San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

MAR 0 6 2012

Greg Youngblood
E&B Natural Resources
1600 Norris Road
Bakersfield, CA 93308

Re: Notice of Preliminary Decision - Authority to Construct
Project Number: S-1114353

Dear Mr. Yougblood:

Enclosed for your review and comment is the District's analysis of E&B Natural Resources's application for an Authority to Construct for the relocation of steam generator S-1807-37 from E&B's Heavy Oil Western stationary source to E&B's Heavy Oil Central stationary source (S-1624-215).

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

Thank you for your cooperation in this matter. If you have any questions regarding this matter, please contact Mr. Steve Davidson of Permit Services at (661) 392-5618.

Sincerely,

David Warner
Director of Permit Services

DW: SDD/cm

Enclosures

Seyed Sadredin
Executive Director/Air Pollution Control Officer

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4800 Enterprise Way
Modesto, CA 95356-8718
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Central Region (Main Office)
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www.valleyair.org www.healthyairliving.com

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

MAR 0 6 2012

Mike Tollstrup, Chief
Project Assessment Branch
Stationary Source Division
California Air Resources Board
PO Box 2815
Sacramento, CA 95812-2815

Re: Notice of Preliminary Decision - Authority to Construct
Project Number: S-1114353

Dear Mr. Tollstrup:

Enclosed for your review and comment is the District's analysis of E&B Natural Resources's application for an Authority to Construct for the relocation of steam generator S-1807-37 from E&B's Heavy Oil Western stationary source to E&B's Heavy Oil Central stationary source (S-1624-215).

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

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AIR POLLUTION CONTROL DISTRICT

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MAR 0 6 2012

Gerardo C. Rios (AIR 3)
Chief, Permits Office
Air Division
U.S. E.P.A. - Region IX
75 Hawthorne Street
San Francisco, CA 94105

Re: Notice of Preliminary Decision - Authority to Construct
Project Number: S-1114353

Dear Mr. Rios:

Enclosed for your review and comment is the District's analysis of E&B Natural Resources's application for an Authority to Construct for the relocation of steam generator S-1807-37 from E&B's Heavy Oil Western stationary source to E&B's Heavy Oil Central stationary source (S-1624-215).

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

Thank you for your cooperation in this matter. If you have any questions regarding this matter, please contact Mr. Steve Davidson of Permit Services at (661) 392-5618.

Sincerely,

David Warner
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www.valleyair.org www.healthyairliving.com

Bakersfield Californian

NOTICE OF PRELIMINARY DECISION
FOR THE PROPOSED ISSUANCE OF
AN AUTHORITY TO CONSTRUCT

NOTICE IS HEREBY GIVEN that the San Joaquin Valley Unified Air Pollution Control District solicits public comment on the proposed issuance of Authority to Construct to E&B Natural Resources for the relocation of steam generator S-1807-37 from E&B's Heavy Oil Western stationary source to E&B's Heavy Oil Central stationary source (S-1624-215).

The analysis of the regulatory basis for this proposed action, Project #S-1114353, is available for public inspection at http://www.valleyair.org/notices/public_notices_idx.htm and the District office at the address below. Written comments on this project must be submitted within 30 days of the publication date of this notice to DAVID WARNER, DIRECTOR OF PERMIT SERVICES, SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT, REGION'S ADDRESS.

San Joaquin Valley Air Pollution Control District
Authority to Construct Application Review

Facility Name:	E&B Natural Resources	Date:	February 15, 2012
Mailing Address:	1600 Norris Road	Engineer:	Steve Davidson
	Bakersfield, CA 93308	Lead Engineer:	Dan Klevann
Contact Person:	Greg Youngblood and Scott Faulkenburg (Envirotech)		
Telephone:	661-766-2501 (GY), 661-377-0073 x15 (SF) wkd: 661-345-8263 (SF)		
Fax:	661-766-2348 (GY)		
E-Mail:	sfaulkenburg@ix.netcom.com		
Application #(s):	S-1624-215-0		
Project #:	S-1114353		
Deemed Complete:	January 30, 2012		

I. Proposal

E&B Natural Resources Management (E&B) is requesting an Authority to Construct (ATC) allowing for the relocation of steam generator S-1807-37 from E&B's Heavy Oil Western stationary source to various unspecified locations within E&B's Heavy Oil Central stationary source (S-1624-215). In order to offset the increase in emissions associated with the installation of the steam generator, E&B proposes to offset the increase in emissions within facility S-1624 by surrendering cogeneration units S-1624-106, '-107, '-108 and tank S-1624-40.

Hunter and Vaquero facilities S-1329 and S-1509 are included in the same stationary source (heavy oil central). The potential to emit of these facilities are above the major source threshold, but they qualify as Rule 2530 sources (Please see Compliance Section). Therefore these facilities are not subject to Rule 2520.

Disposition of Outstanding ATCs

There are no outstanding ATCs associated with the equipment in this project. PTO S-1807-37-8 is included in **Attachment I**.

II. Applicable Rules

Rule 2201 New and Modified Stationary Source Review Rule (4/21/11)
Rule 2520 Federally Mandated Operating Permits (6/21/01)
Rule 2530 Federally Enforceable Potential to Emit (12/18/2008)
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 & Process Heaters – Phase II (8/21/03)
Rule 4306 Boilers, Steam Generators & Process Heaters – Phase III 10/16/08)
Rule 4320 Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters Greater than 5.0 MMBtu/hr (10/16/08)
Rule 4351 Boilers, Steam Generators & Process Heaters – Phase I (8/21/03);
Rule 4801 Sulfur Compounds (12/17/92)
CH&SC 41700 Health Risk Assessment
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 at various unspecified locations within E&B's Heavy Oil Central stationary source. The cogeneration units S-1624-106, '-107, '-108 are located at the Wilcox Lease tank setting (SW/4 Section 4, T28S, R27E MDB&M) and tank S-1624-40 is located within the Section 4, Township 28S, Range 27E
The equipment will not be operated 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

E&B will operate the steam generator in their Kern County Heavy Oil Central stationary source for the thermally enhanced production of crude oil and natural gas. In thermally enhanced oil recovery (TEOR), natural gas is combusted in steam generators to produce steam for injection into heavy crude oil bearing strata via injection wells to reduce viscosity of the crude oil, thereby facilitating thermally enhanced oil production.

V. Equipment Listing

Pre-Project Equipment Description:

S-1807-37-8: 27.5 MMBTU/HR GAS-FIRED STEAM GENERATOR WITH GIDEON MODEL MGW-30R1 ULTRA LOW NOX BURNER AND PCL DIFFUSER PLATE, OXYGEN SENSOR, AND VARIABLE FGR CONTROL SYSTEM - VARIOUS UNSPECIFIED LOCATIONS WITHIN FACILITY S-1807

Equipment to be Removed:

S-1624-40-2: 200 BBL FIXED ROOF PETROLEUM STORAGE TANK, MABRY #10

S-1624-106-0: 100 KW COGENERATION UNIT #1 INCLUDING 154 BHP RICH-BURN NATURAL GAS-FIRED NEW MILLENNIUM MOTIVE POWER MODEL GPS-I IC ENGINE WITH 3-WAY CATALYST AND AIR/FUEL CONTROLLER DRIVING A 100 KW ELECTRICAL GENERATOR (WILCOX LEASE)

S-1624-107-0: 100 KW COGENERATION UNIT #2 INCLUDING 154 BHP RICH-BURN NATURAL GAS-FIRED NEW MILLENNIUM MOTIVE POWER MODEL GPS-I IC ENGINE WITH 3-WAY CATALYST AND AIR/FUEL CONTROLLER DRIVING A 100 KW ELECTRICAL GENERATOR (WILCOX LEASE)

S-1624-108-0: 100 KW COGENERATION UNIT #3 INCLUDING 154 BHP RICH-BURN NATURAL GAS-FIRED NEW MILLENNIUM MOTIVE POWER MODEL GPS-I IC ENGINE WITH 3-WAY CATALYST AND AIR/FUEL CONTROLLER DRIVING A 100 KW ELECTRICAL GENERATOR (WILCOX LEASE)

Proposed Modification:

Relocate steam generator from Facility S-1807 and allow operation with various unspecified locations with E&B's HOC stationary source

Post Project Equipment Description:

S-1624-215-0: 27.5 MMBTU/HR GAS-FIRED STEAM GENERATOR WITH GIDEON MODEL MGW-30R1 ULTRA LOW NOX BURNER AND PCL DIFFUSER PLATE, OXYGEN SENSOR, AND VARIABLE FGR CONTROL SYSTEM AUTHORIZED TO OPERATE AT VARIOUS UNSPECIFIED LOCATIONS WITHIN THE HEAVY OIL CENTRAL STATIONARY SOURCE, KERN COUNTY

VI. Emission Control Technology Evaluation

The combustion equipment in this project is capable of generating NOx, CO, VOC, PM10 and SOx emissions due to the combustion of natural gas. The NOx emissions is lowered by usage of a Gideon Ultra Low NOx burner.

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

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

VII. General Calculations

A. Assumptions

- Natural Gas Heating Value: 1,000 Btu/scf (District Practice)
- F-Factor for Natural Gas: 8,578 dscf/MMBtu corrected to 60°F (40 CFR 60, Appendix B)
- Facility will operate 24 hours per day and 365 days per year.
- Tank S-1624-40's PE was calculated in project S-1084121.
- Sulfur Content = 1 grain/100 scf (see gas analysis Attachment IX)

B. Emission Factors

EFs S-1624-106, -107, and -108					
Source	NOx (ppm—g/hp-hr)	SOx (g/hp-hr)	PM_{10} (g/hp-hr)	CO (ppm-g/hp-hr)	VOC (ppm-g/hp-hr)
Current PTO	9 - 0.15	0.011	0.02	56 - 0.6	25 - 0.15

Post-Project EFs S-1624-215					
Source	NOx (ppm-lb/MMBtu)	SOx (lb/MMBtu)	PM_{10} (lb/MMBtu)	CO (ppm-lb/MMBtu)	VOC (lb/MMBtu)
Applicant Proposed	7 - 0.008	0.00285	0.0076	100 - 0.074	0.0055

C. Calculations

1. Pre-Project Potential to Emit (PE1)

Tank S-1624-40-2:

VOC: 5.4 lb/day – 1968 lb/year

Cogeneration units S-1624-106-0, '-107-0, and '-108-:

PE1 = (Engine rating) x (EF2)

Daily PE1 (NOx) = (154 Bhp) x (0.15 g/Bhp-hr) x (24 hr/day) x (1 lb/453.6 g)
= 1.2 lb/day

Annual PE1 (NOx) = (1.2 lb/day) x (365 day/yr) = 438 lb/yr

Pre-Project Potential to Emit (PE1)					
	NO_X	SO_X	PM_{10}	CO	VOC
Daily (lb/day)	1.2	0.1	0.2	4.9	1.2
Annual (lb/yr)	438	37	73	1,789	438

2. Post Project Potential to Emit (PE2)

The daily pre-project emission limit for NOx was retained from the current PTO S-1807-37 based on the previous NOx emission factors to allow higher start-up and shutdown emissions and daily steady-state emissions.

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

- PE2 = EF (lb/MMBtu) × Heat Input (MMBtu/hr) × Op. Sched. (hr/day or hr/year)

Daily Post Project Potential to Emit (PE2)						
Permit Unit	Burner Size (MMBtu)	NOx	SOx	PM_{10}	CO	VOC
S-1624-215-0	27.5	5.3	1.9	5.0	48.8	3.6

Annual Post Project Potential to Emit (PE2) – lb/yr						
Permit Unit	Burner Size (MMBtu)	NOx	SOx	PM_{10}	CO	VOC
S-1624-215-0	27.5	1927	694	1831	17,827	1325

The emissions profile is included in **Attachment V.**

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

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

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

The SSPE1 for NO_X, SO_X, PM_{10} and CO is calculated in Attachment IV and presented in the following table.

SSPE1 (lb/year)				
	NO_X	SO_X	PM_{10}	CO
SSPE1	18,454	6064	6945	69,456

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

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

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

The SSPE2 for NOX, SOX, PM10 and CO is calculated and presented in the following table.

SSPE2 (lb/year)				
Permit Unit	NO_X	SO_X	PM_{10}	CO
SSPE1	18,454	6064	6945	69,456
S-1624-106-0	-438	-37	-73	-1,789
S-1624-107-0	-438	-37	-73	-1,789
S-1624-108-0	-438	-37	-73	-1,789
S-1624-215-0	1927	694	1831	17,827
SSPE2	19,067	6647	8,557	81,916

Unit to be surrendered

5. Major Source Determination

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

This source is an existing Major Source for VOC emissions and will remain a Major Source for VOC.

Major Source Determination (lb/year)				
	NO_X	SO_X	PM_{10}	CO
SSPE1	18,454	6064	6945	69,456
SSPE2	19,067	6647	8,557	81,916
Major Source Threshold	20,000	140,000	140,000	200,000
Major Source?	No	No	No	No

As seen in the table above, the facility is not an existing Major Source for NO_X, SO_X, PM_{10} and CO.

6. Baseline Emissions (BE)

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

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

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

otherwise,

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

Clean Emissions Unit, Located at a Major Source
Pursuant to Rule 2201, a Clean Emissions Unit is defined as an emissions unit that is "equipped with an emissions control technology with a minimum control efficiency of at least 95% or is equipped with emission control technology that meets the requirements for achieved-in-practice BACT as accepted by the APCO during the five years immediately prior to the submission of the complete application.

Tank S-1624-40 is equipped with a PV vent, which meets the requirements for achieved-in-practice BACT. Therefore, BE=PE1.

BE = PE1 = 1968 lb-VOC/year

Units S-1624-106, '-107, and '-108 meet the following Achieved in Practice BACT requirements of BACT Guideline 3.3.12, Fossil Fuel Fired IC Engine > 50 HP:

CO - 56 ppmvd @ 15% O2
NOx - 9 ppmvd @ 15% O2
PM_{10} - 0.02 g/bhp-hr
SO_x - PUC quality natural gas
VOC - 25 ppmvd @15% O2

Therefore, BE=PE1.

BE_{NOx} = 438 lb/year
BE_{SOx} = 37 lb/year
BE_{PM10} = 73 lb/year
BE_{CO} = 1789 lb/year
BE_{VOC} = 438 lb/year

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 not a major source for NO_X, SO_X, PM_{10}, and CO, this project does not constitute an SB 288 major modification for NO_X, SO_X, PM_{10}, and CO .

Since this facility is a major source for VOCs 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. Note that any emissions increases of 0.5 lb/day or less round to zero for NSR purposes.

SB 288 Major Modification Thresholds			
Pollutant	Project PE2 (lb/year)	Threshold (lb/year)	SB 288 Major Modification Calculation Required?
VOC	1325	50,000	No

The project is not a SB 288 major Modification.

8. Federal Major Modification

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

Since this facility is not a Major Source for NO_X, SO_X, PM_{10}, and CO, this project does not constitute a Federal Major Modification for NO_X, SO_X, PM_{10}, and CO. Additionally, since the facility is not a major source for PM_{10} (140,000 lb/year), it is not a major source for PM2.5 (200,000 lb/year.

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

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 calculated above and 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?
VOC	1325	0	Yes

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

9. Quarterly Net Emissions Change (QNEC)

The QNEC is calculated solely to establish emissions that are used to complete the District's PAS emissions profile screen. Detailed QNEC calculations are included in Attacchment VII.

VIII. Compliance

Rule 2201 New and Modified Stationary Source Review Rule

A. Best Available Control Technology (BACT)

1. BACT Applicability

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

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

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

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

As discussed in Section I above, there are no new emissions units associated with this project. Therefore BACT for new units with PE > 2 lb/day purposes is not triggered.

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

As discussed in Section I above, there is an emissions unit being relocated from E&B's HOW stationary source to E&B's HOC stationary source, As seen in Section VII.C.2 above, the emissions unit has a PE greater than 2 lb/day for NO_X, PM_{10}, CO, and VOC. Therefore, BACT is triggered for NO_X, PM_{10}, and VOC since the PEs are

greater than 2 lbs/day. BACT is not triggered for CO since the SSPE2 for CO is less than 200,000 lbs/year, as stated in Section VII.C.5 above.

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

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

d. SB 288/Federal Major Modification

As discussed in Section VII.C.7 above, this project does not constitute a SB 288 major Modification for any pollutant. Therefore, BACT of SB 288 is not triggered for the Steam Generator.

As discussed in Section VII.C.7 above, this project does not constitute a Federal Major Modification for NO_X, SO_x, PM_{10}, and CO emissions. Therefore, BACT for NO_X, SO_x, PM_{10}, and CO is not triggered for Federal major Modification of the Steam Generator.

As discussed in Section VII.C.7 above, this project constitutes an Federal Major Modification for VOC emissions. Therefore, BACT is triggered for VOCs for the Steam Generator.

2. BACT Guideline

Please note that BACT Guideline 1.2.1 [Steam Generator (≥ 5 MMBtu/hr, Oilfield] has been rescinded. The NO_X emission limit requirement of District Rule 4320 is lower than the Achieved-in-Practice requirement of BACT Guideline 1.2.1 (14 ppmv @ 3% O2); therefore a project specific BACT analysis will be performed to determine BACT for this project. More details regarding this are provided in Attachment II.

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.

Steam generators S-1246-215-0:

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

NO_X: 7 ppmvd @ 3% O_2
PM_{10}: Gas with a sulfur content does not exceeding 1 gr of sulfur compounds (as S) per 100 scf
VOC: Gaseous fuel

B. Offsets

1. Offset Applicability

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

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

Offset Determination (lb/year)					
	NO_X	SO_X	PM_{10}	CO	VOC
SSPE2	19,067	6647	8,557	81,916	>20,000
Offset Thresholds	20,000	54,750	29,200	200,000	20,000
Offsets triggered?	No	No	No	No	Yes

2. Quantity of Offsets Required

As seen above, the SSPE2 is greater than the offset thresholds for all VOC; therefore offset calculations will be required for this project.

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

Offsets Required (lb/year) = (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 remove one tank (S-1624-40) and three cogeneration units (1624-106 through '-108) that are considered Clean Emissions Units; therefore, Baseline Emissions are equal to PE1 for these units.

The facility is proposing to relocate on steam generator (S-1624-215-0) to the facility; therefore, Baseline Emissions are equal to zero for this unit.

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

For all Units:
ICCE = 0 lb/yea)
DOR = 1

PE2 (lb/yr)	
	VOC
S-1624-40	0
S-1624-106	0
S-1624-107	0
S-1624-108	0
S-1624-215	1325
Total	1325

BE (lb/yr)	
	VOC
S-1624-40	1968
S-1624-106	438
S-1624-107	438
S-1624-108	438
S-1624-215	0
Total	3282

Offsets Required (lb/year) = ([0 – 1968] + [0-438] + [0-438] +[0-438] +[1325-0] + 0) x 1
= < 0 lb-VOC/year

As demonstrated in the calculation above, the amount of offsets is less than 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 SB288 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.

a. New Major Sources, Federal Major Modifications, and SB288 Major Modifications

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

As demonstrated in VII.C.7, this project does not constitute an SB 288; therefore, public noticing for SB 288 Major Modification purposes is not required.

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

c. PE > 100 lb/day

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

d. 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	18,454	19,454	20,000 lb/year	No
SO_X	694	583	54,750 lb/year	No
PM_{10}	6945	8557	29,200 lb/year	No
CO	69,456	81,916	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

e. SSIPE > 20,000 lb/year

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

SSIPE Public Notice Thresholds					
Pollutant	Project PE2 (lb/year)	Project PE1 (lb/year)	SSIPE (lb/year)	SSIPE Public Notice Threshold	Public Notice Required?
NO_x	1927	1341	586	20,000 lb/year	No
SO_x	694	111	3334	20,000 lb/year	No
PM_{10}	1831	216	1615	20,000 lb/year	No
CO	17,827	5367	12,460	20,000 lb/year	No
VOC	1325	3282	-1957	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.

2. Public Notice Action

As discussed above, public noticing is required for this project for Federal major Modification purposes. 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)

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

The DELs for the are a combination of permitted emission factors and equipment rating. The NOx DEL will be specified in terms of lb/day. Therefore, the following conditions will be listed on the ATC:

- Emissions from the unit, except during start up, shut down, or refractory curing, shall not exceed any of the following limits: 7 ppmvd NOx @ 3% O2 or 0.008 lb-NOx/MMBtu, 0.00285 lb-SOx/MMBtu, 0.0076 lb-PM10/MMBtu, 100 ppmvd CO @ 3% O2 or 0.074 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, and 4320] N

- Emission rates shall not exceed any of the following: NOx (as NO2): *11.9* lb/day and 2048 lb/yr. [District Rules 2201]

E. Compliance Assurance

1. Source Testing

This steam generator is subject to District Rule 4305, *Boilers, Steam Generators and Process Heaters, Phase 2*, District Rule 4306, *Boilers, Steam Generators and Process Heaters, Phase 3,* and District Rule 4320, *Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters Greater than 5 MMBtu/hr.* Source testing requirements, in accordance with these rules will be discussed in Section VIII, District Rule 4320, of this evaluation.

2. Monitoring

This steam generator is subject to District Rule 4305, *Boilers, Steam Generators and Process Heaters, Phase 2*, District Rule 4306, *Boilers, Steam Generators and Process Heaters, Phase 3,* and District Rule 4320, *Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters Greater than 5 MMBtu/hr.* Monitoring requirements, in accordance with these rules will be discussed in Section VIII of this evaluation.

3. Recordkeeping

This steam generator is subject to District Rule 4305, *Boilers, Steam Generators and Process Heaters, Phase 2*, District Rule 4306, *Boilers, Steam Generators and Process Heaters, Phase 3*, and District Rule 4320, *Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters Greater than 5 MMBtu/hr.* Recordkeeping, in accordance with these rules will be discussed in Section VIII of this evaluation.

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

- If the unit is fired on PUC-regulated natural gas, then the permittee shall maintain on file copies of all natural gas bills or fuel throughput records for a period of five years. [District Rule 2201] N

- The permittee shall maintain records of: (1) the date and time of NOx, CO, and O2 measurements, (2) the O2 concentration in percent and the measured NOx and CO concentrations corrected to 3% O2, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306, and 4320] N

- {2983} 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, 2201, 4305, and 4306]

4. Reporting

No reporting is required to demonstrate compliance with Rule 2201.

F. Ambient Air Quality Analysis (AAQA)

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

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

The proposed location is in a non-attainment area for PM_{10}. The increase in the ambient PM_{10} concentration due to the proposed equipment is shown on the table titled Calculated Contribution. The levels of significance, from 40 CFR Part 51.165 (b)(2), are shown on the table titled Significance Levels.

Technical Services also performed modeling for criteria pollutants CO, NOx, SOx and PM_{10}, and $PM_{2.5}$. The emission rates used for criteria pollutant modeling were 2.04 lb/hr

CO, 0.22 lb/hr NOx, 0.39 lb/hr SOx, and 0.21 lb/hr PM_{10}. The engineer supplied the maximum fuel rate for the steam generator used during the analysis.

The results from the Criteria Pollutant Modeling are as follows:

Criteria Pollutant Modeling Results

Diesel ICE	1 Hour	3 Hours	8 Hours.	24 Hours	Annual
CO	Pass	X	Pass	X	X
NO_x	Pass[1]	X	X	X	Pass
SO_x	Pass	Pass	X	Pass	Pass
PM_{10}	X	X	X	Pass[2]	Pass[2]
$PM_{2.5}$	X	X	X	Pass[2]	Pass[2]

[1]The project was compared to the 1-hour NO2 National Ambient Air Quality Standard that became effective on April 12, 2010 using the District's approved procedures.
[2]The criteria pollutants are below EPA's level of significance as found in 40 CFR Part 51.165 (b)(2).

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

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 constitute a Title I modification, therefore this requirement is applicable. E&B's compliance certification is included in Attachement VIII.

H. Alternate Siting Analysis

The current project occurs at an existing facility. The applicant proposes to install a 27.5 MMBtu/hr 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 2520 Federally Mandated Operating Permits

Since this facility's emissions exceed the major source thresholds of District Rule 2201, this facility is a major source. However, this facility has elected to comply with Rule 2530, which, per Section 4.6 of Rule 2520, exempts it from the requirements of Rule 2520.

Rule 2530 Federally Enforceable Potential to Emit

The purpose of this rule is to restrict the emissions of a stationary source so that the source may elect to be exempt from the requirements of Rule 2520. Per Section 6.1 of Rule 2530, this facility has elected exemption from the requirements of Rule 2520 by ensuring actual emissions from the stationary source in every 12-month periods to not exceed the following: ½ the major source thresholds for NOx, VOCs, CO, and PM_{10}; 50 tons per year SO2; 5 tons per year of a single HAP; 12.5 tons per year of any combination of HAPs; 50 percent of any lesser threshold for a single HAP as the EPA may establish by rule; and 50 percent of the major source threshold for any other regulated air pollutant not listed in 6.1.1 and 6.1.6 of Rule 2530.

District Rule 4001 New Source Performance Standards

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)

This steam generator has a rating of 27.5 MMBtu/hr and is fired on natural gas. Subpart Dc has no standards for gas-fired steam generators. Therefore subpart Dc does not apply.

Rule 4101 Visible Emissions

Per Section 5.0, no person shall discharge into the atmosphere emissions of any air contaminant aggregating more than 3 minutes in any hour which is as dark as or darker than Ringelmann 1 (or 20% opacity). As the steam generator is fired solely on natural gas, visible emissions are not expected to exceed Ringelmann 1 or 20% opacity. The following condition will be listed on the steam generator permits to ensure compliance:

- 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]

Rule 4102 Nuisance

Section 4.0 prohibits discharge of air contaminants which could cause injury, detriment, nuisance or annoyance to the public. Public nuisance conditions are not expected as a result of these operations provided the equipment is well maintained. Therefore, compliance with this rule is expected.

California Health & Safety Code 41700 (Health Risk 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 or equal to one. According to the Technical Services Memo for this project (**Attachment VI**), prior to this project, this facility had a prioritization score greater than 1.0. However, due to cancelled and deleted projects, this facility's prioritization score has since dropped below

1.0. At the time of this evaluation, the facility's prioritization score remains below 1.0. Since this project's prioritization score does not cause the facility to exceed the 1.0 threshold, this project passes on prioritization and no further analysis is required to determine the impact from this project and compliance with the District's Risk Management Policy is expected.

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.

The following conditions will be placed on the permit to ensure that the steam generator operates in a manner assumed by the Health risk ananlysis:

- The equipment shall always operate at least 1000 feet away from the closest receptor.
- The equipment shall always operate at least 1000 feet away from the facility's fenceline.

Rule 4201 Particulate Matter Concentration

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

F-Factor for NG: 8,578 dscf/MMBtu at 60 °F
PM10 Emission Factor: 0.0076 lb-PM10/MMBtu
Percentage of PM as PM10 in Exhaust: 100%
Exhaust Oxygen (O_2) Concentration: 3%
Excess Air Correction to F Factor = 20.9/(20.9 - 3) = 1.17

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

$$GL = 0.0053\ grain/dscf < 0.1\ grain/dscf$$

Therefore, compliance with District Rule 4201 requirements is expected. Additionally, particulate matter emissions from the steam generator is already limited by Rule 2201 to a value less than or equal to the rule limit of 0.1 grain per cubic foot of gas at dry standard conditions. Therefore the following condition, previously discussed, will ensure compliance with this rule:

- Emissions from the unit, except during start up, shut down, or refractory curing, shall not exceed any of the following limits: 7 ppmvd NOx @ 3% O2 or 0.008 lb-NOx/MMBtu,

0.00285 lb-SOx/MMBtu, 0.0076 lb-PM10/MMBtu, 100 ppmvd CO @ 3% O2 or 0.074 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4201, 4305, 4306, and 4320] N

Rule 4301 Fuel Burning Equipment

This rule specifies maximum emission rates in lb/hr for SO_2, NO_2, and combustion contaminants (defined as total PM in Rule 1020). This rule also limits combustion contaminants to ≤ 0.1 gr/scf. According to AP 42 (Table 1.4-2, footnote c), all PM emissions from natural gas combustion are less than 1 μm in diameter.

District Rule 4301 Limits (lb/hr)			
Pollutant	**NO_2**	**Total PM**	**SO_2**
S-1624-215-0	022	021	0.39
Rule Limit (lb/hr)	140	10	200

The above table indicates compliance with the maximum lb/hr emissions in this rule; therefore, the following condition, previously discussed, will ensure compliance with this rule:

- Emissions from the unit, except during start up, shut down, or refractory curing, shall not exceed any of the following limits: 7 ppmvd NOx @ 3% O2 or 0.008 lb-NOx/MMBtu, 0.0143 lb-SOx/MMBtu, 0.0076 lb-PM10/MMBtu, 100 ppmvd CO @ 3% O2 or 0.074 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, and 4320] N

- Only PUC quality natural gas, field gas, liquefied petroleum gas (LPG), or TEOR gas shall be combusted in this unit. [District Rule 2201] N

Rule 4304 Equipment Tuning Procedure for Boilers, Steam Generators and Process Heaters

This rule provides equipment tuning procedures for boilers, steam generators and process heaters to control visible emissions and emissions of both nitrogen oxides (NOx) and carbon monoxide (CO).

This unit follows District approved Alternate Monitoring scheme A, where the applicable emission limits are periodically monitored for compliance with Rule 4320 and is not required to perform tuning in accordance with the procedures of this Rule.

Rule 4305 Boilers, Steam Generators and Process Heaters – Phase II

This unit is natural gas-fired with a maximum heat input of 85 MMBtu/hr. Pursuant to Section 2.0 of District Rule 4305, the unit is subject to District Rule 4305, *Boilers, Steam Generators and Process Heaters – Phase 2.*

In addition, the unit is also subject to District Rule 4306, *Boilers, Steam Generators and Process Heaters – Phase 3.*

Since the emissions limits of District Rule 4306 and all other requirements are equivalent or more stringent than District Rule 4305 requirements, compliance with District Rule 4306 requirements will satisfy the requirements of District Rule 4305.

Rule 4306 Boilers, Steam Generators and Process Heaters – Phase III

This unit is natural gas-fired with a maximum heat input of 85 MMBtu/hr. Pursuant to Section 2.0 of District Rule 4306, the unit is subject to District Rule 4306.

In addition, the unit is also subject to *District Rule 4320, Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters Greater than 5 MMBtu/hr.*

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

This unit 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.

This unit has a maximum heat input of 27.5 MMBtu/hr; therefore, the applicable emission limit category Section 5.2, Table 1, Category C.2.a from District Rule 4320 applies as follows:

C. Oilfield Steam Generators			
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&Bhas proposed to comply with Rule 4320 by limiting the burner to 7 ppm-NO_X @ 3% O_2 (or 0.008 lb-NO_X/MMBtu). The following condition will be listed on the ATC to ensure compliance:

- Emissions from the unit, except during start up, shut down, or refractory curing, shall not exceed any of the following limits: 7 ppmvd NOx @ 3% O2 or 0.008 lb-NOx/MMBtu, 0.0143 lb-SOx/MMBtu, 0.0076 lb-PM10/MMBtu, 100 ppmvd CO @ 3% O2 or 0.074 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, 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 will address the particulate matter by limiting the fuel sulfur content to 5 gr-S/100 dscf:

- The sulfur content of fuel combusted shall not exceed 1 grains-S per 100 scf. [District Rule 4320] N

- If the unit is not fired on PUC-regulated natural gas, then fuel sulfur content shall be determined using EPA Method 11 or Method 15. [District Rule 2201 and 4320]

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:

- Duration of start-up or shutdown shall not exceed two hours each per occurrence. During start-up or shutdown, the emissions control system shall be in operation, and emissions shall be minimized insofar as technologically possible. The operator shall maintain daily records of the duration of start-up and shutdown periods. [District Rules 4305, 4306, and 4320]

- Start-up is defined as the period of time during which a unit is brought from a shutdown status to its operating temperature and pressure, including the time required by the unit's emission control system to reach full operation. Shutdown is defined as the period of time during which a unit is taken from an operational to a non-operational status by allowing it to cool down from its operating temperature to ambient temperature as the fuel supply to the unit is completely turned off. [District Rules 4305, 4306, and 4320]

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

- {4063} The permittee shall monitor and record the stack concentration of NO_X, 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 NO_X or CO concentrations corrected to 3% O2, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the

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

- If the unit is not fired on PUC-regulated natural gas, the sulfur content of each fuel source shall be tested weekly except that if compliance with the fuel sulfur content limit has been demonstrated for 8 consecutive weeks for a fuel source, then the testing frequency shall be quarterly. If a test shows noncompliance with the sulfur content requirement, the source must return to weekly testing until eight consecutive weeks show compliance. [District Rule 2201] N

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

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

Section 5.8 Compliance Determination

Section 5.8.1 requires that the operator of any unit shall have the option of complying with either the applicable heat input (lb/MMBtu), emission limits or the concentration (ppmv) emission limits specified in Section 5.2. The emission limits selected to demonstrate

compliance shall be specified in the source test proposal pursuant to Rule 1081 (Source Sampling).

Therefore, the following condition will be listed on the 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 ATCs as follows:

- {2972} All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. Unless otherwise specified in the Permit to Operate, no determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0. For the purposes of permittee-performed alternate monitoring, emissions measurements may be performed at any time after the unit reaches conditions representative of normal operation. [District Rules 4305, 4306 and 4320]

Section 5.8.4 requires that for emissions monitoring pursuant to Sections 5.7.1 and 6.3.1 using a portable NO_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 previously listed permit condition will be on the ATCs as follows:

- {4065} All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the permit-to-operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 4305, 4306 and 4320]

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

- {2983} 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 conditions will be listed on the permit as follows:

- {4346} NOx emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 4305, 4306 and 4320]
- {4347} CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305, 4306 and 4320]

- {4348} Stack gas oxygen (O2) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305, 4306 and 4320]
- If the unit is not fired on PUC-regulated natural gas, then fuel sulfur content shall be determined using EPA Method 11 or Method 15. [District Rule 2201 and 4320] N

Section 6.3, Compliance Testing

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

The following permit conditions will be listed on the ATCs:

- Source testing to measure NOx and CO emissions from this unit while fired on TEOR gas, natural gas, field gas, and LPG shall be conducted at least within 60 days of initial startup and once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306, and 4320] N
- 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, see attached draft permits in Attachment X. Therefore, compliance with District Rule 4320 requirements is expected.

Rule 4401 Steam Enhanced Crude Oil Production Well Vents

The purpose of this rule is to limit the VOC emissions from steam-enhanced crude oil production well vents. This rule is applicable to all steam-enhanced crude oil production wells and any associated vapor collection and control systems. Therefore the following condition will be placed on the permit:

- {304} All wells producing from strata steamed by this unit shall be connected to a District-approved emissions control system, have District-approved closed casing vents or be District-approved uncontrolled cyclic wells. [District Rule 4401] N

Continued compliance is expected.

Rule 4406 Sulfur Compounds From Oil-Field Steam Generators – Kern County

This rule limits sulfur compound emissions to 0.11 lb/MMBtu for existing steam generators located in Kern County. An existing steam generator is defined as one that had an ATC or PTO prior to September 12, 1979. The steam generator was originally permitted on July 1, 1997, therefore, as defined by this rule, the unit is a new steam generator and this rule is not applicable.

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.

In addition, the unit is also subject to District Rule 4320, *Advanced Emission Reduction Options for Boilers, Steam Generators, and Process heaters Greater than 5.0 MMBTU/hr.* Since emissions limits of District Rule 4320 and all other requirements are equivalent or more stringent than District Rule 4801 requirements, compliance with District Rule 4320 requirements will satisfy requirements of District Rule 4801. Therefore the following condition, previously discussed, will ensure compliance with this rule:

- Except for periods of startup and shutdown, emissions from the natural gas-fired unit shall not exceed any of the following limits: 7 ppmvd NOx @ 3% O2 or 0.008 lb-NOx/MMBtu, 0.005 lb-PM10/MMBtu, 35 ppmvd CO @ 3% O2 or 0.026 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4201, 4301, 4305, 4306, 4320, and 4801]

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 or will prepare an environmental review document for the project. Thus the District is the Lead Agency for this project.

The District's engineering evaluation (this document) demonstrates that the project would not result in an increase in project specific greenhouse gas emissions. The District therefore concludes that the project would have a less than cumulatively significant impact on global climate change.

District CEQA Findings

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

The District is a Responsible Agency for the project because of its discretionary approval power over the project via its Permits Rule (Rule 2010) and New Source Review Rule (Rule 2201), (CEQA Guidelines §15381). The District's engineering evaluation of the project (this document) demonstrates that compliance with District rules and permit conditions would reduce Stationary Source emissions from the project to levels below the District's significance thresholds for criteria pollutants. The District has determined that no additional findings are required (CEQA Guidelines §15096(h)).

IX. Recommendation

Compliance with all applicable rules and regulations is expected. Issue Authority to Construct S-1624-215-0 subject to the permit conditions on the attached draft Authority to Construct in Attachment X.

X. Billing Information

Annual Permit Fees			
Permit Number	Fee Schedule	Fee Description	Annual Fee
S-1624-215-0	S-3020-02-H	27.5 MMBt/hr	$1030

Attachments

I: PTOs S-1624-40-2, '-106-0, '-107-0, '-108-0, and S-10807-37-8
II: BACT Guideline 1.2.1
III: Top-Down BACT Analysis
IV: Calculations
V: Emissions Profile
VI: HRA
VII: QNEC
VIII: Compliance Certification
IX: Gas Analysis
X: Draft ATC S-1624-215-0

ATTACHMENT I

PTOs S-1624-40-2, '-106-0, '-107-0, '-108-0, and S-1807-37-8

San Joaquin Valley
Air Pollution Control District

PERMIT UNIT: S-1624-40-2 **EXPIRATION DATE:** 06/30/2013

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

EQUIPMENT DESCRIPTION:
200 BBL FIXED ROOF PETROLEUM STORAGE TANK, MABRY #10

PERMIT UNIT REQUIREMENTS

1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. This tank shall be equipped with a pressure-vacuum (PV) relief valve set to within 10% of the maximum allowable working pressure of the tank, permanently labeled with the operating pressure settings, properly maintained in good operating order in accordance with the manufacturer's instructions, and shall remain in gas-tight condition except when the operating pressure exceeds the valve's set pressure. [District Rule 2201]
3. 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]
4. Crude oil throughput shall not exceed 100 barrels per day based on a monthly average [District Rule 2201]
5. This tank shall only store, place, or hold organic liquid with a true vapor pressure (TVP) of less than 0.5 psia under all storage conditions. [District Rules 2201 and 4623]
6. Permittee shall conduct TVP and API gravity testing of the organic liquid stored in this tank within 60 days of startup and 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 Rules 2201 and 4623]
7. 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]
8. 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]
9. 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]
10. 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]
11. The permittee shall keep accurate records of each organic liquid stored in the tank, including its throughput, storage temperature, TVP, and API gravity. [District Rule 4623]
12. 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]

San Joaquin Valley
Air Pollution Control District

PERMIT UNIT: S-1624-106-0 **EXPIRATION DATE:** 06/30/2013

SECTION: SW04 **TOWNSHIP:** 28S **RANGE:** 27E

EQUIPMENT DESCRIPTION:
100 KW COGENERATION UNIT #1 INCLUDING 154 BHP RICH-BURN NATURAL GAS-FIRED NEW MILLENNIUM MOTIVE POWER MODEL GPS-I IC ENGINE WITH 3-WAY CATALYST AND AIR/FUEL CONTROLLER DRIVING A 100 KW ELECTRICAL GENERATOR (WILCOX LEASE)

PERMIT UNIT REQUIREMENTS

1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. 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]
3. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
4. The permittee shall install and operate a nonresettable fuel meter and a nonresettable elapsed operating time meter. In lieu of installing a nonresettable fuel meter, the owner or operator may use a non-resettable elapsed operating time meter in conjunction with the engine manufacturer's maximum rated fuel consumption to determine annual fuel usage. [District Rule 4702]
5. This engine shall be operated and maintained in proper operating condition as specified on the Inspection and Monitoring (I&M) plan submitted to the District. [District Rule 4702]
6. This engine shall be operated within the ranges that the source testing has shown result in pollution concentrations within the emissions limits as specified on this permit. [District Rule 4702]
7. Total sulfur content of natural gas combusted shall not exceed 1.0 grain/100 scf. [District Rules 2201 and 4801]
8. Emissions from this IC engine shall not exceed any of the following limits: 9 ppmvd NOx @ 15% O2 (equivalent to 0.15 g-NOx/hp-hr), 0.011 g-SOx/hp-hr, 0.02 g-PM10/hp-hr, 56 ppmvd CO @ 15% O2 (equivalent to 0.6 g-CO/hp-hr), or 25 ppmvd VOC @ 15% O2 (equivalent to 0.15 g-VOC/hp-hr). [District Rules 2201, 4701, and 4702]
9. If the engine is not fired on PUC-regulated natural gas, the sulfur content of each fuel source shall be tested weekly except that if compliance with the fuel sulfur content limit has been demonstrated for 8 consecutive weeks for a fuel source, then the testing frequency shall be quarterly. If a test shows noncompliance with the sulfur content requirement, the source must return to weekly testing until eight consecutive weeks show compliance. [District Rule 2201]
10. Source testing to measure natural gas-combustion NOx, CO, and VOC emissions from this unit shall be measured not less than once every 24 months. [District Rules 4701 and 4702]
11. Emissions source testing shall be conducted with the engine operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. [District Rules 4701 and 4702]
12. 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. VOC emissions shall be reported as methane. VOC, NOx, and CO concentrations shall be reported in ppmv, corrected to 15% oxygen. [District Rules 4701 and 4702]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

13. 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]

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

15. The following test methods shall be used: NOx (ppmv) - EPA Method 7E or ARB Method 100; CO (ppmv) - EPA Method 10 or ARB Method 100; VOC (ppmv) - EPA Method 25A or 25B, or ARB Method 100; stack gas oxygen - EPA Method 3 or 3A or ARB Method 100; and natural gas fuel sulfur content - ASTM method D 1072, D 3031, D 4084, D 3246, or double GC for H2S and mercaptans. [District Rules 1081, 2201, 4701, and 4702]

16. The permittee shall monitor and record the stack concentration of NOx, CO, and O2 at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the engine is not in operation, i.e. the engine need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the engine unless monitoring has been performed within the last month. Records must be maintained of the dates of non-operation to validate extended monitoring frequencies. [District Rules 4701 and 4702]

17. If either the NOx or CO concentrations corrected to 15% O2, as measured by the portable analyzer, exceed the allowable emission concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 8 hours after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 8 hours, 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 4701 and 4702]

18. 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 4701 and 4702]

19. The permittee shall maintain records of: (1) the date and time of NOx, CO, and O2 measurements, (2) the O2 concentration in percent and the measured NOx and CO concentrations corrected to 15% 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 4701 and 4702]

20. The permittee shall maintain an engine operating log to demonstrate compliance. The engine operating log shall include, on a monthly basis, the following information: total hours of operation, type and quantity (cubic feet of gas or gallons of liquid) of fuel used, maintenance or modifications performed, monitoring data, compliance source test results, and any other information necessary to demonstrate compliance. [District Rules 4701 and 4702]

21. The permittee shall update the I&M plan for this engine prior to any planned change in operation. The permittee must notify the District no later than seven days after changing the I&M plan and must submit an updated I&M plan to the APCO for approval no later than 14 days after the change. The date and time of the change to the I&M plan shall be recorded in the engine's operating log. For modifications, the revised I&M plan shall be submitted to and approved by the APCO prior to issuance of the Permit to Operate. The permittee may request a change to the I&M plan at any time. [District Rule 4702]

22. 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 4701 and 4702]

San Joaquin Valley
Air Pollution Control District

PERMIT UNIT: S-1624-107-0 **EXPIRATION DATE:** 06/30/2013

SECTION: SW04 **TOWNSHIP:** 28S **RANGE:** 27E

EQUIPMENT DESCRIPTION:
100 KW COGENERATION UNIT #2 INCLUDING 154 BHP RICH-BURN NATURAL GAS-FIRED NEW MILLENNIUM MOTIVE POWER MODEL GPS-I IC ENGINE WITH 3-WAY CATALYST AND AIR/FUEL CONTROLLER DRIVING A 100 KW ELECTRICAL GENERATOR (WILCOX LEASE)

PERMIT UNIT REQUIREMENTS

1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. 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]
3. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
4. The permittee shall install and operate a nonresettable fuel meter and a nonresettable elapsed operating time meter. In lieu of installing a nonresettable fuel meter, the owner or operator may use a non-resettable elapsed operating time meter in conjunction with the engine manufacturer's maximum rated fuel consumption to determine annual fuel usage. [District Rule 4702]
5. This engine shall be operated and maintained in proper operating condition as specified on the Inspection and Monitoring (I&M) plan submitted to the District. [District Rule 4702]
6. This engine shall be operated within the ranges that the source testing has shown result in pollution concentrations within the emissions limits as specified on this permit. [District Rule 4702]
7. Total sulfur content of natural gas combusted shall not exceed 1.0 grain/100 scf. [District Rules 2201 and 4801]
8. Emissions from this IC engine shall not exceed any of the following limits: 9 ppmvd NOx @ 15% O2 (equivalent to 0.15 g-NOx/hp-hr), 0.011 g-SOx/hp-hr, 0.02 g-PM10/hp-hr, 56 ppmvd CO @ 15% O2 (equivalent to 0.6 g-CO/hp-hr), or 25 ppmvd VOC @ 15% O2 (equivalent to 0.15 g-VOC/hp-hr). [District Rules 2201, 4701, and 4702]
9. If the engine is not fired on PUC-regulated natural gas, the sulfur content of each fuel source shall be tested weekly except that if compliance with the fuel sulfur content limit has been demonstrated for 8 consecutive weeks for a fuel source, then the testing frequency shall be quarterly. If a test shows noncompliance with the sulfur content requirement, the source must return to weekly testing until eight consecutive weeks show compliance. [District Rule 2201]
10. Source testing to measure natural gas-combustion NOx, CO, and VOC emissions from this unit shall be measured not less than once every 24 months. [District Rules 4701 and 4702]
11. Emissions source testing shall be conducted with the engine operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. [District Rules 4701 and 4702]
12. 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. VOC emissions shall be reported as methane. VOC, NOx, and CO concentrations shall be reported in ppmv, corrected to 15% oxygen. [District Rules 4701 and 4702]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

13. 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]

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

15. The following test methods shall be used: NOx (ppmv) - EPA Method 7E or ARB Method 100; CO (ppmv) - EPA Method 10 or ARB Method 100; VOC (ppmv) - EPA Method 25A or 25B, or ARB Method 100; stack gas oxygen - EPA Method 3 or 3A or ARB Method 100; and natural gas fuel sulfur content - ASTM method D 1072, D 3031, D 4084, D 3246, or double GC for H2S and mercaptans. [District Rules 1081, 2201, 4701, and 4702]

16. The permittee shall monitor and record the stack concentration of NOx, CO, and O2 at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the engine is not in operation, i.e. the engine need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the engine unless monitoring has been performed within the last month. Records must be maintained of the dates of non-operation to validate extended monitoring frequencies. [District Rules 4701 and 4702]

17. If either the NOx or CO concentrations corrected to 15% O2, as measured by the portable analyzer, exceed the allowable emission concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 8 hours after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 8 hours, 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 4701 and 4702]

18. 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 4701 and 4702]

19. The permittee shall maintain records of: (1) the date and time of NOx, CO, and O2 measurements, (2) the O2 concentration in percent and the measured NOx and CO concentrations corrected to 15% 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 4701 and 4702]

20. The permittee shall maintain an engine operating log to demonstrate compliance. The engine operating log shall include, on a monthly basis, the following information: total hours of operation, type and quantity (cubic feet of gas or gallons of liquid) of fuel used, maintenance or modifications performed, monitoring data, compliance source test results, and any other information necessary to demonstrate compliance. [District Rules 4701 and 4702]

21. The permittee shall update the I&M plan for this engine prior to any planned change in operation. The permittee must notify the District no later than seven days after changing the I&M plan and must submit an updated I&M plan to the APCO for approval no later than 14 days after the change. The date and time of the change to the I&M plan shall be recorded in the engine's operating log. For modifications, the revised I&M plan shall be submitted to and approved by the APCO prior to issuance of the Permit to Operate. The permittee may request a change to the I&M plan at any time. [District Rule 4702]

22. 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 4701 and 4702]

San Joaquin Valley
Air Pollution Control District

PERMIT UNIT: S-1624-108-0 **EXPIRATION DATE:** 06/30/2013

SECTION: SW04 **TOWNSHIP:** 28S **RANGE:** 27E

EQUIPMENT DESCRIPTION:
100 KW COGENERATION UNIT #3 INCLUDING 154 BHP RICH-BURN NATURAL GAS-FIRED NEW MILLENNIUM MOTIVE POWER MODEL GPS-I IC ENGINE WITH 3-WAY CATALYST AND AIR/FUEL CONTROLLER DRIVING A 100 KW ELECTRICAL GENERATOR (WILCOX LEASE)

PERMIT UNIT REQUIREMENTS

1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. 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]
3. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
4. The permittee shall install and operate a nonresettable fuel meter and a nonresettable elapsed operating time meter. In lieu of installing a nonresettable fuel meter, the owner or operator may use a non-resettable elapsed operating time meter in conjunction with the engine manufacturer's maximum rated fuel consumption to determine annual fuel usage. [District Rule 4702]
5. This engine shall be operated and maintained in proper operating condition as specified on the Inspection and Monitoring (I&M) plan submitted to the District. [District Rule 4702]
6. This engine shall be operated within the ranges that the source testing has shown result in pollution concentrations within the emissions limits as specified on this permit. [District Rule 4702]
7. Total sulfur content of natural gas combusted shall not exceed 1.0 grain/100 scf. [District Rules 2201 and 4801]
8. Emissions from this IC engine shall not exceed any of the following limits: 9 ppmvd NOx @ 15% O2 (equivalent to 0.15 g-NOx/hp-hr), 0.011 g-SOx/hp-hr, 0.02 g-PM10/hp-hr, 56 ppmvd CO @ 15% O2 (equivalent to 0.6 g-CO/hp-hr), or 25 ppmvd VOC @ 15% O2 (equivalent to 0.15 g-VOC/hp-hr). [District Rules 2201, 4701, and 4702]
9. If the engine is not fired on PUC-regulated natural gas, the sulfur content of each fuel source shall be tested weekly except that if compliance with the fuel sulfur content limit has been demonstrated for 8 consecutive weeks for a fuel source, then the testing frequency shall be quarterly. If a test shows noncompliance with the sulfur content requirement, the source must return to weekly testing until eight consecutive weeks show compliance. [District Rule 2201]
10. Source testing to measure natural gas-combustion NOx, CO, and VOC emissions from this unit shall be measured not less than once every 24 months. [District Rules 4701 and 4702]
11. Emissions source testing shall be conducted with the engine operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. [District Rules 4701 and 4702]
12. 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. VOC emissions shall be reported as methane. VOC, NOx, and CO concentrations shall be reported in ppmv, corrected to 15% oxygen. [District Rules 4701 and 4702]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

13. 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]

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

15. The following test methods shall be used: NOx (ppmv) - EPA Method 7E or ARB Method 100; CO (ppmv) - EPA Method 10 or ARB Method 100; VOC (ppmv) - EPA Method 25A or 25B, or ARB Method 100; stack gas oxygen - EPA Method 3 or 3A or ARB Method 100; and natural gas fuel sulfur content - ASTM method D 1072, D 3031, D 4084, D 3246, or double GC for H2S and mercaptans. [District Rules 1081, 2201, 4701, and 4702]

16. The permittee shall monitor and record the stack concentration of NOx, CO, and O2 at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the engine is not in operation, i.e. the engine need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the engine unless monitoring has been performed within the last month. Records must be maintained of the dates of non-operation to validate extended monitoring frequencies. [District Rules 4701 and 4702]

17. If either the NOx or CO concentrations corrected to 15% O2, as measured by the portable analyzer, exceed the allowable emission concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 8 hours after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 8 hours, 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 4701 and 4702]

18. 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 4701 and 4702]

19. The permittee shall maintain records of: (1) the date and time of NOx, CO, and O2 measurements, (2) the O2 concentration in percent and the measured NOx and CO concentrations corrected to 15% 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 4701 and 4702]

20. The permittee shall maintain an engine operating log to demonstrate compliance. The engine operating log shall include, on a monthly basis, the following information: total hours of operation, type and quantity (cubic feet of gas or gallons of liquid) of fuel used, maintenance or modifications performed, monitoring data, compliance source test results, and any other information necessary to demonstrate compliance. [District Rules 4701 and 4702]

21. The permittee shall update the I&M plan for this engine prior to any planned change in operation. The permittee must notify the District no later than seven days after changing the I&M plan and must submit an updated I&M plan to the APCO for approval no later than 14 days after the change. The date and time of the change to the I&M plan shall be recorded in the engine's operating log. For modifications, the revised I&M plan shall be submitted to and approved by the APCO prior to issuance of the Permit to Operate. The permittee may request a change to the I&M plan at any time. [District Rule 4702]

22. 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 4701 and 4702]

San Joaquin Valley
Air Pollution Control District

PERMIT UNIT: S-1807-37-8 **EXPIRATION DATE:** 05/31/2012

EQUIPMENT DESCRIPTION:
27.5 MMBTU/HR GAS-FIRED STEAM GENERATOR WITH GIDEON MODEL MGW-30R1 ULTRA LOW NOX BURNER AND PCL DIFFUSER PLATE, OXYGEN SENSOR, AND VARIABLE FGR CONTROL SYSTEM - VARIOUS UNSPECIFIED LOCATIONS WITHIN FACILITY S-1807

PERMIT UNIT REQUIREMENTS

1. Permittee shall notify the District Compliance Division of each location at which the unit is located in excess of 24 hours. Such notification shall be made no later than 48 hours after starting operation at the location. [District Rule 2201]
2. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201]
3. 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]
4. The equipment shall not operate closer than 825 feet to the nearest offsite receptor. [District Rule 4102]
5. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
6. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
7. All wells producing from strata steamed by this unit shall be connected to a District-approved emissions control system, have District-approved closed casing vents or be District-approved uncontrolled cyclic wells. [District Rule 4401]
8. Only PUC quality natural gas, field gas, liquefied petroleum gas (LPG), or TEOR gas shall be combusted in this unit. [District Rule 2201]
9. If the unit is fired on PUC-regulated natural gas, then the permittee shall maintain on file copies of all natural gas bills or fuel throughput records for a period of five years. [District Rule 2201]
10. If the unit is not fired on PUC-regulated natural gas, the sulfur content of each fuel source shall be tested weekly except that if compliance with the fuel sulfur content limit has been demonstrated for 8 consecutive weeks for a fuel source, then the testing frequency shall be quarterly. If a test shows noncompliance with the sulfur content requirement, the source must return to weekly testing until eight consecutive weeks show compliance. [District Rule 2201]
11. If the unit is not fired on PUC-regulated natural gas and compliance with SOx emission limits is achieved through fuel sulfur content limitations, then the sulfur content of the gaseous fuel being fired in the unit shall be determined using ASTM D 1072-80, D 3031-81, D 4084-82, D 3246-81 or grab sample analysis by GC-FPD/TCD performed in the laboratory. [District Rule 2201]
12. The sulfur content of fuel combusted shall not exceed 5 grains-S per 100 scf. [District Rule 4320]
13. Emissions from the unit, except during start up, shut down, or refractory curing, shall not exceed any of the following limits: 7 ppmvd NOx @ 3% O2 or 0.008 lb-NOx/MMBtu, 0.0143 lb-SOx/MMBtu, 0.0076 lb-PM10/MMBtu, 100 ppmvd CO @ 3% O2 or 0.074 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, and 4320]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

14. Emissions rates shall not exceed any of th following: NOx (as NO2)11.9 lb/day and 2048 lb/year. [District Rule 2201]
15. If continuous operation oxygen analyzer/controller is utilized, excess O2 shall be maintained between 0.5 and 3.0%. If not utilized, excess air shall be maintained at no less than 15%. [District Rule 2201]
16. The permittee shall monitor and record the stack concentration of NOx, CO, and O2 at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305, 4306, and 4320]
17. 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]
18. 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]
19. The permittee shall maintain records of: (1) the date and time of NOx, CO, and O2 measurements, (2) the O2 concentration in percent and the measured NOx and CO concentrations corrected to 3% O2, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306, and 4320]
20. Source testing to measure NOx and CO emissions from this unit while fired on TEOR gas, natural gas, field gas, and LPG shall be conducted at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306, and 4320]
21. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306, and 4320]
22. 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]
23. NOx emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 4305, 4306, and 4320]
24. CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305, 4306, and 4320]
25. Stack gas oxygen (O2) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305, 4306, and 4320]
26. 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]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

27. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4306. [District Rules 4305, 4306, and 4320]
28. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081]
29. The permittee shall notify the District at least seven calendar days prior to the designation of this permit unit as a dormant emissions unit or an active emissions unit. [District Rule 1070]
30. When designated as a dormant emissions unit the fuel supply line shall be physically disconnected from the emissions unit. [District Rules 4306 and 4320]
31. When designated as a dormant emissions unit, the permittee shall not be required to perform source testing or monitoring requirements otherwise required by this permit. [District Rules 4306 and 4320]
32. A source test to demonstrate compliance with the NOx and CO emission limits shall be performed within 60 days of recommencing operation of the dormant emissions unit. [District Rules 4306 and 4320]
33. 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]

ATTACHMENT II

BACT Guideline 1.2.1

Per » B A C T » Bact Guideline.asp?category Level1=1&category Level2=2&category Level3=1&last Update=3 » 11 :

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Best Available Control Technology (BACT) Guideline 1.2.1
Last Update: 3/11/2005

Steam Generator (> or = 5 MMBtu/hr, Oil Field)

Pollutant	Achieved in Practice or in the SIP	Technologically Feasible	Alternate Basic Equipment
CO	50 ppmvd @ 3% O2		
NOx	~~14 ppmvd @ 3% O2~~	~~7 ppmvd @ 3% O2 with SCR 9 ppmvd @ 3% O2~~	SEE RULE 4320
PM10	Natural gas, LPG, waste gas treated to remove 95% by weight of sulfur compounds or treated such that the sulfur content does not exceed 1 gr of sulfur compounds (as S) per 100 scf, or use of a continuously operating SO2 scrubber and either achieving 95% by weight control of sulfur compounds or achieving an emission rate of 30 ppmvd SO2 at stack O2		
SOx	Natural gas, LPG, waste gas treated to remove 95% by weight of sulfur compounds or treated such that the sulfur content does not exceed 1 gr of sulfur compounds (as S) per 100 scf, or use of a continuously operating SO2 scrubber and either achieving 95% by weight control of sulfur compounds or achieving an emission rate of 30 ppmvd SO2 at stack O2		
VOC	Gaseous fuel		

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

This is a Summary Page for this Class of Source. For background information, see Permit Specific BACT Determinations on Details Page.

ATTACHMENT III
TOP-DOWN BACT ANALYSIS

BACT Analysis

Top Down BACT Analysis for NOx Emissions:

Step 1 - Identify All Possible Control Technologies

The District adopted District Rule 4320 on October 16, 2008. The NO_X emission limit requirements in District Rule 4320 are lower than the current BACT limits listed above; therefore a project specific BACT analysis will be performed to determine BACT for this project. District Rule 4320 includes a compliance option that limits oilfield steam generators with heat input ratings less than 20 MMBtu/hr to 9 ppm @ 3% O_2. This emission limit is Achieved in Practice control technology for the BACT analysis. District Rule 4320 also contains an enhanced schedule option that allows applicants additional time to meet the requirements of the rule. The enhanced schedule NO_X emission limit requirement is 5 ppmv @ 3% O_2 for steam generators wit a heat input rating greater than 20 MMBtu/hr. Since this is an enhanced option in the rule, it will be considered the Technologically Feasible control technology for the BACT analysis.

The SJVUAPCD BACT Clearinghouse Guideline 1.2.1 has been rescinded. Therefore a new BACT analysis is required. The following are possible control technologies:

1. 9 ppmvd @ 3% O2 - Achieved in Practice.
2. 5 ppmvd @ 3% O2 with SCR – Technologically Feasible

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. 9 ppmvd @ 3% O2 - Achieved in Practice.
2. 5 ppmvd @ 3% O2 with SCR – Technologically Feasible

Step 4 - Cost Effectiveness Analysis

A cost effective analysis is required for technologically feasible control options that are not proposed. The applicant has proposed 9 ppmvd NOx @ 3% O_2; therefore, a cost effective analysis is required for the 5 ppmvd NOx @ 3% O_2 with Selective Catalytic Reduction option.

Cost Analysis for 5 ppmv NOx @ 3% O2 (from EE for ATC S-1374-17-0) :

Capital Equipment Costs:

District Records (Project S1374, 1111508) show total capital costs for SCR equipment and installation. This cost is $756,000 (U.S. Dollars).

$A = P * [i(i + 1)^n] / (i + 1)^n - 1]$

where: A = annual cost P = Present Value
i = Interest rate (10%) n = Equipment (10 years)

Interest Rate % (i)	10	%
Equipment Life (n)	10	Years
Present Value of Control Equipment (TCI)	$756,000	

Annualized capital (capital recovery) cost, A= 756,000 x 0.1627 = $123,001/yr

Emission Reductions from Industry Standard:

The NOx emissions reductions, from the uncontrolled rate, will be calculated utilizing an industry standard of 0.018 lb/MMBtu or 15 ppmvd NOx @ 3% O_2 (Low-NOx Burner).

Industry Standard NOx Emissions = 27.5 MMBtu/hr x 8760 hr/year x 0.018 lb/MMBtu
Industry Standard NOx Emissions = 4336 lb/year

Controlled NOx emissions are based on 5 ppmvd NOx @ 3% O_2 (Equivalent to 0.0061 lb-NOx/MMBtu).

Controlled NOx emissions = 27.5 MMBtu/hr x 8760 hr/year x 0.0061 lb/MMBtu
Controlled NOx emissions = 1469 lb/year
Reduced NOx Emissions = Industry Standard NOx – Controlled NOx
Reduced NOx Emissions = (4336 lb/year – 1469 lb/year) x 1 ton/2000 lb
Reduced NOx Emissions = 1.43 tons/year

Cost of emission reductions for 5 ppmvd NOx SCR System:

Annualized Cost/ton: ($123,001 /yr) ÷ (1.43 tons/yr) = $86,015/ton
The capital cost of an SCR system exceeds the $24,500/ton threshold for NOx; therefore, SCR is ***not*** cost effective per the District BACT policy. Please note that the above cost is conservative as it does not include operation and maintenance and indirect costs.

Step 5: Select BACT:

As shown in the previous section, the use of an SCR system capable of 5 ppmvd NOx @ 3% O2 is not cost effective. The applicant has proposed the next best control listed in the step 3, 7 ppmvd NOx @ 3% O_2. Therefore, the applicant's proposal meets BACT requirements for NOx emissions.

Top Down BACT Analysis for PM10 Emissions:

Step 1 - Identify all control technologies

1. Natural gas, LPG, waste gas treated to remove 95% by weight of sulfur compounds or treated such that the sulfur content does not exceed 1 gr of sulfur compounds (as S) per 100 scf, or use of a continuously operating SO2 scrubber and either achieving 95% by weight control of sulfur compounds or achieving an emission rate of 30 ppmvd SO2 at stack O2 - achieved in practice

Step 2 - Eliminate Technologically Infeasible Options

The above listed technology is technologically feasible.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

1. Natural gas, LPG, waste gas treated to remove 95% by weight of sulfur compounds or treated such that the sulfur content does not exceed 1 gr of sulfur compounds (as S) per 100 scf, or use of a continuously operating SO2 scrubber and either achieving 95% by weight control of sulfur compounds or achieving an emission rate of 30 ppmvd SO2 at stack O2 - achieved in practice

Step 4 - Cost Effectiveness Analysis

Only one control technology identified and this technology is achieved in practice, therefore, cost effectiveness analysis not necessary.

Step 5 - Select BACT for SOx and PM10

The steam generator will gas with a sulfur content does not exceeding 1 gr of sulfur compounds (as S) per 100 scf. Therefore, BACT is satisfied.

5. BACT Analysis for VOC Emissions:

Volatile organic compounds (VOC) emissions are generated from the incomplete combustion of the fuel.

a. Step 1 - Identify all control technologies

The SJVUAPCD BACT Clearinghouse guideline 1.2.1, 1st quarter 2005, identifies for achieved in practice BACT for VOC emissions from oil field steam generators ≥5 MMBtu/hr as follows:

1) Gaseous fuel

No technologically feasible alternatives or control alternatives identified as alternate basic equipment for this class and category of source are listed.

b. Step 2 - Eliminate technologically infeasible options

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

c. Step 3 - Rank remaining options by control effectiveness

1) Gaseous fuel

d. Step 4 - Cost effectiveness analysis

The only control technology in the ranking list from Step 3 has been achieved in practice. Therefore, per the District's BACT Policy (dated 11/9/99) Section IX.D.2, the cost effectiveness analysis is not required.

e. Step 5 - Select BACT

BACT for VOC emissions from this oil field steam generator is gaseous fuel. The applicant has proposed to install an oil field steam generator fired on gaseous fuel; therefore BACT for PM_{10} emissions is satisfied.

ATTACHMENT IV

Calculations

Detailed SSPE Report

Region	Facility	Unit	Mod	NOx	SOx	PM10	CO	VOC	Number of Outstanding ATCs
S	1624	0	0						0
S	1624	4	1	0	0	0	0	44644	0
S	1624	5	1	0	0	0	0	102785	0
S	1624	6	1	0	0	0	0	102785	0
S	1624	7	1	0	0	0	0	102785	0
S	1624	8	1	0	0	0	0	102785	0
S	1624	9	2	0	0	0	0	29421	0
S	1624	10	1	0	0	0	0	257003	0
S	1624	11	1	0	0	0	0	12868	0
S	1624	12	1	0	0	0	0	25727	0
S	1624	13	8	2650	3854	1590	17827	723	1
S	1624	25	1	4642	516	1289	129	645	0
S	1624	26	1	6055	673	1682	168	841	0
S	1624	27	3	552	90	230	9505	166	0
S	1624	28	1	0	0	0	0	154144	0
S	1624	29	1	0	0	0	0	22372	0
S	1624	30	1	0	0	0	0	12868	0
S	1624	31	1	0	0	0	0	154144	0
S	1624	32	1	0	0	0	0	44644	0
S	1624	33	1	0	0	0	0	154144	0
S	1624	34	1	0	0	0	0	6234	0
S	1624	35	1	0	0	0	0	12868	0
S	1624	36	1	0	0	0	0	51424	0
S	1624	37	1	0	0	0	0	51424	0
S	1624	38	1	0	0	0	0	51424	0
S	1624	39	1	0	0	0	0	51424	0

Notes:

Blank values for a particular permit unit do not necessarily relfect zero emissions. For units with blank values, the PE must still be determined based on physical PE or as limited by permit condition.

For permits that show outstanding ATCs, consult PAS ATC Emission Profile records to determine what the highest PE is for each pollutant.

ATCs for new units (e.g. S-XXXX-X-0) must be added in separately.

ERC's for onsite reductions must be added in separately per Rule 2201 as well.

Region	Facility	Unit	Mod	NOx	SOx	PM10	CO	VOC	Number of Outstanding ATCs
S	1624	40	2	0	0	0	0	1968	0
S	1624	41	1	0	0	0	0	12868	0
S	1624	42	1	0	0	0	0	6234	0
S	1624	43	1	0	0	0	0	12868	0
S	1624	44	1	0	0	0	0	12868	0
S	1624	45	2	0	0	0	0	9613	0
S	1624	46	2	0	0	0	0	19197	0
S	1624	47	2	0	0	0	0	19197	0
S	1624	51	1	0	0	0	0	25727	0
S	1624	52	2	OIL FIELD TANK				19082	0
S	1624	53	3	0	0	0	0	219	0
S	1624	56	1	0	0	0	0	257003	0
S	1624	57	1	0	0	0	0	74503	0
S	1624	58	1	0	0	0	0	12868	0
S	1624	59	1	0	0	0	0	77122	0
S	1624	60	1	0	0	0	0	51424	0
S	1624	61	1	0	0	0	0	51424	0
S	1624	62	1	0	0	0	0	51424	0
S	1624	63	1	0	0	0	0	102785	0
S	1624	64	1	0	0	0	0	51424	0
S	1624	65	1	0	0	0	0	51424	0
S	1624	66	1	0	0	0	0	51424	0
S	1624	67	1	0	0	0	0	51424	0
S	1624	68	1	0	0	0	0	154144	0
S	1624	69	1	0	0	0	0	12868	0
S	1624	70	1	0	0	0	0	51424	0
S	1624	71	1	0	0	0	0	51424	0
S	1624	72	2	OIL FIELD TANK				51424	0
S	1624	74	1	0	0	0	0	38585	0

Notes:

Blank values for a particular permit unit do not necessarily relfect zero emissions. For units with blank values, the PE must still be determined based on physical PE or as limited by permit condition.

For permits that show outstanding ATCs, consult PAS ATC Emission Profile records to determine what the highest PE is for each pollutant.

ATCs for new units (e.g. S-XXXX-X-0) must be added in separately.

ERC's for onsite reductions must be added in separately per Rule 2201 as well.

Region	Facility	Unit	Mod	NOx	SOx	PM10	CO	VOC	Number of Outstanding ATCs	
S	1624	75	1	0	0	0	0	12868	0	
S	1624	76	1	0	0	0	0	51424	0	
S	1624	81	1	0	0	0	0	77122	0	
S	1624	82	1	0	0	0	0	257003	0	
S	1624	83	1	0	0	0	0	6234	0	
S	1624	84	1	0	0	0	0	77122	0	
S	1624	85	1	0	0	0	0	257003	0	
S	1624	86	1	0	0	0	0	25727	0	
S	1624	87	1	0	0	0	0	25727	0	
S	1624	88	1	0	0	0	0	25727	0	
S	1624	89	1	0	0	0	0	25727	0	
S	1624	90	1	0	0	0	0	514239	0	
S	1624	91	1	0	0	0	0	38585	0	
S	1624	92	1	0	0	0	0	514239	0	
S	1624	93	1	0	0	0	0	102785	0	
S	1624	94	1	0	0	0	0	25727	0	
S	1624	95	1	0	0	0	0	77122	0	
S	1624	97	3	0	0	0	0	1643	0	
S	1624	98	0	WELLS					0	
S	1624	100	1	0	0	0	0	219	1	OILFIELD TANK
S	1624	101	0	0	0	0	0	0	1	
S	1624	103	0	OILFIELD TANK					0	
S	1624	104	0	OILFIELD TANK					0	
S	1624	105	0	OILFIELD TANK					0	
S	1624	106	0	438	37	73	1789	438	0	
S	1624	107	0	438	37	73	1789	438	0	
S	1624	108	0	438	37	73	1789	438	0	
S	1624	114	0	0	0	0	0	67	0	
S	1624	115	0	0	0	0	0	2923	0	

Notes:

Blank values for a particular permit unit do not necessarily relfect zero emissions. For units with blank values, the PE must still be determined based on physical PE or as limited by permit condition.

For permits that show outstanding ATCs, consult PAS ATC Emission Profile records to determine what the highest PE is for each pollutant.

ATCs for new units (e.g. S-XXXX-X-0) must be added in separately.

ERC's for onsite reductions must be added in separately per Rule 2201 as well.

Region	Facility	Unit	Mod	NOx	SOx	PM10	CO	VOC	Number of Outstanding ATCs
S	1624	116	0	0	0	0	0	3100	0
S	1624	117	0	0	0	0	0	160	0
S	1624	118	0	0	0	0	0	1464	0
S	1624	119	0	0	0	0	0	180	0
S	1624	120	0	OIL FIELD TANK				0	0
S	1624	121	0	OIL FIELD TANK				1	0
S	1624	122	0	↓	↓	↓	↓	2	0
S	1624	123	0					3	0
S	1624	124	0					0	0
S	1624	126	2	0	0	0	0	47	0
S	1624	127	2	0	0	0	0	47	0
S	1624	128	0	OIL FIELD TANK					0
S	1624	129	0	↓	↓	↓	↓		0
S	1624	130	0						0
S	1624	134	0						0
S	1624	135	0						0
S	1624	136	1	0	0	0	0	15897	0
S	1624	137	0	OIL FIELD TANK					0
S	1624	138	0	↓	↓	↓	↓		0
S	1624	139	0						0
S	1624	140	0	0	0	0	0	296	0
S	1624	141	0	OIL FIELD TANK					0
S	1624	142	0	↓	↓	↓	↓		0
S	1624	143	0						0
S	1624	145	0						0
S	1624	146	0						0
S	1624	147	0						0
S	1624	148	0						0
S	1624	149	2	552	90	230	9505	166	0

Notes:

Blank values for a particular permit unit do not necessarily relfect zero emissions. For units with blank values, the PE must still be determined based on physical PE or as limited by permit condition.

For permits that show outstanding ATCs, consult PAS ATC Emission Profile records to determine what the highest PE is for each pollutant.

ATCs for new units (e.g. S-XXXX-X-0) must be added in separately.

ERC's for onsite reductions must be added In separately per Rule 2201 as well.

Region	Facility	Unit	Mod	NOx	SOx	PM10	CO	VOC	Number of Outstanding ATCs
S	1624	150	0	OIL FIELD TANK					0
S	1624	151	0						0
S	1624	152	0						0
S	1624	153	0						0
S	1624	154	0						0
S	1624	155	0						0
S	1624	156	0						0
S	1624	157	2	0	0	0	0	3431	0
S	1624	158	0	OIL FIELD TANK					0
S	1624	159	0						0
S	1624	160	1	0	0	0	0	158	0
S	1624	161	2	0	0	0	0	365	0
S	1624	162	0	0	0	0	0	249	0
S	1624	163	1	0	0	0	0	168	0
S	1624	164	0	0	0	0	0	6429	0
S	1624	165	0	0	0	0	0	6427	0
S	1624	166	0	0	0	0	0	47	0
S	1624	167	0	0	0	0	0	746	0
S	1624	168	0	0	0	0	0	110	0
S	1624	169	3	0	0	0	0	62	0
S	1624	170	0	0	0	0	0	53	0
S	1624	171	0	0	0	0	0	47	0
S	1624	172	0	0	0	0	0	47	0
S	1624	173	0	OILFIELD TANK					0
S	1624	174	0	2117	402	949	14235	584	1
S	1624	175	0	OIL FIELD TANK					0
S	1624	176	0						0
S	1624	177	0						0
S	1624	178	0	0	0	0	0	179	0

Notes:

Blank values for a particular permit unit do not necessarily relfect zero emissions. For units with blank values, the PE must still be determined based on physical PE or as limited by permit condition.

For permits that show outstanding ATCs, consult PAS ATC Emission Profile records to determine what the highest PE is for each pollutant.

ATCs for new units (e.g. S-XXXX-X-0) must be added in separately.

ERC's for onsite reductions must be added in separately per Rule 2201 as well.

Region	Facility	Unit	Mod	NOx	SOx	PM10	CO	VOC	Number of Outstanding ATCs
S	1624	179	1	143	82	189	3180	57	0
S	1624	180	1	143	82	189	3180	57	0
S	1624	181	1	143	82	189	3180	57	0
S	1624	182	1	143	82	189	3180	57	0
S	1624	183	0	0	0	0	0	47	0
S	1624	184	0	0	0	0	0	47	0
S	1624	186	0	0	0	0	0	53	0
S	1624	187	0	0	0	0	0	2279	0
S	1624	188	0	0	0	0	0	12848	0
S	1624	189	0	OIL FIELD TANK					0
S	1624	190	0	↓	↓	↓	↓		0
S	1624	191	0	↓	↓	↓	↓		0
S	1624	192	0	0	0	0	0	119	0
S	1624	193	0	OIL FIELD TANK					1
S	1624	194	0	↓	↓	↓	↓		1
S	1624	195	0	↓	↓	↓	↓		1
S	1624	196	0	↓	↓	↓	↓		1
S	1624	197	0	↓	↓	↓	↓		1
S	1624	198	0	↓	↓	↓	↓		0
S	1624	199	0	↓	↓	↓	↓		0
S	1624	200	0	↓	↓	↓	↓		0
S	1624	201	0	↓	↓	↓	↓		0
S	1624	202	0	↓	↓	↓	↓		0
S	1624	203	0	↓	↓	↓	↓		0
S	1624	204	0	↓	↓	↓	↓		0
S	1624	205	0	↓	↓	↓	↓		0
S	1624	206	0	↓	↓	↓	↓		0
S	1624	207	0	↓	↓	↓	↓		0
S	1624	208	0	TEOR SYSTEM					0

Notes:

Blank values for a particular permit unit do not necessarily relfect zero emissions. For units with blank values, the PE must still be determined based on physical PE or as limited by permit condition.

For permits that show outstanding ATCs, consult PAS ATC Emission Profile records to determine what the highest PE is for each pollutant.

ATCs for new units (e.g. S-XXXX-X-0) must be added in separately.

ERC's for onsite reductions must be added in separately per Rule 2201 as well.

Region	Facility	Unit	Mod	NOx	SOx	PM10	CO	VOC	Number of Outstanding ATCs
S	1624	209	0	OIL FIELD	TANK				0
S	1624	210	0	0	0	0	0	62	0
	SSPE (lbs)			18454	6064	6945	69456	5110946	

Notes:

Blank values for a particular permit unit do not necessarily relfect zero emissions. For units with blank values, the PE must still be determined based on physical PE or as limited by permit condition.

For permits that show outstanding ATCs, consult PAS ATC Emission Profile records to determine what the highest PE is for each pollutant.

ATCs for new units (e.g. S-XXXX-X-0) must be added in separately.

ERC's for onsite reductions must be added in separately per Rule 2201 as well.

ATTACHMENT V

Emissions Profiles

Permit #: S-1624-215-0	**Last Updated**
Facility: E&B NATURAL RESOURCES MGMT	02/15/2012 DAVIDSOS

Equipment Pre-Baselined: NO

	NOX	SOX	PM10	CO	VOC
Potential to Emit (lb/Yr):	1927.0	3445.0	1831.0	17827.0	1325.0
Daily Emis. Limit (lb/Day)	5.3	9.4	5.0	48.8	3.6
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	482.0	861.0	458.0	4457.0	331.0
Q2:	482.0	861.0	458.0	4457.0	331.0
Q3:	482.0	861.0	458.0	4457.0	331.0
Q4:	482.0	861.0	458.0	4457.0	331.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					
Quarterly Offset Amounts (lb/Qtr)					
Q1:					
Q2:					
Q3:					
Q4:					

ATTACHMENT VI

HRA

San Joaquin Valley Air Pollution Control District
Risk Management Review

To:	Steve Roeder – Permit Services
From:	Yu Vu – Technical Services
Date:	February 1, 2012
Facility Name:	E & B Natural Resources
Location:	Heavy Oil Central at Poso Creek
Application #(s):	S-1624-215-0
Project #:	S-1114353

A. RMR SUMMARY

RMR Summary			
Categories	**25.7 MMBtu/hr NG-Fired Steam Generator (Unit 215-0)**	**Project Totals**	**Facility Totals**
Prioritization Score	0.01	0.01	0.88
Acute Hazard Index	N/A[1]	N/A	0.73
Chronic Hazard Index	N/A[1]	N/A	0.02
Maximum Individual Cancer Risk (10^{-6})	N/A[1]	N/A	2.59
T-BACT Required?	**No**		
Special Permit Conditions?	**No**		

[1]This facility previously had a prioritization score greater than 1.0. However, due to cancelled and deleted projects, this facility's prioritization score has since dropped below 1.0. At the time of this evaluation, the facility's prioritization score remains below 1.0. Since this project's prioritization score does not cause the facility to exceed the 1.0 threshold, this project passes on prioritization and no further analysis is necessary.

Proposed Permit Conditions

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

Unit # 215-0

No special conditions are required.

B. RMR REPORT

I. Project Description

Technical Services received a request on January 26, 2012, to perform a Risk Management Review and Ambient Air Quality Analysis (AAQA) for a proposed transfer of location for a 27.5 MMBtu/hr steam generator.

II. Analysis

Toxic emissions for this proposed unit were calculated using Ventura County's emission factors for external combustion sources (NG: 10-100 MMBtu/hr). In accordance with the District's *Risk Management Policy for Permitting New and Modified Sources* (APR 1905, March 2, 2001), risks from the proposed unit's toxic emissions were prioritized using the procedure in the 1990 CAPCOA Facility Prioritization Guidelines and incorporated in the District's HEARTs database. The prioritization score for this proposed unit was less than 1.0 (see RMR Summary Table). Therefore, no further analysis was necessary.

The following parameters were used for the review:

Analysis Parameters Unit 215-0			
NG Consumption (MMSCF/yr)	241	**Max Hours per Year**	8760
Closest Receptor (m)	304.8		

Technical Services also performed modeling for criteria pollutants CO, NOx, SOx and PM_{10}, and $PM_{2.5}$. The emission rates used for criteria pollutant modeling were 2.04 lb/hr CO, 0.22 lb/hr NOx, 0.39 lb/hr SOx, and 0.21 lb/hr PM_{10}. The engineer supplied the maximum fuel rate for the steam generator used during the analysis.

The results from the Criteria Pollutant Modeling are as follows:

Criteria Pollutant Modeling Results*

Diesel ICE	1 Hour	3 Hours	8 Hours.	24 Hours	Annual
CO	Pass	X	Pass	X	X
NO_x	Pass[1]	X	X	X	Pass
SO_x	Pass	Pass	X	Pass	Pass
PM_{10}	X	X	X	Pass[2]	Pass[2]
$PM_{2.5}$	X	X	X	Pass[2]	Pass[2]

*Results were taken from the attached PSD spreadsheet.
[1]The project was compared to the 1-hour NO2 National Ambient Air Quality Standard that became effective on April 12, 2010 using the District's approved procedures.
[2]The criteria pollutants are below EPA's level of significance as found in 40 CFR Part 51.165 (b)(2).

III. Conclusion

The prioritization score is less than 1.0. **In accordance with the District's Risk Management Policy, the project is approved without Toxic Best Available Control Technology (T-BACT).**

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

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

IV. Attachments

A. RMR request from the project engineer
B. Additional information from the applicant/project engineer
C. Toxic emissions summary
D. Prioritization score
E. Facility Summary

ATTACHMENT VII

Quarterly Net Emissions Change

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:

Permit S-1624-215-0:

$PE2_{quarterly}$ = $PE2_{annual}$ ÷ 4 quarters/year
= 1927 lb/year ÷ 4 qtr/year
= 482 lb VOC/qtr

$PE1_{quarterly}$ = $PE1_{annual}$ ÷ 4 quarters/year
= 0 lb/year ÷ 4 qtr/year
= 0 lb PM_{10}/qtr

Quarterly VOC NEC [QNEC] S-1624-215-0			
Permit	PE2 (lb/qtr)	PE1 (lb/qtr)	QNEC (lb/qtr)
NOx	482	0	482
SOx	861	0	861
PM10	458	0	458
CO	4457	0	4457
VOC	331	0	331

Quarterly VOC NEC [QNEC] S-1624-40-0			
Permit	PE2 (lb/qtr)	PE1 (lb/qtr)	QNEC (lb/qtr)
NOx	0	0	0
SOx	0	0	0
PM10	0	0	0
CO	0	0	0
VOC	0	492	-492

Quarterly VOC NEC [QNEC] S-1624-106, -107, and -108			
Permit	PE2 (lb/qtr)	PE1 (lb/qtr)	QNEC (lb/qtr)
NOx	0	110	-110
SOx	0	9	-9
PM10	0	18	-18
CO	0	447	-447
VOC	0	110	-110

ATTACHMENT VIII

Compliance Certification

E&B Natural Resources

February 14, 2012

RECEIVED

FEB 14 2012

SJVAPCD
Southern Region

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

Subject: Project Number 114353 – (S-1624) Wilcox Steam Generator Relocation from McKittrick - Compliance Certification

Steve Davidson

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 an 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

Production Superintendent

Title

34740 Merced Avenue • Bakersfield, CA 93308 • (661) 392-7575 • (661)392-7579 Fax

ATTACHMENT IX

Gas Analysis

ZALCO LABORATORIES, INC.
Analytical & Consulting Services

4309 Armour Avenue
Bakersfield, California 93308

(661) 395-0539
FAX (661) 395-3069

E & B Natural Resources Corp.	Project: Master	Work Order No.: 1104342
34740 Merced Ave.	Project #:	Reported: 04/28/2011
Bakersfield, CA 93308	Attention: Greg Youngblood	Received: 04/22/2011 15:10

Lab Sample ID: 1104342-02	Collected By: Jeremiah Johnson
Client Sample ID: Wilcox-Field Gas to the Engines	Date Collected: 4/22/2011 10:30:00A

Analyte	Results	PQL	Units	Flag	Method	Date Prepared	Date Analyzed	Init.
Total Sulfur/Hydrogen Sulfide by ASTM D3246								
Hydrogen sulfide	<1.00	1.00	ppm		ASTM D 3246/M	4/22/11	4/22/11	JAH
Sulfur	<0.06	0.06	gr/100 scf		ASTM D3246	4/22/11	4/22/11	JAH

NSS: Non Sufficient Sample H: Exceeds Analysis Hold Time TTLC: Total Threshold Limit Concentration STLC: Soluble Threshold Limit Concentration TCLP: Toxicity Characteristic Leaching Procedure MCL: Maximum Contaminant Level *: See Case Narrative

ATTACHMENT X

Draft ATC S-1624-215-0

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: S-1624-215-0 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: E&B NATURAL RESOURCES MGMT
MAILING ADDRESS: ATTN: GREG YOUNGBLOOD
1600 NORRIS ROAD
BAKERSFIELD, CA 93308

LOCATION: HEAVY OIL CENTRAL
CA

EQUIPMENT DESCRIPTION:
27.5 MMBTU/HR GAS-FIRED STEAM GENERATOR WITH GIDEON MODEL MGW-30R1 ULTRA LOW NOX BURNER AND PCL DIFFUSER PLATE, OXYGEN SENSOR, AND VARIABLE FGR CONTROL SYSTEM AUTHORIZED TO OPERATE AT VARIOUS UNSPECIFIED LOCATIONS WITHIN THE HEAVY OIL CENTRAL STATIONARY SOURCE, KERN COUNTY

CONDITIONS

1. Permittee shall notify the District Compliance Division of each location at which the unit is located in excess of 24 hours. Such notification shall be made no later than 48 hours after starting operation at the location. [District Rule 2201]
2. {1407} All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201]
3. {15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
4. The equipment shall always operate at least 1000 feet away from the closest receptor. [District Rule 4102]
5. The equipment shall always operate at least 1000 feet away from the facility's fenceline. [District Rule 4102]
6. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
7. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director/APCO

DRAFT

DAVID WARNER, Director of Permit Services
S-1624-215-0 : Mar 2 2012 9:04AM – DAVIDSOS : Joint Inspection NOT Required

8. {304} All wells producing from strata steamed by this unit shall be connected to a District-approved emissions control system, have District-approved closed casing vents or be District-approved uncontrolled cyclic wells. [District Rule 4401]

9. Only PUC quality natural gas, field gas, liquefied petroleum gas (LPG), or TEOR gas shall be combusted in this unit. [District Rule 2201]

10. If the unit is fired on PUC-regulated natural gas, then the permittee shall maintain on file copies of all natural gas bills or fuel throughput records for a period of five years. [District Rule 2201 and 4320]

11. If the unit is not fired on PUC-regulated natural gas, the sulfur content of each fuel source shall be tested weekly except that if compliance with the fuel sulfur content limit has been demonstrated for 8 consecutive weeks for a fuel source, then the testing frequency shall be quarterly. If a test shows noncompliance with the sulfur content requirement, the source must return to weekly testing until eight consecutive weeks show compliance. [District Rule 2201 and 4320]

12. If the unit is not fired on PUC-regulated natural gas, then fuel sulfur content shall be determined using EPA Method 11 or Method 15. [District Rule 2201 and 4320]

13. Emissions from the unit, except during start up, shut down, or refractory curing, shall not exceed any of the following limits: 7 ppmvd NOx @ 3% O2 or 0.008 lb-NOx/MMBtu, 0.0143 lb-SOx/MMBtu, 0.0076 lb-PM10/MMBtu, 100 ppmvd CO @ 3% O2 or 0.074 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4201, 4305, 4306, and 4320]

14. Duration of start-up or shutdown shall not exceed two hours each per occurrence. During start-up or shutdown, the emissions control system shall be in operation, and emissions shall be minimized insofar as technologically possible. The operator shall maintain daily records of the duration of start-up and shutdown periods. [District Rule 4305, 4306, and 4320]

15. Start-up is defined as the period of time during which a unit is brought from a shutdown status to its operating temperature and pressure, including the time required by the unit's emission control system to reach full operation. Shutdown is defined as the period of time during which a unit is taken from an operational to a non-operational status by allowing it to cool down from its operating temperature to ambient temperature as the fuel supply to the unit is completely turned off. [District Rule 4305, 4306, and 4320]

16. {280} If continuous operation oxygen analyzer/controller is utilized, excess O2 shall be maintained between 0.5 and 3.0%. If not utilized, excess air shall be maintained at no less than 15%. [District Rule 2201]

17. The permittee shall monitor and record the stack concentration of NOx, CO, and O2 at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305, 4306, and 4320]

18. 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]

19. 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]

CONDITIONS CONTINUE ON NEXT PAGE

20. The permittee shall maintain records of: (1) the date and time of NOx, CO, and O2 measurements, (2) the O2 concentration in percent and the measured NOx and CO concentrations corrected to 3% O2, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306, and 4320]

21. Source testing to measure NOx and CO emissions from this unit while fired on TEOR gas, natural gas, field gas, and LPG shall be conducted at least within 60 days of initial startup and once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306, and 4320]

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

23. {109} 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]

24. NOx emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 4305, 4306, and 4320]

25. CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305, 4306, and 4320]

26. Stack gas oxygen (O2) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305, 4306, and 4320]

27. The sulfur content of fuel combusted shall not exceed 1 grains-S per 100 scf. [District Rule 4320]

28. 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]

29. {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. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4306. [District Rules 4305 and 4306]

30. {110} The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081]

31. 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]

32. Permits S-1624-40, '-106, '-107, and '-108 shall be surrendered prior to or concurrent with implementation of this ATC. [District Rule 2201]