accurate records of each organic liquid stored in the tank, including its storage temperature, TVP, and API gravity. [District Rule 4623] Federally Enforceable Through Title V Permit
9. All records required to be maintained by this permit shall be maintained for a period of at least five years and shall be made readily available for District inspection upon request. [District Rule 4623] Federally Enforceable Through Title V Permit

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



**APPENDIX C**  
**Tank Emission Calculations**

<b>Tank Input Data</b>	
permit number (S-xxxx-xx-xx)	S-1624-38
facility tank I.D.	--
nearest city {1: Bakersfield, 2: Fresno, 3: Stockton}	1
tank ROC vapor pressure (psia)	0.5
liquid bulk storage temperature, Tb (°F)	100
is this a constant-level tank? {yes, no}	no
will flashing losses occur in this tank (only if first-line tank)? {yes, no}	no
breather vent pressure setting range (psi)	0.06
diameter of tank (feet)	21.1
capacity of tank (bbi)	1,000
conical or dome roof? {c, d}	c
shell height of tank (feet)	16
average liquid height (feet)	9
are the roof and shell the same color? {yes,no}	yes
For roof:	
color {1:Spec Al, 2:Diff Al, 3:Light, 4:Med, 5:Red, 6:White}	4
condition {1: Good, 2: Poor}	1
-----This row only used if shell is different color from roof-----	4
-----This row only used if shell is different color from roof-----	1

<b>Liquid Input Data</b>	A	B
maximum daily fluid throughput (bbi)		1,000
maximum annual fluid throughput (bbi)		365,000
-----This row only used if flashing losses occur in this tank-----		100
-----This row only used if flashing losses occur in this tank-----		36,500
molecular weight, Mw (lb/lb-mol)		100

<b>Calculated Values</b>	A	B
daily maximum ambient temperature, T <sub>ax</sub> (°F)		77.65
daily minimum ambient temperature, T <sub>an</sub> (°F)		53.15
daily total solar insolation factor, I (Btu/ft <sup>2</sup> -day)		1648.9
atmospheric pressure, P <sub>a</sub> (psia)		14.47
water vapor pressure at daily maximum liquid surface temperature (T <sub>lx</sub> ), P <sub>vx</sub> (psia)	99.0	0.9259
water vapor pressure at daily minimum liquid surface temperature (T <sub>ln</sub> ), P <sub>vn</sub> (psia)	88.2	0.6653
water vapor pressure at average liquid surface temperature (T <sub>la</sub> ), P <sub>va</sub> (psia)	93.6	0.7903
roof outage, H <sub>ro</sub> (feet)		0.2198
vapor space volume, V <sub>v</sub> (cubic feet)		2524.52
paint factor, alpha		0.68
vapor density, W <sub>v</sub> (lb/cubic foot)		0.0084
daily vapor temperature range, delta T <sub>v</sub> (degrees Rankine)		49.04
vapor space expansion factor, K <sub>e</sub>		0.1032

<b>Results</b>	lb/year	lb/day
Standing Storage Loss	801	2.19
Working Loss	18,250	50.00
Flashing Loss	N/A	N/A
<b>Total Uncontrolled Tank VOC Emissions</b>	<b>19,051</b>	<b>52.2</b>

<b>Tank Input Data</b>	
permit number (S-xxxx-xx-xx)	S-1624-39
facility tank I.D.	--
nearest city {1: Bakersfield, 2: Fresno, 3: Stockton}	1
tank ROC vapor pressure (psia)	0.5
liquid bulk storage temperature, Tb (°F)	100
is this a constant-level tank? {yes, no}	no
will flashing losses occur in this tank (only if first-line tank)? {yes, no}	no
breather vent pressure setting range (psi)	0.06
diameter of tank (feet)	21.1
capacity of tank (bbbl)	1,000
conical or dome roof? {c, d}	c
shell height of tank (feet)	16
average liquid height (feet)	9
are the roof and shell the same color? {yes,no}	yes
For roof:	
color {1:Spec Al, 2:Diff Al, 3:Light, 4:Med, 5:Red, 6:White}	4
condition {1: Good, 2: Poor}	1
-----This row only used if shell is different color from roof-----	4
-----This row only used if shell is different color from roof-----	1

<b>Liquid Input Data</b>	A	B
maximum daily fluid throughput (bbbl)		1,000
maximum annual fluid throughput (bbbl)		365,000
-----This row only used if flashing losses occur in this tank-----		100
-----This row only used if flashing losses occur in this tank-----		36,500
molecular weight, Mw (lb/lb-mol)		100

<b>Calculated Values</b>	A	B
daily maximum ambient temperature, T <sub>ax</sub> (°F)		77.65
daily minimum ambient temperature, T <sub>an</sub> (°F)		53.15
daily total solar insulation factor, I (Btu/ft <sup>2</sup> -day)		1648.9
atmospheric pressure, P <sub>a</sub> (psia)		14.47
water vapor pressure at daily maximum liquid surface temperature (T <sub>lx</sub> ), P <sub>vx</sub> (psia)	99.0	0.9259
water vapor pressure at daily minimum liquid surface temperature (T <sub>ln</sub> ), P <sub>vn</sub> (psia)	88.2	0.6653
water vapor pressure at average liquid surface temperature (T <sub>la</sub> ), P <sub>va</sub> (psia)	93.6	0.7903
roof outage, H <sub>ro</sub> (feet)		0.2198
vapor space volume, V <sub>v</sub> (cubic feet)		2524.52
paint factor, alpha		0.68
vapor density, W <sub>v</sub> (lb/cubic foot)		0.0084
daily vapor temperature range, delta T <sub>v</sub> (degrees Rankine)		49.04
vapor space expansion factor, K <sub>e</sub>		0.1032

<b>Results</b>	lb/year	lb/day
Standing Storage Loss	801	2.19
Working Loss	18,250	50.00
Flashing Loss	N/A	N/A
<b>Total Uncontrolled Tank VOC Emissions</b>	<b>19,051</b>	<b>52.2</b>

**APPENDIX D**  
**BACT Guideline and Analysis**

San Joaquin Valley  
Unified Air Pollution Control District

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

Last Update: 03/24/2014

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

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC	Gaseous fuel		
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 dsct, 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 dsct, 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>		
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 &gt; or = 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>	
CO	25 ppmvd @ 3% O <sub>2</sub>		

## Top Down BACT Analysis for Steam Generators

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

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

From the SJVUAPCD BACT Clearinghouse, Guideline 1.2.1, Oilfield Steam Generator ( $\geq$  20 MMBtu/hr), 4<sup>th</sup> quarter 2014, 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 &gt; 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)
- Units rated 85 MMBtu/hr and fired solely on PUC quality natural gas: 6 ppmvd @ 3% O<sub>2</sub> (Achieved in Practice)
- 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 (Achieved in Practice)
- Units firing on < 50% PUC quality natural gas, commercial propane, and/or LPG: 9 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 generators in this project to 5 ppmv @ 3% O<sub>2</sub>; therefore a cost effective analysis is not required.

**Step 5 - Select BACT**

BACT for NO<sub>x</sub> emissions from the oilfield steam generator is 5 ppmvd @ 3% O<sub>2</sub>. The applicant has proposed to install a steam generator with a NO<sub>x</sub> limit of 5 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, Guideline 1.2.1, Oilfield Steam Generator ( $\geq$  20 MMBtu/hr), 4<sup>th</sup> quarter 2014, 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> and 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 emissions rate of 9 ppmvd SO <sub>2</sub> @ 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

- 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 emissions 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 use natural/waste/TEOR/produced gas fuel with a sulfur content no more than 1 grains/100 scf for the steam generator, 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 the use of natural/waste/TEOR/produced gas with a sulfur content not to exceed 1 gr-S/100 scf. This proposal is selected as BACT for SO<sub>x</sub> and PM<sub>10</sub> emissions; 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 Possible CO Control Technologies

From the SJVUAPCD BACT Clearinghouse, Guideline 1.2.1, Oilfield Steam Generator ( $\geq 20$  MMBtu/hr), 4<sup>th</sup> quarter 2014, 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

None of the above listed technologies are technologically infeasible.

### 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 to limit the CO emissions of the steam generators in this project to 25 ppmv @ 3% O<sub>2</sub>. 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 CO emissions from the oilfield steam generator is 25 ppmvd @ 3% O<sub>2</sub>. The applicant has proposed to install steam generators with a CO limit 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 ( $\geq$  20 MMBtu/hr), 4<sup>th</sup> quarter 2014, 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

- 2) Gaseous fuel (Achieved-In-Practice)

### Step 4 - Cost Effectiveness Analysis

The applicant has proposed the use of natural/waste/TEOR/produced gas fuel for the steam generators 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 oilfield steam generator is gaseous fuel. The applicant has proposed natural/waste gas fuel; therefore BACT for VOC emissions is satisfied.

**APPENDIX E**  
**ERC Withdrawal Calculations**

NO <sub>x</sub>	1 <sup>st</sup> Quarter (lb)	2 <sup>nd</sup> Quarter (lb)	3 <sup>rd</sup> Quarter (lb)	4 <sup>th</sup> Quarter (lb)
ERC S-5016-2	8900	8900	8900	8900
Offsets Required (Includes distance offset ratio)	8655	8655	8660	8660
Amount Remaining	245	245	240	240
Credits reissued under ERC S-YYYY-2	245	245	240	240

SO <sub>x</sub> and PM <sub>10</sub>	1 <sup>st</sup> Quarter (lb)	2 <sup>nd</sup> Quarter (lb)	3 <sup>rd</sup> Quarter (lb)	4 <sup>th</sup> Quarter (lb)
ERC S-5018-5	12,194	8,550	8,550	10,195
ERC S-5020-5	4,906	8,550	8,550	6,905
SO <sub>x</sub> Offsets Required (Includes distance offset ratio)	3180	3180	3185	3185
PM <sub>10</sub> Offsets Required (Includes distance offset ratio)	3905	3910	3910	3910
Amount Remaining	10,015	10,010	10,005	10,005
Credits reissued under ERC C-YYYY-5	10,015	10,010	10,005	10,005

**APPENDIX F**  
**HRA**

## San Joaquin Valley Air Pollution Control District Risk Management Review and Ambient Air Quality Analysis

To: David Torii – Permit Services  
 From: Will J Worthley – Technical Services  
 Date: December 12, 2018  
 Facility Name: E&B NATURAL RESOURCES MGMT  
 Location: HEAVY OIL CENTRAL,  
 Application #(s): S-1624-38-4, -39-4, -338-0, -339-0, -340-0, -341-0, -342-0  
 Project #: S-1184033

### SUMMARY

#### RMR

Units	Prioritization Score	Acute Hazard Index	Chronic Hazard Index	Maximum Individual Cancer Risk	T-BACT Required	Special Permit Requirements
338-0	0.02	0.00	0.00	4.80E-09	No	Yes
339-0	0.02	0.00	0.00	4.80E-09	No	Yes
340-0	0.02	0.00	0.00	4.80E-09	No	Yes
341-0	0.02	0.00	0.00	4.80E-09	No	Yes
342-0	0.02	0.00	0.00	4.80E-09	No	Yes
Project Totals	0.24	0.00	0.00	2.40E-08		
Facility Totals	>1	0.73	0.03	1.69E-05		

#### AAQA

Pollutant	Air Quality Standard (State/Federal)				
	1 Hour	3 Hours	8 Hours	24 Hours	Annual
CO	Pass		Pass		
NO <sub>x</sub>	Pass				Pass
SO <sub>x</sub>	Pass	Pass		Pass	Pass
PM10				Pass	Pass
PM2.5				Pass	Pass

#### Notes:

- Results were taken from the attached AAQA Report.
- The criteria pollutants are below EPA's level of significance as found in 40 CFR Part 51.165 (b)(2) unless otherwise noted below.
- Modeled PM10 concentrations were below the District SIL for non-fugitive sources of 5 µg/m<sup>3</sup> for the 24-hour average concentration and 1 µg/m<sup>3</sup> for the annual concentration.

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

#### Unit s#338-0 to 342-0

- 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.

## Project Description

Technical Services received a request on November 15, 2018 to perform a Risk Management Review (RMR) and Ambient Air Quality Analysis (AAQA) for the following:

- Unit -338-0: 85 MMBTU/HR NATURAL GAS/WASTE GAS-FIRED STEAM GENERATOR WITH A NORTH AMERICAN LE-85 BURNER AND FLUE GAS RECIRCULATION (EB-32 - WILCOX)
- Unit -339-0: 85 MMBTU/HR NATURAL GAS/WASTE GAS-FIRED STEAM GENERATOR WITH A NORTH AMERICAN LE-85 BURNER AND FLUE GAS RECIRCULATION (EB-32 - WILCOX)
- Unit -340-0: 85 MMBTU/HR NATURAL GAS/WASTE GAS-FIRED STEAM GENERATOR WITH A NORTH AMERICAN LE-85 BURNER AND FLUE GAS RECIRCULATION (EB-33 - WILCOX)
- Unit -341-0: 85 MMBTU/HR NATURAL GAS/WASTE GAS-FIRED STEAM GENERATOR WITH A NORTH AMERICAN LE-85 BURNER AND FLUE GAS RECIRCULATION (EB-34 - WILCOX)
- Unit -342-0: 85 MMBTU/HR NATURAL GAS/WASTE GAS-FIRED STEAM GENERATOR WITH A NORTH AMERICAN LE-85 BURNER AND FLUE GAS RECIRCULATION (EB-35 - WILCOX)

## RMR REPORT

### Analysis

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

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

Then, generally no further analysis is required.

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

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

Toxic emissions for this project were calculated using the following methods:

- Toxic emission factors for this unit were derived from data in the 1992 Radian Corporation report to WSPA.



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

The AERMOD model was used, with the parameters outlined below and meteorological data for 2013-2017 from Bakersfield (rural dispersion coefficient selected) to determine the dispersion factors (i.e., the predicted concentration or X divided by the normalized source strength or Q) for a receptor grid. These dispersion factors were input into the SHARP Program, which then used the Air Dispersion Modeling and Risk Tool (ADMRT) of the Hot Spots Analysis and Reporting Program Version 2 (HARP 2) to calculate the chronic and acute hazard indices and the carcinogenic risk for the project.

The following parameters were used for the review:

#### Source Process Rates

Unit ID	Process ID	Process Material	Process Units	Hourly Process Rate	Annual Process Rate
1	1	NG/Waste Gas	LB	0.085	744.6
2	1	NG/Waste Gas	LB	0.085	744.6
3	1	NG/Waste Gas	LB	0.085	744.6
4	1	NG/Waste Gas	LB	0.085	744.6
5	1	NG/Waste Gas	LB	0.085	744.6

#### Point Source Parameters

Unit ID	Unit Description	Release Height (m)	Temp. (°K)	Exit Velocity (m/sec)	Stack Diameter (m)	Vertical/Horizontal/Capped
1	Steam Gen1	5.65	390	13.54	1.02	Vertical
2	Steam Gen2	5.65	390	13.54	1.02	Vertical
3	Steam Gen3	5.65	390	13.54	1.02	Vertical
4	Steam Gen4	5.65	390	13.54	1.02	Vertical
5	Steam Gen5	5.65	390	13.54	1.02	Vertical

#### AAQA Report

The District modeled the impact of the proposed project on the National Ambient Air Quality Standard (NAAQS) and/or California Ambient Air Quality Standard (CAAQS) in accordance with District Policy APR-1925 (Policy for District Rule 2201 AAQA Modeling) and EPA's Guideline for Air Quality Modeling (Appendix W of 40 CFR Part 51). The District uses a progressive three level approach to perform AAQAs. The first level (Level 1) uses a very conservative approach. If this analysis indicates a likely exceedance of an AAQS or Significant Impact Level (SIL), the analysis proceeds to the second level (Level 2) which implements a more refined approach. For the 1-hour NO<sub>2</sub> standard, there is also a third level that can be implemented if the Level 2 analysis indicates a likely exceedance of an AAQS or SIL.

The modeling analyses predicts the maximum air quality impacts using the appropriate emissions for each standard's averaging period. Required model inputs for a refined AAQA include background ambient air quality data, land characteristics, meteorological inputs, a receptor grid, and source parameters including emissions. These inputs are described in the sections that follow.

Ambient air concentrations of criteria pollutants are recorded at monitoring stations throughout the San Joaquin Valley. Monitoring stations may not measure all necessary pollutants, so background data may need to be collected from multiple sources. The following stations were used for this evaluation:

### Monitoring Stations

Pollutant	Station Name	County	City	Measurement Year
CO	Bakersfield-Muni	Kern	Bakersfield	2016
NOx	Bakersfield-Muni	Kern	Bakersfield	2016
PM10	Bakersfield-California Avenue	Kern	Bakersfield	2016
PM2.5	BAKERSFIELD SOUTHEAST (PLANZ)	Kern	Bakersfield	2016
SOx	Fresno - Garland	Fresno	Fresno	2016

Technical Services performed modeling for directly emitted criteria pollutants with the emission rates below:

#### Emission Rates (lbs/hour)

Unit ID	Process	NOx	SOx	CO	PM10	PM2.5
1	1	2.63	1.21	7.86	1.49	1.49

#### Emission Rates (lbs/year)

Unit ID	Process	NOx	SOx	CO	PM10	PM2.5
1	1	23,083	10,611	68,876	13,031	13031

The AERMOD model was used to determine if emissions from the project would cause or contribute to an exceedance of any state or federal air quality standard. The parameters outlined below and meteorological data for 2013-2017 from Bakersfield (rural dispersion coefficient selected) were used for the analysis:

The following parameters were used for the review:

#### Point Source Parameters

Unit ID	Unit Description	Release Height (m)	Temp. (°K)	Exit Velocity (m/sec)	Stack Diameter (m)	Vertical/Horizontal/Capped
1	Steam Gen	5.65	390	4.13	1.02	Vertical

## Conclusion

### RMR

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

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

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

### AAQA

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

**APPENDIX G**  
**Compliance Certification**



---

1600 Norris Road • Bakersfield, CA 93308

2 November 2018

Mr. Leonard Scandura  
Manager of Permit Services  
San Joaquin Valley Unified APCD  
34946 Flyover Court  
Bakersfield, California 93308

**Subject: Steam Generator - Compliance Certification – (EB32 to EB36)**

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.

Alternative siting analysis is required for any project which constitutes a New Major Source or a Federal Major Modification.

The current project occurs at existing facilities. The applicant proposes to operate a steam generator to thermally enhance existing wells at the site.

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

Sincerely,

A handwritten signature in cursive script that reads 'Amy Roth'.

Amy Roth  
Vice President, Regulatory Affairs

---

California • Kansas • Louisiana • Wyoming  
(661) 679-1700 • [www.ebresources.com](http://www.ebresources.com)

**APPENDIX H**  
**Draft ATCs**

San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

ISSUANCE DATE: DRAFT

PERMIT NO: S-1624-338-0

LEGAL OWNER OR OPERATOR: E&B NATURAL RESOURCES MGMT  
MAILING ADDRESS: 2447 PACIFIC COAST HWY, STE 200  
HERMOSA BEACH, CA 90245

LOCATION: HEAVY OIL CENTRAL  
CA

**EQUIPMENT DESCRIPTION:**

85 MMBTU/HR NATURAL GAS/WASTE GAS-FIRED STEAM GENERATOR WITH A NORTH AMERICAN LE-85 BURNER AND FLUE GAS RECIRCULATION (EB-32 - WILCOX)

**CONDITIONS**

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. PTOs S-1624-38 and '39 shall be canceled upon implementation of this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit
4. Prior to operating equipment under this Authority to Construct, permittee shall surrender NOX emission reduction credits for the following quantity of emissions: 1st quarter - 1,731 lb, 2nd quarter - 1,731 lb, 3rd quarter - 1,732 lb, and 4th quarter - 1,732 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 2/18/16) for the ERC specified below. [District Rule 2201] Federally Enforceable Through Title V Permit
5. ERC Certificate Number S-5016-2 (or a certificate split from this certificate) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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

Samir Sheikh, Executive Director / APCO

Arnaud Marjolle, Director of Permit Services

S-1624-338-0 Jan 9 2019 12:14PM - TORID Joint Inspection NOT Required

6. Prior to operating equipment under this Authority to Construct, permittee shall surrender SOX emission reduction credits for the following quantity of emissions: 1st quarter - 636 lb, 2nd quarter - 636 lb, 3rd quarter - 637 lb, and 4th quarter - 637 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 2/18/16) for the ERC specified below. [District Rule 2201] Federally Enforceable Through Title V Permit
7. ERC Certificate Numbers S-5018-5 and S-5020-5 (or a certificate(s) split from these certificate(s)) 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. Prior to operating equipment under this Authority to Construct, permittee shall surrender SOx (for PM10) emission reduction credits for the following quantity of emissions: 1st quarter - 781 lb, 2nd quarter - 782 lb, 3rd quarter - 782 lb, and 4th quarter - 782 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 2/18/16) for the ERC specified below. [District Rule 2201] Federally Enforceable Through Title V Permit
9. ERC Certificate Numbers S-5018-5 and S-5020-5 (or a certificate(s) split from these certificate(s)) 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
10. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
11. {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]
12. 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 Rule 2201 and 40 CFR 60.48c (g)] Federally Enforceable Through Title V Permit
13. Particulate matter emissions shall not exceed 0.1 grain/dscf at operating conditions, nor 0.1 grain/dscf calculated to 12% CO<sub>2</sub>, nor 10 lb/hr. [District Rules 4201, 4301, 5.1 and 5.2.3] Federally Enforceable Through Title V Permit
14. 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
15. The unit shall only be fired on natural/waste gas with a maximum sulfur content of 1.0 gr S/100 scf. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
16. Emission rates shall not exceed any of the following: NO<sub>x</sub> (as NO<sub>x</sub>): 5 ppmvd @ 3% O<sub>2</sub> or 0.0062 lb/MMBtu; SO<sub>x</sub>: 0.00285 lb/MMBtu; PM<sub>10</sub>: 0.0035 lb/MMBtu; CO: 25 ppmvd @ 3% O<sub>2</sub> or 0.0185 lb-CO/MMBtu; or VOC: 0.0055 lb/MMBtu. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
17. Permittee shall maintain records of duration of each start-up and shutdown for a period of five years and make such records readily available for District inspection upon request. [District Rule 4320] Federally Enforceable Through Title V Permit
18. A source test to demonstrate compliance with NO<sub>x</sub> and CO emission limits shall be performed within 60 days of startup of this unit. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
19. Source testing to measure natural gas-combustion NO<sub>x</sub> and CO emissions from this unit shall be conducted at least once every twelve (12) months (no more than 30 days before or after the required annual source test date). After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months (no more than 30 days before or after the required 36-month source test date). 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

DRAFT

CONDITIONS CONTINUE ON NEXT PAGE

20. 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
21. Permittee shall submit notification to the District of the date of construction, anticipated startup, 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
22. 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 2201, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
23. 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 2201, 4305, 4306, 4320] Federally Enforceable Through Title V Permit
24. 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
25. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
26. 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 analyzer 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
27. If the NO<sub>x</sub> or CO concentrations corrected to 3%, as measured by the portable analyzer, exceed the applicable emission limit, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4102, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
28. 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 sample 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 4102, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
29. 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 within the acceptable range. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

DRAFT

CONDITIONS CONTINUE ON NEXT PAGE



30. 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 PTO, 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] Federally Enforceable Through Title V Permit
31. Shorter time periods for demonstration of compliance after startup or re-ignition may be approved by the APCO by submittal of appropriate technical justification upon implementation of this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit
32. PUC quality natural gas is any gaseous fuel where the sulfur content is no more than one-fourth (0.25) grain of hydrogen sulfide per one hundred (100) standard cubic feet, no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet, and at least 80% methane by volume. [District Rule 4320] Federally Enforceable Through Title V Permit
33. If the steam generator 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 Rules 2201 and 4320] Federally Enforceable Through Title V Permit
34. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, permittee shall demonstrate compliance at least annually. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
35. 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 Rules 2201 and 4320] Federally Enforceable Through Title V Permit
36. 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
37. 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 and 40 CFR 60.48c (i)] Federally Enforceable Through Title V Permit

DRAFT

San Joaquin Valley  
Air Pollution Control District

## AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: S-1624-339-0

LEGAL OWNER OR OPERATOR: E&B NATURAL RESOURCES MGMT  
MAILING ADDRESS: 2447 PACIFIC COAST HWY, STE 200  
HERMOSA BEACH, CA 90245

LOCATION: HEAVY OIL CENTRAL  
CA

### EQUIPMENT DESCRIPTION:

85 MMBTU/HR NATURAL GAS/WASTE GAS-FIRED STEAM GENERATOR WITH A NORTH AMERICAN LE-85 BURNER AND FLUE GAS RECIRCULATION (EB-33 - WILCOX)

## CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. PTOs S-1624-38 and '39 shall be canceled upon implementation of this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit
4. Prior to operating equipment under this Authority to Construct, permittee shall surrender NOX emission reduction credits for the following quantity of emissions: 1st quarter - 1,731 lb, 2nd quarter - 1,731 lb, 3rd quarter - 1,732 lb, and 4th quarter - 1,732 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 2/18/16) for the ERC specified below. [District Rule 2201] Federally Enforceable Through Title V Permit
5. ERC Certificate Number S-5016-2 (or a certificate split from this certificate) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit

### CONDITIONS CONTINUE ON NEXT PAGE

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

Samir Sheikh, Executive Director / APCO

Arnaud Marjollet, Director of Permit Services

S-1624-339-0 Jan 9 2019 12:14PM - TORID : Joint Inspection NOT Required

6. Prior to operating equipment under this Authority to Construct, permittee shall surrender SOX emission reduction credits for the following quantity of emissions: 1st quarter - 636 lb, 2nd quarter - 636 lb, 3rd quarter - 637 lb, and 4th quarter - 637 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 2/18/16) for the ERC specified below. [District Rule 2201] Federally Enforceable Through Title V Permit
7. ERC Certificate Numbers S-5018-5 and S-5020-5 (or a certificate(s) split from these certificate(s)) 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. Prior to operating equipment under this Authority to Construct, permittee shall surrender SOx (for PM10) emission reduction credits for the following quantity of emissions: 1st quarter - 781 lb, 2nd quarter - 782 lb, 3rd quarter - 782 lb, and 4th quarter - 782 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 2/18/16) for the ERC specified below. [District Rule 2201] Federally Enforceable Through Title V Permit
9. ERC Certificate Numbers S-5018-5 and S-5020-5 (or a certificate(s) split from these certificate(s)) 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
10. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
11. {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]
12. 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 Rule 2201 and 40 CFR 60.48c (g)] Federally Enforceable Through Title V Permit
13. Particulate matter emissions shall not exceed 0.1 grain/dscf at operating conditions, nor 0.1 grain/dscf calculated to 12% CO<sub>2</sub>, nor 10 lb/hr. [District Rules 4201, 4301, 5.1 and 5.2.3] Federally Enforceable Through Title V Permit
14. 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
15. The unit shall only be fired on natural/waste gas with a maximum sulfur content of 1.0 gr S/100 scf. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
16. Emission rates shall not exceed any of the following: NO<sub>x</sub> (as NO<sub>x</sub>): 5 ppmvd @ 3% O<sub>2</sub> or 0.0062 lb/MMBtu; SO<sub>x</sub>: 0.00285 lb/MMBtu; PM<sub>10</sub>: 0.0035 lb/MMBtu; CO: 25 ppmvd @ 3% O<sub>2</sub> or 0.0185 lb-CO/MMBtu; or VOC: 0.0055 lb/MMBtu. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
17. Permittee shall maintain records of duration of each start-up and shutdown for a period of five years and make such records readily available for District inspection upon request. [District Rule 4320] Federally Enforceable Through Title V Permit
18. A source test to demonstrate compliance with NO<sub>x</sub> and CO emission limits shall be performed within 60 days of startup of this unit. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
19. Source testing to measure natural gas-combustion NO<sub>x</sub> and CO emissions from this unit shall be conducted at least once every twelve (12) months (no more than 30 days before or after the required annual source test date). After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months (no more than 30 days before or after the required 36-month source test date). 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

DRAFT

CONDITIONS CONTINUE ON NEXT PAGE

20. 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
21. Permittee shall submit notification to the District of the date of construction, anticipated startup, 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
22. 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 2201, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
23. The following test methods shall be used: NOx (ppmv) - EPA Method 7E or ARB Method 100, NOx (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 2201, 4305, 4306, 4320] Federally Enforceable Through Title V Permit
24. 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
25. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
26. 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 analyzer 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
27. If the NO<sub>x</sub> or CO concentrations corrected to 3%, as measured by the portable analyzer, exceed the applicable emission limit, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4102, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
28. 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 sample 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 4102, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
29. 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 within the acceptable range. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

DRAFT

CONDITIONS CONTINUE ON NEXT PAGE

30. 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 PTO, 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] Federally Enforceable Through Title V Permit
31. Shorter time periods for demonstration of compliance after startup or re-ignition may be approved by the APCO by submittal of appropriate technical justification upon implementation of this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit
32. PUC quality natural gas is any gaseous fuel where the sulfur content is no more than one-fourth (0.25) grain of hydrogen sulfide per one hundred (100) standard cubic feet, no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet, and at least 80% methane by volume. [District Rule 4320] Federally Enforceable Through Title V Permit
33. If the steam generator 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 Rules 2201 and 4320] Federally Enforceable Through Title V Permit
34. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, permittee shall demonstrate compliance at least annually. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
35. 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 Rules 2201 and 4320] Federally Enforceable Through Title V Permit
36. 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
37. 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 and 40 CFR 60.48c (i)] Federally Enforceable Through Title V Permit

DRAFT

San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

ISSUANCE DATE: DRAFT  
**DRAFT**

PERMIT NO: S-1624-340-0

LEGAL OWNER OR OPERATOR: E&B NATURAL RESOURCES MGMT  
MAILING ADDRESS: 2447 PACIFIC COAST HWY, STE 200  
HERMOSA BEACH, CA 90245

LOCATION: HEAVY OIL CENTRAL  
CA

**EQUIPMENT DESCRIPTION:**

85 MMBTU/HR NATURAL GAS/WASTE GAS-FIRED STEAM GENERATOR WITH A NORTH AMERICAN LE-85 BURNER AND FLUE GAS RECIRCULATION (EB-34 - WILCOX)

**CONDITIONS**

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. PTOs S-1624-38 and '39 shall be canceled upon implementation of this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit
4. Prior to operating equipment under this Authority to Construct, permittee shall surrender NOX emission reduction credits for the following quantity of emissions: 1st quarter - 1,731 lb, 2nd quarter - 1,731 lb, 3rd quarter - 1,732 lb, and 4th quarter - 1,732 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 2/18/16) for the ERC specified below. [District Rule 2201] Federally Enforceable Through Title V Permit
5. ERC Certificate Number S-5016-2 (or a certificate split from this certificate) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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

Samir Sheikh, Executive Director / APCO

**DRAFT**

Arnaud Marjolle, Director of Permit Services  
S-1624-340-0 Jan 9 2019 12:14PM - TORID : Joint Inspection NOT Required

6. Prior to operating equipment under this Authority to Construct, permittee shall surrender SOX emission reduction credits for the following quantity of emissions: 1st quarter - 636 lb, 2nd quarter - 636 lb, 3rd quarter - 637 lb, and 4th quarter - 637 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 2/18/16) for the ERC specified below. [District Rule 2201] Federally Enforceable Through Title V Permit
7. ERC Certificate Numbers S-5018-5 and S-5020-5 (or a certificate(s) split from these certificate(s)) 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. Prior to operating equipment under this Authority to Construct, permittee shall surrender SOx (for PM10) emission reduction credits for the following quantity of emissions: 1st quarter - 781 lb, 2nd quarter - 782 lb, 3rd quarter - 782 lb, and 4th quarter - 782 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 2/18/16) for the ERC specified below. [District Rule 2201] Federally Enforceable Through Title V Permit
9. ERC Certificate Numbers S-5018-5 and S-5020-5 (or a certificate(s) split from these certificate(s)) 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
10. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
11. {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]
12. 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 Rule 2201 and 40 CFR 60.48c (g)] Federally Enforceable Through Title V Permit
13. Particulate matter emissions shall not exceed 0.1 grain/dscf at operating conditions, nor 0.1 grain/dscf calculated to 12% CO<sub>2</sub>, nor 10 lb/hr. [District Rules 4201, 4301, 5.1 and 5.2.3] Federally Enforceable Through Title V Permit
14. 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
15. The unit shall only be fired on natural/waste gas with a maximum sulfur content of 1.0 gr S/100 scf. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
16. Emission rates shall not exceed any of the following: NO<sub>x</sub> (as NO<sub>x</sub>): 5 ppmvd @ 3% O<sub>2</sub> or 0.0062 lb/MMBtu; SO<sub>x</sub>: 0.00285 lb/MMBtu; PM<sub>10</sub>: 0.0035 lb/MMBtu; CO: 25 ppmvd @ 3% O<sub>2</sub> or 0.0185 lb-CO/MMBtu; or VOC: 0.0055 lb/MMBtu. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
17. Permittee shall maintain records of duration of each start-up and shutdown for a period of five years and make such records readily available for District inspection upon request. [District Rule 4320] Federally Enforceable Through Title V Permit
18. A source test to demonstrate compliance with NO<sub>x</sub> and CO emission limits shall be performed within 60 days of startup of this unit. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
19. Source testing to measure natural gas-combustion NO<sub>x</sub> and CO emissions from this unit shall be conducted at least once every twelve (12) months (no more than 30 days before or after the required annual source test date). After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months (no more than 30 days before or after the required 36-month source test date). 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

DRAFT

CONDITIONS CONTINUE ON NEXT PAGE

20. 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
21. Permittee shall submit notification to the District of the date of construction, anticipated startup, 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
22. 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 2201, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
23. The following test methods shall be used: NOx (ppmv) - EPA Method 7E or ARB Method 100, NOx (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 2201, 4305, 4306, 4320] Federally Enforceable Through Title V Permit
24. 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
25. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
26. 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 analyzer 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
27. If the NO<sub>x</sub> or CO concentrations corrected to 3%, as measured by the portable analyzer, exceed the applicable emission limit, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4102, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
28. 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 sample 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 4102, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
29. 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 within the acceptable range. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

DRAFT

CONDITIONS CONTINUE ON NEXT PAGE



30. 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 PTO, 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] Federally Enforceable Through Title V Permit
31. Shorter time periods for demonstration of compliance after startup or re-ignition may be approved by the APCO by submittal of appropriate technical justification upon implementation of this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit
32. PUC quality natural gas is any gaseous fuel where the sulfur content is no more than one-fourth (0.25) grain of hydrogen sulfide per one hundred (100) standard cubic feet, no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet, and at least 80% methane by volume. [District Rule 4320] Federally Enforceable Through Title V Permit
33. If the steam generator 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 Rules 2201 and 4320] Federally Enforceable Through Title V Permit
34. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, permittee shall demonstrate compliance at least annually. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
35. 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 Rules 2201 and 4320] Federally Enforceable Through Title V Permit
36. 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
37. 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 and 40 CFR 60.48c (i)] Federally Enforceable Through Title V Permit

DRAFT

San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

ISSUANCE DATE: DRAFT  
**DRAFT**

PERMIT NO: S-1624-341-0

LEGAL OWNER OR OPERATOR: E&B NATURAL RESOURCES MGMT  
MAILING ADDRESS: 2447 PACIFIC COAST HWY, STE 200  
HERMOSA BEACH, CA 90245

LOCATION: HEAVY OIL CENTRAL  
CA

**EQUIPMENT DESCRIPTION:**

85 MMBTU/HR NATURAL GAS/WASTE GAS-FIRED STEAM GENERATOR WITH A NORTH AMERICAN LE-85 BURNER AND FLUE GAS RECIRCULATION (EB-35 - WILCOX)

**CONDITIONS**

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. PTOs S-1624-38 and '39 shall be canceled upon implementation of this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit
4. Prior to operating equipment under this Authority to Construct, permittee shall surrender NOX emission reduction credits for the following quantity of emissions: 1st quarter - 1,731 lb, 2nd quarter - 1,731 lb, 3rd quarter - 1,732 lb, and 4th quarter - 1,732 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 2/18/16) for the ERC specified below. [District Rule 2201] Federally Enforceable Through Title V Permit
5. ERC Certificate Number S-5016-2 (or a certificate split from this certificate) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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

Samir Sheikh, Executive Director APCCO

**DRAFT**

Arnaud Marjollet, Director of Permit Services

S-1624-341-0, Jan 9 2019 12:14PM - TORIC - Joint Inspection NOT Required

6. Prior to operating equipment under this Authority to Construct, permittee shall surrender SOX emission reduction credits for the following quantity of emissions: 1st quarter - 636 lb, 2nd quarter - 636 lb, 3rd quarter - 637 lb, and 4th quarter - 637 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 2/18/16) for the ERC specified below. [District Rule 2201] Federally Enforceable Through Title V Permit
7. ERC Certificate Numbers S-5018-5 and S-5020-5 (or a certificate(s) split from these certificate(s)) 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. Prior to operating equipment under this Authority to Construct, permittee shall surrender SOx (for PM10) emission reduction credits for the following quantity of emissions: 1st quarter - 781 lb, 2nd quarter - 782 lb, 3rd quarter - 782 lb, and 4th quarter - 782 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 2/18/16) for the ERC specified below. [District Rule 2201] Federally Enforceable Through Title V Permit
9. ERC Certificate Numbers S-5018-5 and S-5020-5 (or a certificate(s) split from these certificate(s)) 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
10. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
11. {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]
12. 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 Rule 2201 and 40 CFR 60.48c (g)] Federally Enforceable Through Title V Permit
13. Particulate matter emissions shall not exceed 0.1 grain/dscf at operating conditions, nor 0.1 grain/dscf calculated to 12% CO<sub>2</sub>, nor 10 lb/hr. [District Rules 4201, 4301, 5.1 and 5.2.3] Federally Enforceable Through Title V Permit
14. 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
15. The unit shall only be fired on natural/waste gas with a maximum sulfur content of 1.0 gr S/100 scf. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
16. Emission rates shall not exceed any of the following: NO<sub>x</sub> (as NO<sub>x</sub>): 5 ppmvd @ 3% O<sub>2</sub> or 0.0062 lb/MMBtu; SO<sub>x</sub>: 0.00285 lb/MMBtu; PM<sub>10</sub>: 0.0035 lb/MMBtu; CO: 25 ppmvd @ 3% O<sub>2</sub> or 0.0185 lb-CO/MMBtu; or VOC: 0.0055 lb/MMBtu. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
17. Permittee shall maintain records of duration of each start-up and shutdown for a period of five years and make such records readily available for District inspection upon request. [District Rule 4320] Federally Enforceable Through Title V Permit
18. A source test to demonstrate compliance with NO<sub>x</sub> and CO emission limits shall be performed within 60 days of startup of this unit. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
19. Source testing to measure natural gas-combustion NO<sub>x</sub> and CO emissions from this unit shall be conducted at least once every twelve (12) months (no more than 30 days before or after the required annual source test date). After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months (no more than 30 days before or after the required 36-month source test date). 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

DRAFT

CONDITIONS CONTINUE ON NEXT PAGE

20. 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
21. Permittee shall submit notification to the District of the date of construction, anticipated startup, 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
22. 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 2201, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
23. 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 2201, 4305, 4306, 4320] Federally Enforceable Through Title V Permit
24. 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
25. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
26. 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 analyzer 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
27. If the NO<sub>x</sub> or CO concentrations corrected to 3%, as measured by the portable analyzer, exceed the applicable emission limit, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4102, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
28. 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 sample 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 4102, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
29. 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 within the acceptable range. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

DRAFT

CONDITIONS CONTINUE ON NEXT PAGE

30. 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 PTO, 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] Federally Enforceable Through Title V Permit
31. Shorter time periods for demonstration of compliance after startup or re-ignition may be approved by the APCO by submittal of appropriate technical justification upon implementation of this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit
32. PUC quality natural gas is any gaseous fuel where the sulfur content is no more than one-fourth (0.25) grain of hydrogen sulfide per one hundred (100) standard cubic feet, no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet, and at least 80% methane by volume. [District Rule 4320] Federally Enforceable Through Title V Permit
33. If the steam generator 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 Rules 2201 and 4320] Federally Enforceable Through Title V Permit
34. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, permittee shall demonstrate compliance at least annually. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
35. 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 Rules 2201 and 4320] Federally Enforceable Through Title V Permit
36. 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
37. 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 and 40 CFR 60.48c (i)] Federally Enforceable Through Title V Permit

DRAFT

San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

**DRAFT**  
ISSUANCE DATE: DRAFT

**PERMIT NO:** S-1624-342-0

**LEGAL OWNER OR OPERATOR:** E&B NATURAL RESOURCES MGMT  
**MAILING ADDRESS:** 2447 PACIFIC COAST HWY, STE 200  
HERMOSA BEACH, CA 90245

**LOCATION:** HEAVY OIL CENTRAL  
CA

**EQUIPMENT DESCRIPTION:**  
85 MMBTU/HR NATURAL GAS/WASTE GAS-FIRED STEAM GENERATOR WITH A NORTH AMERICAN LE-85 BURNER AND FLUE GAS RECIRCULATION (EB-36 - WILCOX)

**CONDITIONS**

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. PTOs S-1624-38 and '39 shall be canceled upon implementation of this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit
4. Prior to operating equipment under this Authority to Construct, permittee shall surrender NOX emission reduction credits for the following quantity of emissions: 1st quarter - 1,731 lb, 2nd quarter - 1,731 lb, 3rd quarter - 1,732 lb, and 4th quarter - 1,732 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 2/18/16) for the ERC specified below. [District Rule 2201] Federally Enforceable Through Title V Permit
5. ERC Certificate Number S-5016-2 (or a certificate split from this certificate) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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

Samir Sheikh, Executive Director / APCO

**DRAFT**

Arnaud Marjolle, Director of Permit Services

S-1624-342-0 Jan 9 2019 12:14PM - TOR/D - Joint Inspection NOT Required

6. Prior to operating equipment under this Authority to Construct, permittee shall surrender SOX emission reduction credits for the following quantity of emissions: 1st quarter - 636 lb, 2nd quarter - 636 lb, 3rd quarter - 637 lb, and 4th quarter - 637 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 2/18/16) for the ERC specified below. [District Rule 2201] Federally Enforceable Through Title V Permit
7. ERC Certificate Numbers S-5018-5 and S-5020-5 (or a certificate(s) split from these certificate(s)) 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. Prior to operating equipment under this Authority to Construct, permittee shall surrender SOx (for PM10) emission reduction credits for the following quantity of emissions: 1st quarter - 781 lb, 2nd quarter - 782 lb, 3rd quarter - 782 lb, and 4th quarter - 782 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 2/18/16) for the ERC specified below. [District Rule 2201] Federally Enforceable Through Title V Permit
9. ERC Certificate Numbers S-5018-5 and S-5020-5 (or a certificate(s) split from these certificate(s)) 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
10. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
11. {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]
12. 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 Rule 2201 and 40 CFR 60.48c (g)] Federally Enforceable Through Title V Permit
13. Particulate matter emissions shall not exceed 0.1 grain/dscf at operating conditions, nor 0.1 grain/dscf calculated to 12% CO<sub>2</sub>, nor 10 lb/hr. [District Rules 4201, 4301, 5.1 and 5.2.3] Federally Enforceable Through Title V Permit
14. 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
15. The unit shall only be fired on natural/waste gas with a maximum sulfur content of 1.0 gr S/100 scf. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
16. Emission rates shall not exceed any of the following: NO<sub>x</sub> (as NO<sub>x</sub>): 5 ppmvd @ 3% O<sub>2</sub> or 0.0062 lb/MMBtu; SO<sub>x</sub>: 0.00285 lb/MMBtu; PM<sub>10</sub>: 0.0035 lb/MMBtu; CO: 25 ppmvd @ 3% O<sub>2</sub> or 0.0185 lb-CO/MMBtu; or VOC: 0.0055 lb/MMBtu. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
17. Permittee shall maintain records of duration of each start-up and shutdown for a period of five years and make such records readily available for District inspection upon request. [District Rule 4320] Federally Enforceable Through Title V Permit
18. A source test to demonstrate compliance with NO<sub>x</sub> and CO emission limits shall be performed within 60 days of startup of this unit. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
19. Source testing to measure natural gas-combustion NO<sub>x</sub> and CO emissions from this unit shall be conducted at least once every twelve (12) months (no more than 30 days before or after the required annual source test date). After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months (no more than 30 days before or after the required 36-month source test date). 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

DRAFT

CONDITIONS CONTINUE ON NEXT PAGE

20. 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
21. Permittee shall submit notification to the District of the date of construction, anticipated startup, 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
22. 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 2201, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
23. The following test methods shall be used: NOX (ppmv) - EPA Method 7E or ARB Method 100, NOx (lb/MMBtu) - EPA Method 19; CO (ppmv) - EPA Method 10 or ARB Method 100; Stack gas oxygen (O2) - EPA Method 3 or 3A or ARB Method 100; stack gas velocities - EPA Method 2; Stack gas moisture content - EPA Method 4; SOx - EPA Method 6C or 8 or ARB Method 100; fuel gas sulfur as H2S content - EPA Method 11 or 15; and fuel hhv (MMBtu) - ASTM D 1826 or D 1945 in conjunction with ASTM D 3588. [District Rule 2201, 4305, 4306, 4320] Federally Enforceable Through Title V Permit
24. 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
25. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
26. 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 analyzer 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
27. If the NOx or CO concentrations corrected to 3%, as measured by the portable analyzer, exceed the applicable emission limit, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4102, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
28. All NOx, CO, and O2 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 NOx, CO, and O2 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 sample 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 4102, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
29. The permittee shall maintain records of: (1) the date and time of NOx, CO and O2 measurements, (2) the O2 concentration in percent by volume and the measured NOx and CO concentrations corrected to 3% O2, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

DRAFT

CONDITIONS CONTINUE ON NEXT PAGE



30. 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 PTO, 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] Federally Enforceable Through Title V Permit
31. Shorter time periods for demonstration of compliance after startup or re-ignition may be approved by the APCO by submittal of appropriate technical justification upon implementation of this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit
32. PUC quality natural gas is any gaseous fuel where the sulfur content is no more than one-fourth (0.25) grain of hydrogen sulfide per one hundred (100) standard cubic feet, no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet, and at least 80% methane by volume. [District Rule 4320] Federally Enforceable Through Title V Permit
33. If the steam generator 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 Rules 2201 and 4320] Federally Enforceable Through Title V Permit
34. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, permittee shall demonstrate compliance at least annually. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
35. 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 Rules 2201 and 4320] Federally Enforceable Through Title V Permit
36. 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
37. 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 and 40 CFR 60.48c (i)] Federally Enforceable Through Title V Permit

DRAFT