San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

OCT 15 2015

Shams Hassan
E&B Natural Resources Mgmt.
3000 James Road
Bakersfield, CA 93308

Re: Notice of Preliminary Decision - Authority to Construct
Facility Number: S-1624
Project Number: S-1153687

Dear Mr. Hassan:

Enclosed for your review and comment is the District's analysis of E&B Natural Resources Mgmt. application for an Authority to Construct for a steam generator, in central Kern County.

The notice of preliminary decision for this project will be published approximately three days from the date of this letter. After addressing all comments made during the 30-day public notice and 45-day EPA notice comment periods, the District intends to issue the Authority to Construct. Please submit your written comments on this project within the 30-day public comment period, as specified in the enclosed public notice.

Thank you for your cooperation in this matter. If you have any questions regarding this matter, please contact Mr. David Torii of Permit Services at (661) 392-5620.

Sincerely,

Arnaud Marjollet
Director of Permit Services

AM:dbt/ya

Enclosures

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

Seyed Sadredin
Executive Director/Air Pollution Control Officer

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www.valleyair.org www.healthyairliving.com

San Joaquin Valley Air Pollution Control District

Authority to Construct Application Review

New Steam Generator

Facility Name:	E&B Natural Resources Mgmt.	Date:	10/1/15
Mailing Address:	3000 James Road Bakersfield, CA 93308	Engineer:	David Torii
		Lead Engineer:	Steve Leonard
Contact Person:	Shams Hassan		
Telephone:	(661) 616-6168		
Application #(s):	S-1624-295-0		
Project #:	1153687		
Deemed Complete:			

10/1/15

I. Proposal

E&B Natural Resources Mgmt. (E&B) has requested an Authority to Construct (ATC) permit authorizing steam generator S-1807-69 (S-1807 is E&B's Heavy Oil **Western** stationary source) to operate in S-1624 (S-1624 is E&B's Heavy Oil **Central** stationary source). To mitigate the steam generator's VOC emission increase, tank S-1624-30 will be surrendered.

II. Applicable Rules

Rule 2201	New and Modified Stationary Source Review Rule (4/21/11)
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 II (8/21/03)
Rule 4306	Boilers, Steam Generators and Process Heaters – Phase III (3/17/05)
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 steam generator will be located in the Poso Creek Oil Field, within the Section 5, Township 28S, Range 27E in the 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

PTO S-1624-30 (seePTO in Appendix B):

- 250 BBL FIXED ROOF PETROLEUM STORAGE TANK WITH PV VENT, GRIMES #3

ATC S-1624-295-0:

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

VI. Emission Control Technology Evaluation

Emissions from natural gas-fired steam generators include NO_X, CO, VOC, PM_{10}, and SO_X.

NO_X is the major pollutant of concern when burning natural gas. NO_X formation is either due to thermal fixation of atmospheric nitrogen in the combustion air (thermal NO_X) or due to conversion of chemically bound nitrogen in the fuel (fuel NO_X). Due to the low fuel nitrogen content of natural gas, nearly all NO_X emissions are thermal NO_X. Formation of thermal NO_X 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-NOx burners reduce NOX formation by producing lower flame temperatures (and longer flames) than conventional burners. Low-NOx 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 NOx.

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 premix 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_X 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_X.

Tank S-1624-30 is equipped with a pressure-vacuum (PV) relief vent valve set to within 10% of the maximum allowable working pressure of the tank. The PV-valve reduces VOC wind induced emissions from the tank vent.

VII. General Calculations

A. Assumptions

- The maximum operating schedule is 24 hours per day, 8,760 hr/year

Steam Generator:

- Maximum heat input rating = 85 MMBtu/hr
- Unit is fired on natural gas with ≤ 1.0 grain-S/100 dscf (see gas analysis in Appendix C)
- F-Factor for Natural Gas @ 60°F: 8,578 dscf/MMBtu
- Gas Molar Vol 60 oF = 10.7316 psia ft3/lbmol R x 519.67 R/(14.696 psia/atm)
  = 378.61 ft3/lbmol
- Natural Gas Heating Value = 1,000 Btu/scf

Tank S-1624-30:

- TVP = 0.5 psia
- Volume = 250 gallons
- Throughput = 250 gallons/day (District practice for tanks without a throughput limit)

B. Emission Factors

Pollutant	Steam Generator Post-Project Emission Factors (EF2)		Source
NO_X	0.0062 lb-NO_X/MMBtu	5 ppmvd NO_X (@ 3%O_2)	Proposed
SO_X	0.00285 lb SO2/MMBtu	1.0 gr S/100 scf	Proposed
PM10	0.003 lb-PM10/MMBtu		Proposed & FYI 328
CO	0.0185 lb-CO/MMBtu	25 ppmv CO @3% O2	BACT
VOC	0.0055 lb-VOC/MMBtu	13 ppmv VOC @3% O2	Proposed & AP-42 (07/98) Table 1.4-2

Both the daily and annual PE's for tank S-1624-30 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 generator is a new emissions unit in S-1624, PE1 = 0 for all pollutants.

Tank S-1624-30 PE1	
Daily Emissions (lb/day)	Annual Emissions (lb/year)
13.0	4739

See emission calculations in Appendix D

2. Post Project Potential to Emit (PE2)

The potential to emit for the steam generator is calculated as follows, and summarized in the table below:

$PE2_{NOx}$ = (0.0062 lb/MMBtu) * (85 MMBtu/hr) * (24 hr/day)
= 12.6 lb NO_X/day

= (0.0062 lb/MMBtu) * (85 MMBtu/hr) * (24 hr/day) * (365 day/year)
= 4616 lb NO_X/year

S-1624-295-0 PE2		
	Daily Emissions (lb/day)	Annual Emissions (lb/year)
NO_X	12.6	4617
SO_X	5.8	2122
PM_{10}	6.1	2234
CO	37.7	13,775
VOC	11.2	4095

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_X	SO_X	PM_{10}	CO	VOC
S-1624-13-10	2,650	3,445	1,590	71,306	
S-1624-25-3	1,418	516	1,289	129	
S-1624-26-3	1,850	673	1,682	168	
S-1624-174-0	2,117	402	1,465	14,235	
S-1624-179-1	143	82	189	3,180	
S-1624-180-1	143	82	189	3,180	
S-1624-181-1	143	82	189	3,180	
S-1624-182-1	143	82	189	3,180	
S-1624-215-0	1,927	3,445	1,831	17,827	
S-1624-218-1	8,078	339	950	43,956	
S-1624-220-0	4,542	2,122	2,606	27,550	
S-1624-221-0	4,542	2,122	2,606	27,550	> 20,000
S-1624-222-0	4,542	2,122	2,606	27,550	
S-1624-223-0	4,542	2,122	2,606	27,550	
S-1624-224-0	4,542	2,122	2,606	27,550	
S-1624-238-0	28,470	1,560	4,161	45,990	
S-1624-239-0	2,409	3,635	1,664	16,206	
S-1624-254-0	4,542	2,122	2,606	27,550	
S-1624-255-0	4,542	2,122	2,606	27,550	
S-1624-270-1	2,502	699	294	13,616	
S-1624-285-0	4,468	2,122	2,606	13,552	
S-1624-286-0	4,468	2,122	2,606	13,552	
S-1624-288-0	4,617	2,122	2,606	13,775	
SSPE1	97,340	36,262	41,742	469,882	> 20,000

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)					
	NO_X	SO_X	PM_{10}	CO	VOC
S-1624-13-10	2,650	3,445	1,590	71,306	
S-1624-25-3	1,418	516	1,289	129	
S-1624-26-3	1,850	673	1,682	168	
S-1624-174-0	2,117	402	1,465	14,235	
S-1624-179-1	143	82	189	3,180	
S-1624-180-1	143	82	189	3,180	
S-1624-181-1	143	82	189	3,180	
S-1624-182-1	143	82	189	3,180	
S-1624-215-0	1,927	3,445	1,831	17,827	
S-1624-218-1	8,078	339	950	43,956	
S-1624-220-0	4,542	2,122	2,606	27,550	
S-1624-221-0	4,542	2,122	2,606	27,550	> 20,000
S-1624-222-0	4,542	2,122	2,606	27,550	
S-1624-223-0	4,542	2,122	2,606	27,550	
S-1624-224-0	4,542	2,122	2,606	27,550	
S-1624-238-0	28,470	1,560	4,161	45,990	
S-1624-239-0	2,409	3,635	1,664	16,206	
S-1624-254-0	4,542	2,122	2,606	27,550	
S-1624-255-0	4,542	2,122	2,606	27,550	
S-1624-270-1	2,502	699	294	13,616	
S-1624-285-0	4,468	2,122	2,606	13,552	
S-1624-286-0	4,468	2,122	2,606	13,552	
S-1624-288-0	4,617	2,122	2,606	13,775	
S-1624-295-0	4617	2122	2234	13,775	4095
SSPE2	101,957	38,384	43,976	483,657	> 20,000

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_X	SO_X	PM_{10}	$PM_{2.5}$	CO	VOC
SSPE1	97,340	36,262	41,742	41,742	469,882	> 20,000
SSPE2	101,957	38,384	43,976	43,976	483,657	> 20,000
Major Source Threshold	20,000	140,000	140,000	200,000	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 NOx, CO and VOC emissions and will remain a Major Source 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)						
	NO2	VOC	SO2	CO	PM	PM10
Estimated Facility PE before Project Increase		>250				
PSD Major Source Thresholds	250	250	250	250	250	250
PSD Major Source ? (Y/N)		y				

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

6. Baseline Emissions (BE)

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

Pursuant to District Rule 2201, BE = PE1 for:

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

otherwise,

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

Since this is a new emissions unit at S-1624, 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 NOx 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_x	4617	50,000	n
SO_x	na	80,000	N
PM_{10}	na	30,000	N
VOC	4095	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.

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_x	4617	0	Y
VOC	4095	0	Y
PM_{10}	na	30,000	
$PM_{2.5}$	na	20,000	
SO_x	na	80,000	

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

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 a existing PSD Major Source. Because the project is not located within 10 km (6.2 miles) of a Class 1 area – modeling of the emission increase is not required to determine if the project is subject to the requirements of Rule 2410.

II. Project Emission Increase – Significance Determination

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

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

PSD Significant Emission Increase Determination: Potential to Emit (tons/year)					
	NO2	SO2	CO	PM	PM10
Total PE from New and Modified Units	2.3	5.3	6.9	1.1	2.8
PSD Significant Emission Increase Thresholds	40	40	100	25	15
PSD Significant Emission Increase?	n	n	n	n	n

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

10. Quarterly Net Emissions Change (QNEC)

The 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

Rule 2201 New and Modified Stationary Source Review Rule

A. Best Available Control Technology (BACT)

1. BACT Applicability

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

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

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

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

As seen in Section VII.C.2 above, the applicant is proposing to install a new steam generator with a PE greater than 2 lb/day for NO_X, SO_X, PM_{10}, CO, and VOC. Therefore BACT for new units with PE > 2 lb/day purposes is triggered for NO_X, SO_X, PM_{10}, CO, and VOC.

2. BACT Guideline

BACT Guideline 1.2.1, applies to the oilfield steam generators greater >= 20 MMBtu/hr. [Oilfield Steam Generator (> or =20 MMBtu/hr)](See **Appendix E**)

3. Top-Down BACT Analysis

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

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

NO_X: 5 ppmvd @ 3% O_2
SO_X, PM10: 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_2
VOC: Gaseous fuel

B. Offsets

1. Offset Applicability

Note that section 4.6.7 of Rule 2201 provides an offset exemption for units that were previously offset and later moved to a different stationary source. The subject steam generator was authorized in project S1130131 in E&B's Heavy Oil Western stationary source as ATC S-1807-69-0 and will be authorized to operate in their Heavy Oil Central stationary source in this project. Note that S-1807-69-0's emission increases were not mitigated via ERCs; the emission increases were mitigated via a netting action. Therefore, the section 4.6.7 offset exemption cannot be utilized.

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

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

Offset Determination (lb/year)					
	NO_X	SO_X	PM_{10}	CO	VOC
SSPE2	101,957	38,384	43,976	483,657	>20,000
Offset Thresholds	20,000	54,750	29,200	200,000	20,000
Offsets triggered?	y	n	y	y	y

2. Quantity of Offsets Required

As seen above, the SSPE2 is greater than the offset thresholds for NO_X, PM_{10}, CO, and VOC emissions; therefore offset calculations will be required for this project.

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

Offsets Required (lb/year) = (Σ[PE2 – BE] + ICCE) x DOR, for all new or modified emissions units in the project,

Where,
PE2 = Post Project Potential to Emit, (lb/year)
BE = Baseline Emissions, (lb/year)
ICCE= Increase in Cargo Carrier Emissions, (lb/year)
DOR = Distance Offset Ratio, determined pursuant to Section 4.8

BE = Pre-project Potential to Emit for:

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

otherwise,

BE = Historic Actual Emissions (HAE)

The facility is proposing to install a new emissions unit; therefore its Baseline Emissions are equal to zero. There are no increases in cargo carrier emissions; therefore offsets can be determined as follows:

Offsets Required (lb/year) = (Σ[PE2 – BE]) x DOR

NO_X Offset Calculations

Offsets Required (lb/year) = ([PE2 – BE]) x DOR

PE2 = 4,617 lb/year
BE = 0 lb/year

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

Offsets Required (lb/year) = ([4,617 – 0]) x DOR
= 4,617 x 1.5
= 6,926 lb-NO_X/year

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

Pollutant	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
NOx	1731.5	1731.5	1731.5	1731.5

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

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

Redistribution of Required Quarterly Offsets (where X is the annual amount of offsets, and X ÷ 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:

1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
1731	1731	1732	1732

The applicant has stated that the facility plans to use ERC certificates S-4585-2 to offset the increases in NO_X emissions associated with this project. The above certificate has available quarterly NO_X credits as follows:

Certificate	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
S-4399-2	22,239	19,580	19,000	20,955

As seen above, the facility has proposed sufficient credits to fully offset the quarterly NOx emission 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_X 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 fourth quarter - 1,732 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 4/21/11) for the ERC specified below. [District Rule 2201]

- {GC# 1983} ERC Certificate Numbers S-4585-2 (or certificates split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201]

PM10 Offset Calculations

Offsets Required (lb/year) = ([PE2 – BE]) x DOR

PE2 = 2234 lb/year
BE = 0 lb/year

The approved distance offset ratio is 1.5:1 because the emission reductions originated greater than 15 miles for the proposed unit.

Offsets Required (lb/year) = ([2234 – 0]) x DOR
= 2234 x 1.5
= 3351 lb-PM10/year

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

Pollutant	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
PM10	837.75	837.75	837.75	837.75

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

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

Redistribution of Required Quarterly Offsets (where X is the annual amount of offsets, and X ÷ 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:

1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
837	838	838	838

The applicant has stated that the facility plans to use ERC certificates S-4585-4 and S-4615-4 to offset the increases in PM10 emissions associated with this project. The above certificates have available quarterly PM10 credits as follows:

Per section 4.13.7 of Rule 2201, AER for PM that occurred from October through March, inclusive, may be used to offset increases in PM during any period of the year.

Certificate	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
S-4615-4	0	0	0	2946
S-4585-4	7919	6656	6491	7040

As seen above, the facility has proposed sufficient credits to fully offset the quarterly PM10 emission increase associated with this project.

Proposed Rule 2201 (offset) Conditions

- {GC# 4447 - edited} Prior to operating equipment under this Authority to Construct, permittee shall surrender PM10 emission reduction credits for the following quantity of emissions: 1st quarter – 837 lb, 2nd quarter – 838 lb, 3rd quarter - 838 lb, and fourth quarter - 838 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 4/21/11) for the ERC specified below. [District Rule 2201]

- {GC# 1983} ERC Certificate Numbers S-4585-4 and S-4615-4 (or certificates split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201]

CO Offset Calculations

CO offsets are triggered by CO emissions in excess of 200,000 lb/year for the facility. However, pursuant to Section 4.6.1, "Emission Offsets shall not be required for the following: increases in carbon monoxide in attainment areas if the applicant demonstrates to the satisfaction of the APCO, that the Ambient Air Quality Standards are not violated in the areas to be affected, and such emissions will be consistent with Reasonable Further Progress, and will not cause or contribute to a violation of Ambient Air Quality Standards (AAQS)."

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

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

VOC Offset Calculations

Offsets Required (lb/year) = ([PE2 – BE]) x DOR

PE2 = 4,095 lb/year
BE = 4,739 lb/year (tank S-1624-30, to be surrendered)

Offsets Required (lb/year) = ([4,095– 4,739]) x DOR

= -644 x DOR
= 0 lb VOC/year

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

C. Public Notification

1. Applicability

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

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

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

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

b. PE > 100 lb/day

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

c. Offset Threshold

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

Offset Thresholds				
Pollutant	SSPE1 (lb/year)	SSPE2 (lb/year)	Offset Threshold	Public Notice Required?
NO_X	97,340	101,956	20,000 lb/year	No
SO_X	36,262	38,384	54,750 lb/year	No
PM_{10}	41,742	43,976	29,200 lb/year	No
CO	469,882	483,657	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	SSIPE Public Notice Threshold	Public Notice Required?
NO_x	97,340	101,956	4616	20,000 lb/year	No
SO_x	36,262	38,384	2122	20,000 lb/year	No
PM_{10}	41,742	43,976	2234	20,000 lb/year	No
CO	469,882	483,657	13,775	20,000 lb/year	No
VOC	>20,000	>20,000	4095	20,000 lb/year	No

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

e. Title V Significant Permit Modification

Since this facility does not have a Title V operating permit, this change is not a Title V significant Modification, and therefore public noticing is not required.

2. Public Notice Action

As discussed above, public noticing is required for this project triggering a Federal Major Modification. 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 with a maximum sulfur content of 1.0 gr S/100 scf. [District Rules 2201 and 4320] N

Emission rates shall not exceed any of the following: NOx (as NOx): 5 ppmvd @ 3% O2 or 0.0061 lb/MMBtu; SOx:0.00285 lb/MMBtu; PM10: 0.003 lb/MMBtu; CO: 25 ppmvd @ 3% O2 or 0.0185 lb-CO/MMBtu; or VOC: 0.0055 lb/MMBtu. [District Rules 2201 and 4320] N

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 permit 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)] N

- 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)]

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_X, CO, and SO_X. As shown by the AAQA summary sheet the proposed equipment will not cause a violation of an air quality standard for NO_X, CO, or SO_X.

The proposed location is in a non-attainment area for the state's PM_{10} as well as federal and state $PM_{2.5}$ thresholds. As shown by the AAQA summary sheet the proposed equipment will not cause a violation of an air quality standard for PM_{10} and $PM_{2.5}$.

G. Compliance Certification

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

H. Alternate Siting Analysis

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

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

Pursuant to their current operating permit, this facility is an existing major source; however, the facility has not received their Title V permit. An application to comply with Rule 2520 - *Federally Mandated Operating Permits* has already been submitted to the District. Therefore, no action is required at this time.

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-Industrial Steam Generators between 10 MMBtu/hr and 100 MMBtu/hr (post-6/9/89 construction, modification or, reconstruction). Subpart Dc has standards for SO_X and PM_{10}. The 85 MMBtu/hr steam generator is subject to Subpart Dc requirements.

60.42c – Standards for Sulfur Dioxide

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

60.43c – Standards for Particulate Matter

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

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

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

60.46c – Emission Monitoring for Sulfur Dioxide

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

60.47c – Emission Monitoring for Particulate Matter

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

60.48c – Reporting and Recordingkeeping Requirements

Section 60.48c (a) states that the owner or operator of each affected facility shall submit notification of the date of construction or reconstruction, 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_2 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_2 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 IC engine is 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 F**), 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:

RMR Summary			
Categories	Type of Unit (Unit 1-0)	Project Totals	Facility Totals
Prioritization Score	NA	NA	>1
Acute Hazard Index	0.0	0.0	0.64
Chronic Hazard Index	0.0	0.0	0.02
Maximum Individual Cancer Risk (10^{-6})	0.01	0.01	17.0
T-BACT Required?	No		
Special Permit Conditions?	Yes		

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_{10} Emission Factor: 0.005 lb-PM_{10}/MMBtu
Percentage of PM as PM_{10} in Exhaust: 100%
Exhaust Oxygen (O_2) Concentration: 3%

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

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

$$GL = 0.005\ grain/dscf < 0.1\ grain/dscf$$

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 NOx, CO, SO2 and PM10 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 NOx emitted over the previous year.

The steam generator is rated at greater than 5 MMBtu/hr heat input. Therefore this rule applies.

Section 5.1 NOx 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_x 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_X 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

E&B has proposed to comply with Rule 4320 by limiting the burner to 5 ppm-NO_X @ 3% O_2 (or 0.0062 lb-NO_X/MMBtu). The following condition will be listed on the ATC to ensure compliance:

- Emission rates shall not exceed any of the following: NOx (as NOx): 5 ppmvd @ 3% O2 or 0.0062 lb/MMBtu; SOx:0.00285 lb/MMBtu; PM10: 0.0076 lb/MMBtu; CO: 25 ppmvd @ 3% O2 or 0.0185 lb-CO/MMBtu; or VOC: 0.0055 lb/MMBtu. [District Rules 2201 and 4320] N

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 NOx 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 NOx 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 NOx Compliance Deadline specified in Section 5.2 Table 1, operators shall install and properly operate an emission control system that reduces SO_2 emissions by at least 95% by weight; or limit exhaust SO_2 to less than or equal to 9 ppmv corrected to 3.0% O2.

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.

E&B 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 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 will not be subject to the emission limits in Sections 5.2 and 5.2.2. The following conditions will be listed on the ATC:

- E&B is not proposing low use status and does not request addition of startup or shutdown provisions.

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_X, CO and O_2, or implement an APCO-approved alternate monitoring.

E&B proposes to use Alternate Monitoring Scheme A (pursuant to District Policy SSP-1105), which requires that monitoring of NO_X, CO, and O_2 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 ATC to ensure compliance with the requirements of the proposed alternate monitoring plan:

- {4063} 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]

- {4064} If either the NOX or CO concentrations corrected to 3% O2, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4305, 4306 and 4320]

- {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]

- {4066} 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]

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 Permit 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 ATC 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 ATC 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 ATC 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_X 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 ATC 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 permit 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 permit 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:

Pollutant	Units	Test Method Required
NO_X	ppmv	EPA Method 7E or ARB Method 100
NO_X	lb/MMBtu	EPA Method 19
CO	ppmv	EPA Method 10 or ARB Method 100
Stack Gas O_2	%	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
Total Sulfur as Hydrogen Sulfide (H_2S) 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 permit 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 (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] 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 ATC:

- 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_x Major Sources that are not located west of Interstate 5 in Fresno, Kings, or Kern counties. The facility is a NO_x 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_2, on a dry basis averaged over 15 consecutive minutes. As the combustion equipment associated with this project will be fired on natural gas, continued 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

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

On December 17, 2009, the District's Governing Board adopted a policy, APR 2005, *Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency,* for addressing GHG emission impacts when the District is Lead Agency under CEQA and approved the District's guidance document for use by other agencies when addressing GHG impacts as lead agencies under CEQA. Under this policy, the District's determination of significance of project-specific GHG emissions is founded on the principal that projects with GHG emission reductions consistent with AB 32 emission reduction targets are considered to have a less than significant impact on global climate change. Consistent with District Policy 2005, projects complying with an approved GHG emission reduction plan or GHG mitigation program, which avoids or

substantially reduces GHG emissions within the geographic area in which the project is located, would be determined to have a less than significant individual and cumulative impact for GHG emission.

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

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

Industries covered by Cap-and-Trade are identified in the regulation under section 95811, Covered Entities:

1. Group 1: Large industrial facilities

   These types of facilities are subject to Cap and Trade, and the specific companies covered are listed at http://www.arb.ca.gov/cc/capandtrade/capandtrade.htm, Section 95811 (a), under the "Publically Available Market Information" section (list maintained by the California Air Resources Board).

2. Group 2: Electricity generation facilities located in California, or electricity importers

   These types of facilities are subject to Cap and Trade (section 95811, b).

3. Group 3: Suppliers of Natural Gas, Suppliers of Reformulated Gasoline Blendstock for Oxygenate Blending and Distillate Fuel Oil, Suppliers of Liquefied Petroleum Gas, and Suppliers of Blended Fuels

   These entities are subject to Cap and Trade compliance obligations which must cover all fuels (except jet fuels) identified in section 95811 (c) through (f) of the Cap-and-Trade regulation delivered to end users in California, less the fuel delivered to covered entities (group 1 above).

This facility is subject to the Cap-and-Trade regulation. Therefore, as discussed above, consistent with District Policies APR 2005 and APR 2025, the District concludes that the

GHG emissions increases associated with this project would have a less than significant individual and cumulative impact on global climate change.

District CEQA Findings

The District is the Lead Agency for this project because there is no other agency with broader statutory authority over this project. The District performed an Engineering Evaluation (this document) for the proposed project and determined that the activity will occur at an existing facility and the project involves negligible expansion of the existing use. Furthermore, the District determined that the activity will not have a significant effect on the environment. The District finds that the activity is categorically exempt from the provisions of CEQA pursuant to CEQA Guideline § 15301 (Existing Facilities), and finds that the project is exempt per the general rule that CEQA applies only to projects which have the potential for causing a significant effect on the environment (CEQA Guidelines §15061(b)(3)).

IX. Recommendation

Compliance with all applicable rules and regulations is expected. Pending a successful NSR Public Noticing period, issue ATC S-1624-295-0 subject to the permit conditions on the attached draft ATC in **Appendix H**.

X. Billing Information

Annual Permit Fees			
Permit Number	Fee Schedule	Fee Description	Annual Fee
S-1624-295-0	3020-02 H	85 MMBtu/hr	$1080

Appendixes

A: Quarterly Net Emissions Change
B: PTO S-1624-30
C: Gas Analysis
D: PTO S-1624-30 Emission Calculations
E: BACT Guideline and Analysis
F: HRA and AAQA Summary
G: Compliance Certification
H: Draft ATC

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:

S-1807-69-0 Quarterly NEC [QNEC]					
	PE2 (lb/yr)	PE2 (lb/qtr)	PE1 (lb/yr)	PE1 (lb/qtr)	QNEC (lb/qtr)
NO_X	4616	1,154	0	0	1,154
SO_X	2122	531	0	0	531
PM_{10}	5659	1,415	0	0	1,415
CO	13,775	3,444	0	0	3,444
VOC	4095	1,024	0	0	1,024

Application Emissions

Permit #: S-1624-295-0	**Last Updated**
Facility: E&B NATURAL RESOURCES MGMT	09/18/2015 TORID

Equipment Pre-Baselined: NO

	NOX	SOX	PM10	CO	VOC
Potential to Emit (lb/Yr):	4616.0	2122.0	5659.0	13775.0	4095.0
Daily Emis. Limit (lb/Day)	12.6	5.8	15.5	37.7	11.2
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	1154.0	2122.0	1415.0	3444.0	1024.0
Q2:	1154.0	2122.0	1415.0	3444.0	1024.0
Q3:	1154.0	2122.0	1415.0	3444.0	1024.0
Q4:	1154.0	2122.0	1415.0	3444.0	1024.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					
Quarterly Offset Amounts (lb/Qtr)					
Q1:					
Q2:					
Q3:					
Q4:					

APPENDIX B
PTO S-1624-30

San Joaquin Valley
Air Pollution Control District

PERMIT UNIT: S-1624-30-2 **EXPIRATION DATE:** 06/30/2018

SECTION: NE32 **TOWNSHIP:** 27S **RANGE:** 27E

EQUIPMENT DESCRIPTION:
250 BBL FIXED ROOF PETROLEUM STORAGE TANK WITH PV VENT, GRIMES #3

PERMIT UNIT REQUIREMENTS

1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. When this tank is not operated (dormant for Rule 4623), all liquids shall be removed and the produced crude oil inlet line shall be physically disconnected. [District Rule 2080]
3. Results of TVP test on material introduced to this tank upon reactivation shall be submitted to the District within 60 days of recommencing operation of this tank. [District Rule 2080]
4. Permittee shall notify the District at least seven (7) calendar days prior to recommencing operation. [District Rule 1070]
5. 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]
6. This tank shall only store, place, or hold organic liquid with a true vapor pressure (TVP) of less than 0.5 psia under all storage conditions. [District Rule 4623]
7. 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]
8. The API gravity of crude oil or petroleum distillate shall be determined by using ASTM Method D 287 e1 "Standard Test Method for API Gravity of Crude Petroleum and Petroleum Products (Hydrometer Method). Sampling for API gravity shall be performed in accordance with ASTM Method D 4057 "Standard Practices for Manual Sampling of Petroleum and Petroleum Products." [District Rule 4623]
9. 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]
10. The TVP testing shall be conducted at actual storage temperature of the organic liquid in the tank. The permittee shall also conduct an API gravity testing. [District Rule 4623]
11. 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]
12. 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]
13. 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]

APPENDIX C
Gas Analysis

ZALCO LABORATORIES, INC.
4309 Armour Avenue, Bakersfield, CA 93308 (661) 395-0539 FAX (661) 395-8069 www.zalcolabs.com
2186 Eastman Avenue, Suite 101, Ventura, CA 93003 (805) 477-0154 FAX (805) 477-0144

E & B Natural Resources Corp.
34740 Merced Ave.
Bakersfield CA 93308

Attention: Greg Youngblood

Laboratory No: 1508117-01
Date Received: 08/11/15
Date Analyzed: 08/11/15
Date Completed: 8/18/15 9:11 AM

Sample Description: Poso Creek Section 5 Flare Gas [S-1624-218]
Sampled: 8/11/2015 @ 9:25:00 AM by Justin Graves

Chromatographic Analysis, ASTM D-1945-03; ASTM D-3246-11

Constituent:	Result	Units
Sulfur	0.12	grs S/100 SCF
Total Sulfur	1.96	ppmv

Chromatographic Analysis, ASTM D-1945-03; ASTM D-3588-98; GPA 2145-09; ASTM D-3246-11

Constituent:	Mole %	Weight %	GPM (Gallons per 1000.000 cubic feet)	GPM Fractions	CHONS%
					Carbon, C
Oxygen	0.080	0.159			73.07
Nitrogen	0.710	1.218			
Hydrogen	0.015	0.002			Hydrogen, H
Carbon Dioxide	0.594	1.603			24.37
Carbon Monoxide	0.000	0.000			
					Oxygen, O
Methane	98.578	96.870			1.33
Ethane	0.059	0.108			
Propane	0.002	0.006	0.001	(C3...C3) = 0.001	Nitrogen, N
Isobutane	0.001	0.004	0.000		1.22
n-Butane	0.004	0.016	0.001	(C3...C4) = 0.002	
Isopentane	0.001	0.002	0.000		Sulfur, S
n-Pentane	0.000	0.002	0.000	(C3...C5) = 0.003	0.00
Hexanes	0.000	0.000	0.000	(C3...C6+) = 0.001	
Totals:	100.00	100.00	0.002	0.008	100.00

Flammable Gases:		98.595	
Gas Properties calculated @ STP:	degrees F.	60	
Measurement Base Pressure @ STP:	psia	14.696	H/C Ratio: 0.33

Gas State	Dry Btu / Cu. Ft		Wet Btu / Cu. Ft
Gross, Ideal Gas	996.49	23174.88	979.15
Net, Ideal Gas	897.25	20865.64	881.64
Gross, Real Gas	998.47		981.09
Net, Real Gas	899.03		883.39

Relative Gas Density: [Air=1] Ideal:	0.5634
Specific Gravity, [Air=1] Real gas:	0.5642
Real Gas Density, Lb/Cu.Ft.:	0.0431
Specific Volume, Cu.Ft./Lb:	23.2102
Relative Liquid Density @ 60F/60F:	0.3659
Compressibility, 'Z'	0.9980
Fuel kg per kg-mole Molecular wt avg	16.317

Appendix D
PTO S-1624-30 Emission Calculations

E&B Natural Resources Management, Inc.
Grimes 250 bbl Stock

Tank Input Data	
permit number (S-xxxx-xx-xx)	S-1624-30-2
facility tank I.D.	Stock
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)	15
capacity of tank (bbl)	250
conical or dome roof? (c, d)	c
shell height of tank (feet)	8
average liquid height (feet)	5
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

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Liquid Input Data	A	B
maximum daily fluid throughput (bbl)		250
maximum annual fluid throughput (bbl)		91,250
------This row only used if flashing losses occur in this tank------		250
------This row only used if flashing losses occur in this tank------		91,250
molecular weight, Mw (lb/lb-mol)		100

Calculated Values	A	B
daily maximum ambient temperature, Tax (°F)		77.65
daily minimum ambient temperature, Tan (°F)		53.15
daily total solar insulation factor, I (Btu/ft^2-day)		1648.9
atmospheric pressure, Pa (psia)		14.47
(psia)	99.0	0.9259
(psia)	88.2	0.6653
water vapor pressure at average liquid surface temperature (Tla), Pva (psia)	93.6	0.7903
roof outage, Hro (feet)		0.1563
vapor space volume, Vv (cubic feet)		557.76
paint factor, alpha		0.66
vapor density, Wv (lb/cubic foot)		0.0084
daily vapor temperature range, delta Tv (degrees Rankine)		49.04
vapor space expansion factor, Ke		0.1032

Results	lb/year	lb/day
Standing Storage Loss	177	0.48
Working Loss	4,563	12.50
Flashing Loss	N/A	N/A
Total Uncontrolled Tank VOC Emissions	4,739	13.0

Summary Table	
Permit Number	S-1624-30-2
Facility Tank I.D.	Stock
Tank capacity (bbl)	250
Tank diameter (ft)	15
Tank shell height (ft)	8
Conical or Dome Roof	Conical
Maximum Daily Fluid Throughput (bbl/day)	250
Maximum Annual Fluid Throughput (bbl/year)	91,250
Maximum Daily Oil Throughput (bbl/day)	250
Maximum Annual Oil Throughput (bbl/year)	---
Total Uncontrolled Daily Tank VOC Emissions (lb/day)	13.0
Total Uncontrolled Annual Tank VOC Emissions (lb/year)	4,739

Appendix E
BACT Guideline and Top Down BACT Analysis

Top Down BACT Analysis for Steam Generator

For the steam generator, BACT is required for NOx, SOx, PM_{10}, CO, and VOC.

Top-Down BACT Analysis for NO_X Emissions

a. Step 1 - Identify All Possible Control Technologies

From the SJVUAPCD BACT Clearinghouse, Guideline 1.2.1, Oilfield Steam Generator (≥ 20 MMBtu/hr), 4th quarter 2014, identifies BACT for NOx emissions as follows:

Pollutant	Achieved in Practice or contained in SIP	Technologically Feasible	Alternate Basic Equipment
NOx	• Units rated 85 MMBtu/hr and fired solely on PUC quality natural gas: 6 ppmvd @ 3% O2; or • Units firing on > 50% PUC quality natural gas, commercial propane, and/or LPG: 7 ppmvd @ 3% O2, except units rated 85 MMBtu/hr and fired solely on PUC qualify natural gas; or • Units firing on < 50% PUC quality natural gas, commercial propane, and/or LPG: 9 ppmvd @ 3% O2	5 ppmvd @ 3% O2	

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. 5 ppmvd @ 3% O_2 (Technologically Feasible)
2. 6 ppmvd @ 3% O_2 (Achieved in Practice)

Step 4 - Cost Effectiveness Analysis

The applicant has proposed to limit the NO_X emissions of the steam generator in this project to 5 ppmv @ 3% O_2; therefore a cost effective analysis is not required.

Step 5 - Select BACT

BACT for NOx emissions from the oilfield steam generator is 5 ppmvd @ 3% O2. The applicant has proposed to install a steam generator with a NOx limit of 5 ppmvd @ 3% O2; therefore, BACT for NOx emissions is satisfied.

Top Down BACT Analysis for SO_X and PM_{10} Emissions

Step 1 - Identify all control technologies

From the SJVUAPCD BACT Clearinghouse, Guideline 1.2.1, Oilfield Steam Generator (≥ 20 MMBtu/hr), 4th quarter 2014, identifies BACT for SOx and PM_{10} emissions as follows:

Pollutant	Achieved in Practice or contained in SIP	Technologically Feasible	Alternate Basic Equipment
SOx and PM_{10}	Fired on PUC quality natural gas, commercial propane, and/or commercial LPG; or gaseous fuel treated to remove 95% by weight of sulfur compounds; or treated such that the sulfur content of all fuel streams combined does not exceed 1 gr of sulfur compounds (as S) per 100 dscf; or use of a continuously operating SO2 scrubber and either achieve 95% by weight control of sulfur compounds or achieve an emissions rate of 9 ppmvd SO2 @ 3% O2		

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 SO2 scrubber and either achieve 95% by weight control of sulfur compounds or achieve an emissions rate of 9 ppmvd SO2 @ 3% O2 (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_X and PM_{10} emissions; therefore, BACT for SO_X and PM_{10} 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 (≥ 20 MMBtu/hr), 4th 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% O2		

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% O2 (Achieved-In-Practice)

Step 4 - Cost Effectiveness Analysis

The applicant has proposed to limit the CO emissions of the steam generator in this project to 25 ppmv @ 3% O2. 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% O2. The applicant has proposed to install a steam generator with a CO limit of 25 ppmvd @ 3% O2; 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 (≥ 20 MMBtu/hr), 4th 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 generator in this project. Since the applicant has chosen the most effective control technology in step 3, a cost effectiveness analysis is not required.

Step 5 - Select BACT

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

APPENDIX F
HRA and AAQA Summary

San Joaquin Valley Air Pollution Control District
Risk Management Review

To:	David Torii – Permit Services
From:	Leland Villalvazo – Technical Services
Date:	September 13, 2015
Facility Name:	E&B Natural Resources
Location:	SE corner of sec 5 T28S, R27E
Application #(s):	S-1627-295-0
Project #:	S1153687

A. RMR SUMMARY

RMR Summary			
Categories	**Type of Unit (Unit 1-0)**	**Project Totals**	**Facility Totals**
Prioritization Score	NA	NA	>1
Acute Hazard Index	0.0	0.0	0.64
Chronic Hazard Index	0.0	0.0	0.02
Maximum Individual Cancer Risk (10^{-6})	0.01	0.01	17.0
T-BACT Required?	No		
Special Permit Conditions?	Yes		

Proposed Permit Conditions

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

Unit # 295-0

The unit shall not operate any closer than 1000 feet from any sensitive receptor.

B. RMR REPORT

I. Project Description

Technical Services received a request on September 10, 2015, to perform a Risk Management Review for a proposed share a 85 MMBtu/hr steam generator that currently operates at S-1807-69 and will also be operated at S-1624-295-0 (HOC).

II. Analysis

Technical Services performed a prioritization using the District's HEARTs database. Since the total facility prioritization score was greater than one, a refined health risk assessment

was required. Emissions calculated using District approved WSPA emission factors for external combustion of natural gas were input into the HEARTs database. The AERMOD model was used, with the parameters outlined below and meteorological data for 2009-2013 from Bakersfield to determine the dispersion factors (i.e., the predicted concentration or X divided by the normalized source strength or Q) for a receptor grid. These dispersion factors were input into the San Joaquin Valley APCD's Hazard Assessment and Reporting Program (SHARP) and 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:

Analysis Parameters Unit 295-0			
Source Type	Point	**Location Type**	Rural
Stack Height (m)	6.096	**Closest Receptor (m)**	Various
Stack Diameter. (m)	1.1	**Type of Receptor**	Residential/ Worker
Stack Exit Velocity (m/s)	17.4	**Max Hours per Year**	8760
Stack Exit Temp. (°K)	389	**Fuel Type**	NG
Burner Rating (MMBtu/hr)	85		

III. *Conclusion*

The acute and chronic indices are below 1.0 and the cancer risk factor associated with the 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 conditions 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.

APPENDIX G
Compliance Certification

E&B Natural Resources

September 8, 2015

RECEIVED
SEP 09 2015
SJVAPCD
Southern Region

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

Subject: Steam Generator - Compliance Certification – EB10 Poso

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.

Signature

HSE MANAGER
Title

APPENDIX H
Draft ATC

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: S-1624-295-0 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: E&B NATURAL RESOURCES MGMT
MAILING ADDRESS: ATTN: SHAMS HASAN
3000 JAMES ROAD
BAKERSFIELD, CA 93308

LOCATION: HEAVY OIL CENTRAL
CA

SECTION: 5 **TOWNSHIP:** 28S **RANGE:** 27E

EQUIPMENT DESCRIPTION:
85 MMBTU/HR NATURAL GAS/WASTE GAS-FIRED STEAM GENERATOR WITH A NORTH AMERICAN LE-85 BURNER AND FLUE GAS RECIRCULATION

CONDITIONS

1. Permit S-1624-30 shall be canceled upon implementation of this ATC. [District Rule 2201]
2. 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 fourth quarter - 1,732 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 4/21/11) for the ERC specified below. [District Rule 2201]
3. ERC Certificate Numbers S-4585-2 (or certificates split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201]
4. Prior to operating equipment under this Authority to Construct, permittee shall surrender PM10 emission reduction credits for the following quantity of emissions: 1st quarter - 837 lb, 2nd quarter - 838 lb, 3rd quarter - 838 lb, and fourth quarter - 838 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 4/21/11) for the ERC specified below. [District Rule 2201]

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director / APCO

Arnaud Marjollet, Director of Permit Services
S-1624-295-0 : Oct 1 2015 1:08PM -- TORID : Joint Inspection NOT Required

5. ERC Certificate Numbers S-4585-4 and S-4615-4 (or certificates split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201]
6. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
7. {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]
8. 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)]
9. Particulate matter emissions shall not exceed 0.1 grain/dscf at operating conditions, nor 0.1 grain/dscf calculated to 12% CO2, nor 10 lb/hr. [District Rules 4201, 4301, 5.1 and 5.2.3]
10. 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]
11. The unit shall only be fired on natural gas with a maximum sulfur content of 1.0 gr S/100 scf. [District Rules 2201 and 4320]
12. Emission rates shall not exceed any of the following: NOx (as NOx): 5 ppmvd @ 3% O2 or 0.0062 lb/MMBtu; SOx:0.00285 lb/MMBtu; PM10: 0.003 lb/MMBtu; CO: 25 ppmvd @ 3% O2 or 0.0185 lb-CO/MMBtu; or VOC: 0.0055 lb/MMBtu. [District Rules 2201 and 4320]
13. 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]
14. 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 2201 and 4320]
15. 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 2201, 4305, 4306 and 4320]
16. 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]
17. 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]
18. 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]
19. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306 and 4320]
20. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081]

CONDITIONS CONTINUE ON NEXT PAGE

21. 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]

22. 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]

23. 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]

24. 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]

25. 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]

26. 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]

27. 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]

28. 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]

29. 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]

30. 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]

31. 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)]

32. 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)]