



NOV - 4 2009

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-1093864**

Dear Mr. Tollstrup:

Enclosed for your review and comment is the District's analysis of Berry Petroleum Company's application for an Authority to Construct for four (4) new 85 MMBtu/hr steam generators and modifications to six (6) steam generators for compliance with Rule 4320, at the heavy oil production stationary source in the Kern County fields.

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. Richard Edgehill of Permit Services at (661) 392-5617.

Sincerely,



David Warner  
Director of Permit Services

DW:RUE/lis

Enclosure

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

---

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

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

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



NOV - 4 2009

John Ludwick  
Berry Petroleum Company  
5201 Truxtun Avenue, Suite 300  
Bakersfield, CA 93309

**Re: Notice of Preliminary Decision - Authority to Construct**  
**Project Number: S-1093864**

Dear Mr. Ludwick:

Enclosed for your review and comment is the District's analysis of Berry Petroleum Company's application for an Authority to Construct for four (4) new 85 MMBtu/hr steam generators and modifications to six (6) steam generators for compliance with Rule 4320, at the heavy oil production stationary source in the Kern County fields.

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. Richard Edgehill of Permit Services at (661) 392-5617.

Sincerely,



David Warner  
Director of Permit Services

DW:RUE/lis

Enclosures

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

---

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

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

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

Bakersfield Californian  
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 Berry Petroleum Company for four (4) new 85 MMBtu/hr steam generators and modifications to six (6) steam generators for compliance with Rule 4320, at the heavy oil production stationary source in the Kern County fields.

The analysis of the regulatory basis for this proposed action, Project #S-1093864, is available for public inspection at 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, 34946 FLYOVER COURT, BAKERSFIELD, CA 93308.**

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

Facility Name: Berry Petroleum Company Date: October 30, 2009  
Mailing Address: 5201 Truxtun Avenue Suite 300 Engineer: Richard Edgehill  
Bakersfield, CA 93309 Lead Engineer: Allan Phillips  
Contact Person: John Ludwick  
Telephone: (661) 616-3807  
Application #: S-1246-292-10, '-293-7, '-294-6, '-311-3, '-314-2, '-318-2, '-329-0 through '-332-0  
Project #: S-1093864  
Complete: July 27, 2009

---

### I. PROPOSAL

Berry Petroleum Company (Berry) is requesting Authorities to Construct (ATC) for four (4) new 85 MMBtu/hr natural gas fired steam generators. Additionally, applicant proposes to modify six (6) steam generators (S-1246-292, '-293, '-294, '-311, '-314, '-318) with enhanced burner controls and management for compliance with the Rule 4320 NOx emissions limit of 7 ppmv @3% O2 NOx. Three of the new steam generators will be authorized to combust natural gas at two locations within Berry's heavy oil western stationary source. The fourth steam generator will be authorized to combust natural/TEOR/tank vapor recovery (TVR) gas at Ethyl D lease only.

The reductions in NOx emissions from units S-1246-292, '-293, '-294, '-311, '-314, '-318 will be used to partially mitigate the increase in NOx emissions associated with installation of the new generators.

Additionally, Berry has requested that DIS#s for units '-292 through '-294 be deleted as they are not accurate due to repairs and maintenance of the convection sections, and Berry's practice has not been to include them on permits.

Please note that the modifications to S-1246-292, '-293, '-294, '-311, '-314, '-318 are proposed solely to comply with District Rule 4320 requirements and are therefore exempt from BACT and offsets according to Sections 4.2.3 and 4.6.8 of Rule 2201.

Installation of the new steam generators triggers BACT, offsets and public notice.

Disposition of Outstanding ATCs

S-1246-292-8: MODIFICATION OF 85 MMBTU/HR C.E. NATCO NATURAL/TEOR GAS-FIRED STEAM GENERATOR WITH A NORTH AMERICAN MODEL LE ULTRA LOW NOX BURNER AND WITH FLUE GAS RECIRCULATION (FGR) AND AN O2 CONTROLLER (#1MNJ-403, DIS# 28637-82) (GEN SITE 1384): AUTHORIZE INCINERATION OF VAPORS ASSOCIATED WITH ATC S-1246-296 - **IMPLEMENTED**

S-1246-293-5: MODIFICATION OF 85 MMBTU/HR C.E. NATCO NATURAL/TEOR GAS-FIRED STEAM GENERATOR (#178, DIS# 28641-82) WITH NORTH AMERICAN, MODEL 4231-G-LE, MAGNAFLAME LOW NOX BURNER AND O2 CONTROLLER (GEN SITE 1824): AUTHORIZE INCINERATION OF VAPORS ASSOCIATED WITH ATC S-1246-296 - **IMPLEMENTED**

S-1246-294-4: MODIFICATION OF 62.5 MMBTU/HR C.E. NATCO NATURAL GAS FIRED STEAM GENERATOR (#179, DIS# 28642-82) WITH O2 CONTROLLER (GEN SITE 1824): REPLACE BURNER WITH NORTH AMERICAN 4231-G-85-LE ULTRA LOW NOX 85.0 MMBTU/HR BURNER AND ADD FGR – **IMPLEMENTED**

S-1246-314-0: 85 MMBTU/HR NATURAL GAS-FIRED STEAM GENERATOR #MNJ-408 WITH A NORTH AMERICAN MAGNA-FLAME LE BURNER, FLUE GAS RECIRCULATION, AND AN O2 CONTROLLER – **IMPLEMENTED**

PTOs S-1246-292-6, '-293-3, '-294-3, '-311-2, and 318-1 and ATCs '-292-8, '-293-5, '-294-4, and '-314-0 are included in **Attachment I**. The base documents for the project are ATCs S-1246-292-8, '-293-5, '-294-4, '-314-0 and PTOs S-1246-311-2 and '-318-1.

Berry has received their Title V Permit. This modification can be classified as a Title V minor modification pursuant to Rule 2520, Section 3.20, and can be processed with a Certificate of Conformity (COC). But the facility has not requested that this project be processed in that manner; therefore, Berry will be required to submit a Title V minor modification application prior to operating under the revised provisions of the ATCs issued with this project.

**II. APPLICABLE RULES**

- District Rule 2201 New and Modified Stationary Source Review Rule (9/21/06)
- District Rule 4001 New Source Performance Standards (4/14/99)
- District Rule 4101 Visible Emissions (2/17/05)
- District Rule 4102 Nuisance (12/17/92)
- District Rule 4201 Particulate Matter Concentration (12/17/92)
- District Rule 4301 Fuel Burning Equipment (12/17/92)

- District Rule 4304 Equipment Tuning Procedure for Boilers, Steam Generators and Process Heaters (10/19/95)
- District Rule 4305 Boilers, Steam Generators and Process Heaters – Phase 2 (8/21/03)
- District Rule 4306 Boilers, Steam Generators and Process Heaters – Phase 3 (3/17/05)
- District Rule 4320 Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters Greater than 5.0 MMBtu/hr (10/16/08)
- District Rule 4351 Boilers, Steam Generators and Process Heaters – Phase 1 (8/21/03)--**not applicable** – facility is located west of Highway 5
- District Rule 4405 Oxides Of Nitrogen Emissions From Existing Steam Generators Used In Thermally Enhanced Oil Recovery -Central And Western Kern County Fields (12/17/92)
- District Rule 4406 Sulfur Compounds From Oil-Field Steam Generators – Kern County (12/17/92)
- District Rule 4801 Sulfur Compounds (12/17/92)
- CH&SC 41700 Health Risk Assessment
- CH&SC 42301.6 School Notice
- Public Resources Code 21000-21177: California Environmental Quality Act (CEQA)
- California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387: CEQA Guidelines

### III. PROJECT LOCATION

The subject steam generators are located at various locations in Berry's Heavy Oil Western Stationary Source. The specific locations are listed in the tables below.

Unit	Section	Township	Range
S-1246-292	Section 3	31S	22E
S-1246-293	NE/SE Section 3, NE/SE/SW Section 2, Section 11 SE Section 24	31S	22E
	NW Section 18	28S	21E
S-1246-294	NE/SE Section 3, NE/SE/SW Section 2, Section 11 SE Section 24	31S	22E
	NW Section 18	28S	21E
S-1246-311	Section 3	31S	22E

S-1246-314	Section 2	31S	22E
S-1246-318	SE Section 3	31S	22E

S-1246-329 through '-331

North Midway Sunset Oilfield	Section	Township	Range
Southwestern	SE Section 2	31 S	22 E
Fairfield A-1	NW Section 11	31 S	22 E

S-1246-332

South Midway Sunset Oilfield	Section	Township	Range
Ethyl D	SE Section 36	12 N	24 W

A location map is included in **Attachment II**.

#### IV. PROCESS DESCRIPTION

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

##### Proposed Modifications

The NOx emissions limit of existing steam generators S-1246-292, '-293, '-294, '-311, '-314, '-318 will be lowered to 7 ppmv @ 3% O<sub>2</sub> for Rule 4320 compliance. Applicant has stated that some minor equipment modifications i.e. tuning, computer upgrade, baffling of air intake, etc may be required. Four new steam generators, S-1246-329-0 through '-332-0, equipped with ultra low NOx burners capable of achieving 7 ppmv NOx @ 3% O<sub>2</sub> and 35 ppmv @3% O<sub>2</sub> CO will also be installed. Three of the steam generators will be authorized to combust natural gas only (1.0 gr S/100scf) at two locations and one generator will be authorized to combust PUC-quality natural/TEOR/TVR gas at one location. For the latter steam generator sulfur removal equipment will be used as necessary to limit the sulfur content of the inlet gas to 2.4 gr S/100scf.

##### Start-up/Shutdown and Shakedown Period Provisions

Berry has requested that startup and shutdown provisions be added to the ATCs. The following conditions are included on the ATCs to address the startup and shutdown emissions:

Duration of start-up and shutdown shall not exceed 2 hours each per occurrence. [District Rules 2201, 4305, 4306, and 4320]

Maximum NOx emissions from the steam generator, including start-up and shutdown, shall not exceed 19.7 lb-NOx/day. [District Rule 2201]

## V. EQUIPMENT LISTING

### Pre-Project Equipment Description:

ATC S-1246-292-8: MODIFICATION OF 85 MMBTU/HR C.E. NATCO NATURAL/TEOR GAS-FIRED STEAM GENERATOR WITH A NORTH AMERICAN MODEL LE ULTRA LOW NOX BURNER AND WITH FLUE GAS RECIRCULATION (FGR) AND AN O2 CONTROLLER (#1MNJ-403, DIS# 28637-82) (GEN SITE 1384): AUTHORIZE INCINERATION OF VAPORS ASSOCIATED WITH ATC S-1246-296

ATC S-1246-293-5: MODIFICATION OF 85 MMBTU/HR C.E. NATCO NATURAL/TEOR GAS-FIRED STEAM GENERATOR (#178, DIS# 28641-82) WITH NORTH AMERICAN, MODEL 4231-G-LE, MAGNAFLAME LOW NOX BURNER AND O2 CONTROLLER (GEN SITE 1824): AUTHORIZE INCINERATION OF VAPORS ASSOCIATED WITH ATC S-1246-296

ATC S-1246-294-4: MODIFICATION OF 85 MMBTU/HR C.E. NATCO NATURAL GAS FIRED STEAM GENERATOR (#179, DIS# 28642-82) WITH O2 CONTROLLER (GEN SITE 1824): REPLACE BURNER WITH NORTH AMERICAN 4231-G-85-LE ULTRA LOW NOX 85.0 MMBTU/HR BURNER AND ADD FGR

PTO S-1246-311-2: 85 MMBTU/HR NATURAL GAS-FIRED STEAM GENERATOR #MNJ-406 WITH A NORTH AMERICAN MAGNA-FLAME LE BURNER, FLUE GAS RECIRCULATION, AND AN O2 CONTROLLER

ATC S-1246-314-0: 85 MMBTU/HR NATURAL GAS-FIRED STEAM GENERATOR #MNJ-408 WITH A NORTH AMERICAN MAGNA-FLAME LE BURNER, FLUE GAS RECIRCULATION, AND AN O2 CONTROLLER

PTO S-1246-318-1: 85 MMBTU/HR NATURAL GAS-FIRED STEAM GENERATOR #MNJ-409 WITH A NORTH AMERICAN MAGNA-FLAME LE BURNER, FLUE GAS RECIRCULATION, AND AN O2 CONTROLLER

### Proposed Modification:

ATCs S-1246-292-10, '-293-7, '-294-6: LOWER NOX EMISSIONS TO 7 PPMV @3% O2 FOR RULE 4320 COMPLIANCE, DELETE DIS # FROM EQUIPMENT DESCRIPTION



ATCs S-1246-292-10, '-293-7,  
'-294-6, '-311-3, '-314-2, '-318-2: LOWER NOX EMISSIONS TO 7 PPMV @3% O2 FOR  
RULE 4320 COMPLIANCE

Post Project Equipment Description:

PTO S-1246-292-10: 85 MMBTU/HR C.E. NATCO NATURAL/TEOR GAS-FIRED  
STEAM GENERATOR (MNJ-403) WITH A NORTH AMERICAN  
ULTRA LOW NOX BURNER, FLUE GAS RECIRCULATION (FGR)  
AND AN O2 CONTROLLER (SEVERINI LEASE)

PTO S-1246-293-7: 85 MMBTU/HR CE NATCO NATURAL/TEOR GAS-FIRED STEAM  
GENERATOR (MNJ-404) WITH A NORTH AMERICAN MODEL  
4231-G-LE MAGNAFLAME ULTRA LOW NOX BURNER, FLUE  
GAS RECIRCULATION (FGR) AND AN O2 CONTROLLER (PAN  
FEE LEASE)

PTO S-1246-294-6: 85 MMBTU/HR NATURAL GAS-FIRED STEAM GENERATOR  
(MNJ-405) WITH A NORTH AMERICAN 4231-G-85-LE ULTRA  
LOW NOX BURNER, FLUE GAS RECIRCULATION (FGR) AND  
AN O2 CONTROLLER (SEVERINI LEASE)

PTO S-1246-311-3: 85 MMBTU/HR NATURAL GAS-FIRED STEAM GENERATOR  
(MNJ-406) WITH A NORTH AMERICAN ULTRA LOW NOX  
BURNER, FLUE GAS RECIRCULATION (FGR) AND AN O2  
CONTROLLER (SOUTHWESTERN LEASE)

PTO S-1246-314-2: 85 MMBTU/HR NATURAL GAS-FIRED STEAM GENERATOR  
(MNJ-408) WITH A NORTH AMERICAN ULTRA LOW NOX  
BURNER, FLUE GAS RECIRCULATION (FGR) AND AN O2  
CONTROLLER (SOUTHWESTERN LEASE)

PTO S-1246-318-2: 85 MMBTU/HR NATURAL GAS-FIRED STEAM GENERATOR  
(MNJ-409) WITH A NORTH AMERICAN ULTRA LOW NOX  
BURNER, FLUE GAS RECIRCULATION (FGR) AND AN O2  
CONTROLLER (SEVERINI LEASE)

PTOs S-1246-329: 85 MMBTU/HR NATURAL GAS-FIRED STEAM GENERATOR  
(MNJ-413) WITH A NORTH AMERICAN MAGNA FLAME LE  
ULTRA LOW NOX BURNER (OR EQUIVALENT), FLUE GAS  
RECIRCULATION (FGR) AND AN O2 CONTROLLER (VARIOUS  
SPECIFIED LOCATIONS)

PTO S-1246-330: 85 MMBTU/HR NATURAL GAS-FIRED STEAM GENERATOR (MNJ-  
414) WITH A NORTH AMERICAN MAGNA FLAME LE ULTRA LOW  
NOX BURNER (OR EQUIVALENT), FLUE GAS RECIRCULATION

(FGR) AND AN O2 CONTROLLER (VARIOUS SPECIFIED LOCATIONS)

PTO S-1246-331: 85 MMBTU/HR NATURAL GAS-FIRED STEAM GENERATOR (MNJ-415) WITH A NORTH AMERICAN MAGNA FLAME LE ULTRA LOW NOX BURNER (OR EQUIVALENT), FLUE GAS RECIRCULATION (FGR) AND AN O2 CONTROLLER (VARIOUS SPECIFIED LOCATIONS)

PTO S-1246-332: 85 MMBTU/HR NATURAL/TEOR/TVR GAS-FIRED STEAM GENERATOR (ED-J430) WITH A NORTH AMERICAN MAGNA FLAME LE ULTRA LOW NOX BURNER (OR EQUIVALENT), FLUE GAS RECIRCULATION (FGR) AND AN O2 CONTROLLER (ETHEL D LEASE)

As per District policy 1035 Flexibility in Equipment Descriptions in ATCs, some flexibility in the final specifications of the equipment is requested and will be allowed as stated in the following ATC conditions:

The permittee shall obtain written District approval for the use of any equivalent equipment not specifically approved by this Authority to Construct. Approval of the equivalent equipment shall be made only after the District's determination that the submitted design and performance of the proposed alternate equipment is equivalent to the specifically authorized equipment. [District Rule 2201] Y

The permittee's request for approval of equivalent equipment shall include the make, model, manufacturer's maximum rating, manufacturer's guaranteed emission rates, equipment drawing(s), and operational characteristics/parameters. [District Rule 2010] Y

Alternate equipment shall be of the same class and category of source as the equipment authorized by the Authority to Construct. [District Rule 2201] Y

No emission factor and no emission shall be greater for the alternate equipment than for the proposed equipment. No changes in the hours of operation, operating rate, throughput, or firing rate may be authorized for any alternate equipment. [District Rule 2201] Y

## VI. EMISSION CONTROL TECHNOLOGY EVALUATION

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

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

environment. The excess air in these stages helps to reduce the flame temperature so that the reaction between the excess oxygen with nitrogen is minimized.

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

Manufacturer's information on the low NO<sub>x</sub> burner is presented in **Attachment III**.

## VII. GENERAL CALCULATIONS

### A. Assumptions

- The maximum operating schedule is 24 hours per day (per applicant)
- Unit S-1246-329 through '-331 are fired solely on PUC quality natural gas and unit S-1247-332 is fired on natural/TEOR/TVR gas.
- Maximum Heat Input: 85.0 MMBtu/hr (per applicant)
- Annual potential to emit is calculated based on 8,760 hours of operation per year
- EPA F-factor for natural gas is 8,578 dscf/MMBtu (40 CFR 60, Appendix B)
- Molar Specific Volume of a gas @ 60 °F is 379.5 ft<sup>3</sup>/lb-mol
- Natural Gas Heating Value: 1,000 Btu/scf (District Practice)
- Daily emissions for units S-1246-292, '-293, and '-294 are base document daily emissions (accounting for slightly higher emissions on startup and shutdown days). Daily emissions on startup and shutdown days for S-1246-229 through '-332 (new steam generators) are as calculated below (see calculations section).

**B. Emission Factors**

**Pre-Project Emission Factors (EF1)**

S-1246-292 and '-293:

Pollutant	Pre-Project Emission Factors (EF1)			Source
NO <sub>x</sub>	10.8 lb-NO <sub>x</sub> /MMscf	0.0108 lb-NO <sub>x</sub> /MMBtu	9 ppmvd NO <sub>x</sub> (@ 3%O <sub>2</sub> )	Current Permit
SO <sub>x</sub> *	5.9 lb SO <sub>2</sub> /day	0.0059 lb SO <sub>2</sub> /MMBtu		Current Permit
PM <sub>10</sub>	7.6 lb- PM <sub>10</sub> /MMscf	0.0076 lb- PM <sub>10</sub> /MMBtu		Current Permit
CO	35 lb-CO/MMscf	0.035 lb-CO/MMBtu	47 ppmv CO @3% O <sub>2</sub>	Current Permit
VOC	5.5 lb-VOC/MMscf	0.0055 lb-VOC/MMBtu	13 ppmv VOC @3% O <sub>2</sub>	Current Permit

\* 2.1 gr/100 scf x lb/7000 gr x scf/0.001 MMBtu x 2 lb SO<sub>x</sub>/lbS = 0.006

S-1246-294:

Pollutant	Pre-Project Emission Factors (EF1)			Source
NO <sub>x</sub>	11.0 lb-NO <sub>x</sub> /MMscf	0.011 lb-NO <sub>x</sub> /MMBtu	9 ppmvd NO <sub>x</sub> (@ 3%O <sub>2</sub> )	Current Permit
SO <sub>x</sub>	2.85 lb SO <sub>2</sub> /day	0.00285 lb SO <sub>2</sub> /MMBtu		Current Permit
PM <sub>10</sub>	7.6 lb- PM <sub>10</sub> /MMscf	0.0076 lb- PM <sub>10</sub> /MMBtu		Current Permit
CO	37 lb-CO/MMscf	0.037 lb-CO/MMBtu	50 ppmv CO @3% O <sub>2</sub>	Current Permit
VOC	5.5 lb-VOC/MMscf	0.0055 lb-VOC/MMBtu	13 ppmv VOC @3% O <sub>2</sub>	Current Permit

PTO S-1246-311, '-314, and '-318

Pollutant	Pre-Project Emission Factors (EF1)			Source
NO <sub>x</sub>	10.8 lb-NO <sub>x</sub> /MMscf	0.0108 lb-NO <sub>x</sub> /MMBtu	9 ppmvd NO <sub>x</sub> (@ 3%O <sub>2</sub> )	Current Permit
SO <sub>x</sub>	2.85 lb SO <sub>2</sub> /day	0.00285 lb SO <sub>2</sub> /MMBtu		Current Permit
PM <sub>10</sub>	7.6 lb- PM <sub>10</sub> /MMscf	0.0076 lb- PM <sub>10</sub> /MMBtu		Current Permit
CO	26 lb-CO/MMscf	0.026 lb-CO/MMBtu	35 ppmv CO @3% O <sub>2</sub>	Current Permit
VOC	5.5 lb-VOC/MMscf	0.0055 lb-VOC/MMBtu	13 ppmv VOC @3% O <sub>2</sub>	Current Permit

**Post-Project Emission Factors (EF2)**

S-1246-292 and '-293:

Pollutant	Post-Project Emission Factors (EF2)			Source
NO <sub>x</sub>	8.0 lb-NO <sub>x</sub> /MMscf	0.008 lb-NO <sub>x</sub> /MMBtu	7 ppmvd NO <sub>x</sub> (@ 3%O <sub>2</sub> )	Rule 4320 limit
SO <sub>x</sub>	5.9 lb SO <sub>2</sub> /day	0.0059 lb SO <sub>2</sub> /MMBtu		Current Permit
PM <sub>10</sub>	7.6 lb-PM <sub>10</sub> /MMscf	0.0076 lb-PM <sub>10</sub> /MMBtu		Current Permit
CO	35 lb-CO/MMscf	0.035 lb-CO/MMBtu	47 ppmv CO @3% O <sub>2</sub>	Current Permit
VOC	5.5 lb-VOC/MMscf	0.0055 lb-VOC/MMBtu	13 ppmv VOC @3% O <sub>2</sub>	Current Permit

S-1246-294:

Pollutant	Post-Project Emission Factors (EF2)			Source
NO <sub>x</sub>	8.0 lb-NO <sub>x</sub> /MMscf	0.008 lb-NO <sub>x</sub> /MMBtu	7 ppmvd NO <sub>x</sub> (@ 3%O <sub>2</sub> )	Rule 4320 limit
SO <sub>x</sub>	2.85 lb SO <sub>2</sub> /day	0.00285 lb SO <sub>2</sub> /MMBtu		Current Permit
PM <sub>10</sub>	7.6 lb-PM <sub>10</sub> /MMscf	0.0076 lb-PM <sub>10</sub> /MMBtu		Current Permit
CO	37 lb-CO/MMscf	0.037 lb-CO/MMBtu	50 ppmv CO @3% O <sub>2</sub>	Current Permit
VOC	5.5 lb-VOC/MMscf	0.0055 lb-VOC/MMBtu	13 ppmv VOC @3% O <sub>2</sub>	Current Permit

PTO S-1246-311, '-314, and '-318

Pollutant	Post-Project Emission Factors (EF2)			Source
NO <sub>x</sub>	8.0 lb-NO <sub>x</sub> /MMscf	0.008 lb-NO <sub>x</sub> /MMBtu	7 ppmvd NO <sub>x</sub> (@ 3%O <sub>2</sub> )	Rule 4320 limit
SO <sub>x</sub>	2.85 lb SO <sub>2</sub> /day	0.00285 lb SO <sub>2</sub> /MMBtu		Current Permit
PM <sub>10</sub>	7.6 lb-PM <sub>10</sub> /MMscf	0.0076 lb-PM <sub>10</sub> /MMBtu		Current Permit
CO	26 lb-CO/MMscf	0.026 lb-CO/MMBtu	35 ppmv CO @3% O <sub>2</sub>	Current Permit
VOC	5.5 lb-VOC/MMscf	0.0055 lb-VOC/MMBtu	13 ppmv VOC @3% O <sub>2</sub>	Current Permit

S-1246-329 through '-331

Pollutant	Post-Project Emission Factors (EF2)		Source
NO <sub>x</sub>	0.008 lb-NO <sub>x</sub> /MMBtu	7 ppmvd NO <sub>x</sub> (@ 3%O <sub>2</sub> )	Manufacturer
SO <sub>x</sub>	0.00285 lb-SO <sub>x</sub> /MMBtu		District Policy APR 1720
PM <sub>10</sub>	0.0076 lb-PM <sub>10</sub> /MMBtu		AP-42 (07/98) Table 1.4-2
CO	0.026 lb-CO/MMBtu	35 ppmvd CO (@ 3%O <sub>2</sub> )	Manufacturer
VOC	0.0055 lb-VOC/MMBtu		AP-42 (07/98) Table 1.4-2

S-1246-332

Pollutant	Post-Project Emission Factors (EF2)		Source
NO <sub>x</sub>	0.008 lb-NO <sub>x</sub> /MMBtu	7 ppmvd NO <sub>x</sub> (@ 3%O <sub>2</sub> )	Per Manufacturer
SO <sub>x</sub>	0.0067 lb-SO <sub>x</sub> /MMBtu		Proposed
PM <sub>10</sub>	0.0076 lb-PM <sub>10</sub> /MMBtu		AP-42 (07/98) Table 1.4-2
CO	0.026 lb-CO/MMBtu	35 ppmvd CO (@ 3%O <sub>2</sub> )	Per Manufacturer
VOC	0.0055 lb-VOC/MMBtu		AP-42 (07/98) Table 1.4-2

S-1246-292, '-293, '-294, '-311, '-314, and '-329 through '-332  
Startup/Shutdown (2 hr per occurrence)

Emission Factors			
Pollutant	Emission Factors		Source
NO <sub>x</sub>	0.018 lb-NO <sub>x</sub> /MMBtu <sup>(1)</sup>	15 ppmv NO <sub>x</sub> (@ 3%O <sub>2</sub> )	Applicant Proposed

<sup>(1)</sup> 0.018 lb-NO<sub>x</sub>/mmbtu = (15 ppmvd/10<sup>6</sup>)(8,578 dscf/MMBtu)(lb-mol/379.6 ft<sup>3</sup>)(46 lb/lb-mol)[20.9/(20.9-3)]

### C. Calculations

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

S-1246-292-8, '-293-5 (each)

Pollutant	Daily PE1			
	EF1 (lb/MMBtu)	Heat Input (MMBtu/hr)	Operating Schedule (hr/day)	Daily PE1 (lb/day)
NO <sub>x</sub>	0.0110	85	24	22.0
SO <sub>x</sub>	0.00590	85	24	12.0
PM <sub>10</sub>	0.0076	85	24	15.5
CO	0.035	85	24	71.4
VOC	0.0055	85	24	11.2

Pollutant	Annual PE1			
	EF1 (lb/MMBtu)	Heat Input (MMBtu/hr)	Operating Schedule (hr/year)	Annual PE1 (lb/year)
NO <sub>x</sub>	0.011	85	8,760	8,042
SO <sub>x</sub>	0.00590	85	8,760	4,393
PM <sub>10</sub>	0.0076	85	8,760	5,659
CO	0.035	85	8,760	26,061
VOC	0.0055	85	8,760	4,095

S-1246-294-4

Pollutant	Daily PE1			
	EF1 (lb/MMBtu)	Heat Input (MMBtu/hr)	Operating Schedule (hr/day)	Daily PE1 (lb/day)
<b>NO<sub>x</sub></b>	0.0110	85	24	22.4
<b>SO<sub>x</sub></b>	0.00285	85	24	5.8
<b>PM<sub>10</sub></b>	0.0076	85	24	15.5
<b>CO</b>	0.037	85	24	75.4
<b>VOC</b>	0.0055	85	24	11.2

Pollutant	Annual PE1			
	EF1 (lb/MMBtu)	Heat Input (MMBtu/hr)	Operating Schedule (hr/year)	Annual PE1 (lb/year)
<b>NO<sub>x</sub></b>	0.011	85	8,760	8,191
<b>SO<sub>x</sub></b>	0.00285	85	8,760	2,122
<b>PM<sub>10</sub></b>	0.0076	85	8,760	5,659
<b>CO</b>	0.037	85	8,760	27,550
<b>VOC</b>	0.0055	85	8,760	4,095

Base document DELs (startup/shutdown)

NO<sub>x</sub>: 0.018 lb/MMBtu x 85 MMBtu/hr x 24 hr/day = 36.7 lb/day

CO: 0.037 lb/MMBtu x 85 MMBtu/hr x 24 hr/day = 75.5 lb/day\*



S-1246-311-3, '-314-2, and '-318-2 (each)\*

Pollutant	Daily PE1			
	EF1 (lb/MMBtu)	Heat Input (MMBtu/hr)	Operating Schedule (hr/day)	Daily PE1 (lb/day)
<b>NO<sub>x</sub></b>	0.0110	85	24	22.0
<b>SO<sub>x</sub></b>	0.00285	85	24	5.8
<b>PM<sub>10</sub></b>	0.0076	85	24	15.5
<b>CO</b>	0.026	85	24	53.0
<b>VOC</b>	0.0055	85	24	11.2

Pollutant	Annual PE1			
	EF1 (lb/MMBtu)	Heat Input (MMBtu/hr)	Operating Schedule (hr/year)	Annual PE1 (lb/year)
<b>NO<sub>x</sub></b>	0.011	85	8,760	8,042
<b>SO<sub>x</sub></b>	0.00285	85	8,760	2,122
<b>PM<sub>10</sub></b>	0.0076	85	8,760	5,659
<b>CO</b>	0.026	85	8,760	19,360
<b>VOC</b>	0.0055	85	8,760	4,095

\*No startup and shutdown emissions are included on the base documents.

S-1246-329 through '-332

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

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

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

S-1246-292-10, '-293-7 (each)

Pollutant	Daily PE2			
	EF2 (lb/MMBtu)	Heat Input (MMBtu/hr)	Operating Schedule (hr/day)	Daily PE2 (lb/day)
NO <sub>x</sub>	0.0080	85	24	16.3
SO <sub>x</sub>	0.00590	85	24	12.0
PM <sub>10</sub>	0.0076	85	24	15.5
CO	0.035	85	24	71.4
VOC	0.0055	85	24	11.2

Pollutant	Annual PE2			
	EF2 (lb/MMBtu)	Heat Input (MMBtu/hr)	Operating Schedule (hr/year)	Annual PE2 (lb/year)
NO <sub>x</sub>	0.008	85	8,760	5,957
SO <sub>x</sub>	0.00590	85	8,760	4,393
PM <sub>10</sub>	0.0076	85	8,760	5,659
CO	0.035	85	8,760	26,061
VOC	0.0055	85	8,760	4,095

S-1246-294-6

Pollutant	Daily PE2			
	EF2 (lb/MMBtu)	Heat Input (MMBtu/hr)	Operating Schedule (hr/day)	Daily PE2 (lb/day)
NO <sub>x</sub>	0.0080	85	24	16.3
SO <sub>x</sub>	0.00285	85	24	5.8
PM <sub>10</sub>	0.0076	85	24	15.5
CO	0.037	85	24	75.5
VOC	0.0055	85	24	11.2

Pollutant	Annual PE2			
	EF2 (lb/MMBtu)	Heat Input (MMBtu/hr)	Operating Schedule (hr/year)	Annual PE2 (lb/year)
NO <sub>x</sub>	0.008	85	8,760	5,957
SO <sub>x</sub>	0.00285	85	8,760	2,122
PM <sub>10</sub>	0.0076	85	8,760	5,659
CO	0.037	85	8,760	27,550
VOC	0.0055	85	8,760	4,095

S-1246-311-3, '-314-2, and '-318-2 (each)

Pollutant	Daily PE2			
	EF2 (lb/MMBtu)	Heat Input (MMBtu/hr)	Operating Schedule (hr/day)	Daily PE2 (lb/day)
NO <sub>x</sub>	0.0080	85	24	16.3
SO <sub>x</sub>	0.00285	85	24	5.8
PM <sub>10</sub>	0.0076	85	24	15.5
CO	0.026	85	24	53.0
VOC	0.0055	85	24	11.2

Pollutant	Annual PE2			
	EF2 (lb/MMBtu)	Heat Input (MMBtu/hr)	Operating Schedule (hr/year)	Annual PE2 (lb/year)
NO <sub>x</sub>	0.008	85	8,760	5,957
SO <sub>x</sub>	0.00285	85	8,760	2,122
PM <sub>10</sub>	0.0076	85	8,760	5,659
CO	0.026	85	8,760	19,360
VOC	0.0055	85	8,760	4,095

S-1246-329-0 through ' -331-0 (each)

Pollutant	Daily PE2			
	EF2 (lb/MMBtu)	Heat Input (MMBtu/hr)	Operating Schedule (hr/day)	Daily PE2 (lb/day)
NO <sub>x</sub>	0.0080	85	24	see below
SO <sub>x</sub>	0.00285	85	24	5.8
PM <sub>10</sub>	0.0076	85	24	15.5
CO	0.026	85	24	53.0
VOC	0.0055	85	24	11.2

Pollutant	Annual PE2			
	EF2 (lb/MMBtu)	Heat Input (MMBtu/hr)	Operating Schedule (hr/year)	Annual PE2 (lb/year)
NO <sub>x</sub>	0.008	85	8,760	5,957
SO <sub>x</sub>	0.00285	85	8,760	2,122
PM <sub>10</sub>	0.0076	85	8,760	5,659
CO	0.026	85	8,760	19,360
VOC	0.0055	85	8,760	4,095

Startup/Shutdown

NO<sub>x</sub>:  $0.018 \text{ lb/MMBtu} \times 85.0 \text{ MMBtu/hr} \times 4 \text{ hr/day} + 0.008 \times 85.0 \text{ MMBtu/hr} \times 20 \text{ hr/day} = 19.7 \text{ lb/day}$

S-1246-332-0

Pollutant	Daily PE2			
	EF2 (lb/MMBtu)	Heat Input (MMBtu/hr)	Operating Schedule (hr/day)	Daily PE2 (lb/day)
NO <sub>x</sub>	0.0080	85	24	see below
SO <sub>x</sub>	0.00670	85	24	13.7
PM <sub>10</sub>	0.0076	85	24	15.5
CO	0.026	85	24	53.0
VOC	0.0055	85	24	11.2

Pollutant	Annual PE2			
	EF2 (lb/MMBtu)	Heat Input (MMBtu/hr)	Operating Schedule (hr/year)	Annual PE2 (lb/year)
NO <sub>x</sub>	0.008	85	8,760	5,957
SO <sub>x</sub>	0.00670	85	8,760	4,989
PM <sub>10</sub>	0.0076	85	8,760	5,659
CO	0.026	85	8,760	19,360
VOC	0.0055	85	8,760	4,095

Startup/Shutdown

NO<sub>x</sub>: 0.018 lb/MMBtu x 85.0 MMBtu/hr x 4 hr/day + 0.008 x 85.0 MMBtu/hr x 20 hr/day = 19.7 lb/day

The emissions profiles are included in **Attachment IV**.

**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 NO<sub>x</sub>, SO<sub>x</sub>, PM<sub>10</sub>, CO, and VOC emissions; therefore, SSPE1 calculations are not necessary.

**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 NO<sub>x</sub>, SO<sub>x</sub>, PM<sub>10</sub>, CO, and VOC emissions; therefore, SSPE2 calculations are not necessary.

## 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 the following 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 NO<sub>x</sub>, SO<sub>x</sub>, PM<sub>10</sub>, CO, and VOC emissions and will remain a Major Source for NO<sub>x</sub>, SO<sub>x</sub>, PM<sub>10</sub>, CO, and VOC.

## 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.

### S-1246-329 through '-332

Since these are new emissions units, BE = PE1 = 0 for all criteria pollutants.

### S-1246-292, '-293, '-294, '-311, '-314, '-318

As stated above, these units are exempt from offsets. However, the reduction in NO<sub>x</sub> emissions will be used to mitigate the increase in NO<sub>x</sub> emissions from the new steam generators. Therefore calculation of Baseline Emissions is required.

Pursuant to Rule 2201, Section 3.12, 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.

#### NOx and CO

Units S-1246-292, '-293, '-294, '-311, '-314, and '-318 have pre-project NOx and CO emissions factors of 9 ppmv NOx @ 3% O2 and 47-50 ppmv CO @ 3% O2, respectively.

#### SOx and PM10

Units S-1246-294, '-311, '-314, '-and '-318 have a sulfur emission limit of 0.00285 lb SO2/MMBtu (1.0 gr S/100scf) and burn natural gas only. Units S-1246-292 and '-293 have a sulfur emission limit of 0.0059 lb SO2/MMBtu (2.0 gr S/100scf) and combusts natural/TEOR gas. However, the inlet gas to S-1246-292 and '-293 is scrubbed to remove > 95% by weight of sulfur compounds as stated in the following conditions:

#### ATC S-1246-292-10\*

6. Sulfur content of TEOR gas combusted shall be reduced by at least 95% by weight prior to introduction into this unit or shall not exceed 1.0 gr S/100scf. [District Rule 2201] Y

\* The condition requiring 95% control of sulfur was erroneously not included on previous permits and is a BACT requirement. BACT was triggered with an increase in emissions from 0.00285 lb SOx/MMBtu to 0.0059 lb SOx/MMBtu in project 1063816 (ATC S-1246-292-6). Applicant has requested the condition be revised to include the underlined words.

#### ATC S-1246-293-7

13. Sulfur content of TEOR gas combusted shall be reduced by at least 95% by weight prior to introduction into this unit or shall not exceed 1.0 gr S/100scf. [District Rule 2201] Y

#### VOC

S-1246-292, '-293, '-294, '-311, '-314, '-318 combust gaseous fuel only

Therefore the existing units S-1246-292, '-293, '-294, '-311, '-314, '-and '-318 meet the following achieved-in-practice requirements of District BACT Guideline 1.2.1 as in effect within the past 5 years:

NO<sub>x</sub>: 14 ppmvd @ 3% O<sub>2</sub>

SO<sub>x</sub>: Natural gas, LPG and 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 SO<sub>2</sub> scrubber and either achieving 95% by weight control of sulfur compounds or achieving an emission rate of 30 ppmvd SO<sub>2</sub> at stack O<sub>2</sub>.

PM<sub>10</sub>: Natural gas, LPG and 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 SO<sub>2</sub> scrubber and either achieving 95% by weight control of sulfur compounds or achieving an emission rate of 30 ppmvd SO<sub>2</sub> at stack O<sub>2</sub>.

CO: 50 ppmvd @ 3% O<sub>2</sub>  
VOC: Gaseous fuel

Baseline Emissions (BE) are equal to the Pre-Project Potential to Emit (PE1) for S-1246-292, '-293, '-294, '-311, '-314, and '-318.

## 7. Major Modification

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."*

As discussed in Section VII.C.5 previously, the facility is a Major Source; however, the project by itself would need to be a significant increase in order to trigger a Major Modification. As seen in Section VII.C.2 and presented in the following table, the modified emissions unit involved with this project have a potential to emit which is greater than Major Modification thresholds. Therefore, the project increase can be a significant and the project can constitute a Major Modification.

Permit Unit	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	VOC
S-1246-292	5957	4393	5659	4095
S-1246-293	5957	4393	5659	4095
S-1246-294	5957	2122	5659	4095
S-1246-311	5957	2122	5659	4095
S-1246-314	5957	2122	5659	4095
S-1246-318	5957	2122	5659	4095
S-1246-329	5957	2122	5659	4095
S-1246-330	5957	2122	5659	4095
S-1246-331	5957	2122	5659	4095
S-1246-332	5957	4989	5659	4095
Total PE2	59,570	28,629	56,590	40,950

Applicant has conceded that the project is a major modification for NO<sub>x</sub> and PM<sub>10</sub> as indicated in the table below.



<b>Major Modification Thresholds (Existing Major Source)</b>			
Pollutant	Project PE (lb/year)	Threshold (lb/year)	Major Modification?
NO <sub>x</sub>	59,570	50,000	Yes
SO <sub>x</sub>	28,629	80,000	No
PM <sub>10</sub>	56,590	30,000	Yes
VOC	40,950	50,000	No

40 CFR Part 51 - Appendix S requirement for PM2.5

On May 8, 2008 EPA finalized regulations to implement NSR program for PM2.5. The new requirements became effective July 15, 2008.. Under the new regulations a major source and “significant emissions rate” for PM2.5 are defined as 100 tons/yr and 10 tons/yr, respectively. However in determining the PM2.5 emissions only the “front half” or filterable (not condensable) fraction is considered. AP-42 states that PM can be assumed to be PM10 with natural gas combustion in boilers. Therefore using the ratio of filterable PM to total PM in AP-42 Table 1.4-2 (3/98), 0.25, the project emissions of PM2.5 are calculated to be

$$0.25 \times 56,590 = 14,148 \text{ lbPM2.5/yr or } \underline{7.1 \text{ ton PM2.5/yr.}}$$

Therefore the project does not represent a “significant emissions rate” of PM2.5 and no further discussion is required.

**8. Federal Major Modification**

District Rule 2201, Section 3.17 states that major modifications are also federal major modifications, unless they qualify for either a “Less-Than-Significant Emissions Increase” exclusion or a “Plantwide Applicability Limit” (PAL) exclusion. 40 CFR 51.165 (a)(2)(ii)(F) states that, for projects that involve new emissions units, the method specified in 40 CFR 51.165 (a)(2)(ii)(D) will be used to test for a significant emissions increase triggering a federal major modification. 40 CFR 51.165 (a)(2)(ii)(D) states that “A significant emissions increase of a regulated NSR pollutant is projected to occur if the sum of the difference between the potential to emit (as defined in 40 CFR 51.165 (a)(1)(iii) of this section) from each new emissions unit following completion of the project and the baseline actual emissions (as defined in paragraph 40 CFR 51.165 (a)(1)(xxxv)(C) of these units before the project equals or exceeds the significant amount for that pollutant.”

Emissions increases are significant if they exceed the significance thresholds specified in Table 3-1 of Rule 2201 below.

<b>Significant Threshold (lb/year)</b>	
<b>Pollutant</b>	<b>Threshold (lb/year)</b>
VOC	50,000
NO <sub>x</sub>	50,000
PM <sub>10</sub>	30,000
SO <sub>x</sub>	80,000

The Net Emissions Increases (NEI) is calculated to determine if this project has significant emission increases. The following quantities are used in the calculation:

BAE = Baseline Actual Emissions. The actual emissions created by the project during the baseline period.

PAE = Projected Actual Emissions. The post-project projected emissions of the units in this project.

BPE = Baseline Potential Emissions. The portion of the unit's emissions following the project that an existing unit could have accommodated during the baseline period (as defined in 40 CFR 51.165 (a)(1)(xxviii)(B)-3), excluding any emissions unrelated to this particular project, including any increased utilization due to product demand growth.

$$\begin{aligned}
 \text{NEI} &= [\text{PAE} - (\text{BPE} - \text{BAE})] - \text{BAE} \\
 &= \text{PAE} - \text{BPE} + \text{BAE} - \text{BAE} \\
 &= \text{PAE} - \text{BPE}
 \end{aligned}$$

Pursuant to Rule 2201 Section 3.17 to determine if a project is a Federal major modification, the calculation procedure in 40 CFR 51.165(a)(2)(ii) shall be used.

S-1246-292, '-293, '-294, '-311, '-414, and '-318

This calculation procedure states that if the sum of the differences between the projected actual emissions and the baseline actual emissions (for existing emission units) or the sum of the potentials to emit (for new emission units) is significant, i.e. greater than the values listed in Rule 2201 Table 3-1, the project is a Federal major modification.

For existing emission units where there is no increase in design capacity the projected actual emissions (PAE) are equal to the emission rate at which the unit is projected to emit in any one year selected by the operator within 5 years after the unit resumes normal operation (10 years for existing units with an increase in design capacity) This projection is made by the operator and must be based on all relevant information, e.g. expected business activity.

For emission units (other than electric utility steam generating units) the baseline actual emissions (BAE) are calculated based on any 24 month period selected by

the operator within the previous 10 year period. These emissions must not include any non-compliant operation

In calculating the emission increase (PAE – BAE), the portion of the emissions after the project that the unit could have actually emitted (during the same period used to determine BAE) that are unrelated to the particular project and emissions due to increase product demand are excluded i.e. BPE – BAE subtracted

For rule compliance projects, the difference between the PAE and the BAE (excluding emissions that the unit could have emitted during the baseline period) for pollutants targeted by the subject rule will be a negative value.

Additionally, it can reasonably be concluded that the difference between the PAE and the BAE (excluding emissions that the unit could have emitted during the baseline period) for non-targeted pollutants will be zero as any increase in actual emissions (after the project) would be due to increases in business activity and not due to the modification itself. Such emission increases are excluded when calculating the emission increase.

For the reasons stated above, the emissions increase for the units being modified for rule compliance is zero for all pollutants.

S-1247-229 through '-332

Units S-1246-229 through '-332 are new units, and baseline actual emissions are equal to zero, and therefore, pursuant to 40 CFR 51.165 (a)(2)(ii)(D), the emissions increases are equal to the post-project potential to emit.

As shown below, total PE2 from these new emissions units do not exceed the Federal Major Modification threshold for NO<sub>x</sub>; therefore this project is not a Federal Major Modification.

Federal Major Modification Significant Threshold			
Pollutant	Project PE (lb/year)	Threshold (lb/year)	Significant increase
NO <sub>x</sub>	23,828	50,000	No
SO <sub>x</sub>	11,355	80,000	No
PM <sub>10</sub>	22,636	30,000	No
VOC	16,380	50,000	No

**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. The QNEC for the new emissions unit was calculated for each pollutant by dividing annual emissions by 4 quarters/year.

S-1246-292, '-293, '-294, '-311, '-314, and '-318

There are no changes to emissions other than NOx. Therefore QNEC = 0 for SOx, CO, PM10, and VOC.

The QNEC for NOx (for each unit) is

S-1246-292, 293, '-311, '-314, '-318, '-329 through '-332  
 $(0.008 \text{ lb/MMBtu} - 0.0108 \text{ lb/MMBtu}) \times 85 \text{ MMBtu/hr} \times 8760 \text{ hr/yr}$   
 $= - 2085 \text{ lb/yr} (-521 \text{ lb/qtr})$

S-1246-294  
 $(0.008 \text{ lb/MMBtu} - 0.011 \text{ lb/MMBtu}) \times 85 \text{ MMBtu/hr} \times 8760 \text{ hr/yr}$   
 $= - 2234 \text{ lb/yr} (-558 \text{ lb/qtr})$

S-1246-229 through '-331

Pollutant	QNEC			
	For each steam generator			
	Annual emissions (lb/year)	divided by	4 quarters/yr =	Quarterly emissions (lb/qtr)
<b>NO<sub>x</sub></b>	5,957	/	4 qtr/year	<b>1489</b>
<b>SO<sub>x</sub></b>	2,122	/	4	<b>531</b>
<b>PM<sub>10</sub></b>	5,659	/	4	<b>1415</b>
<b>CO</b>	19,360	/	4	<b>4840</b>
<b>VOC</b>	4,095	/	4	<b>1024</b>

S-1246-332

Pollutant	QNEC			
	For each steam generator			
	Annual emissions (lb/year)	divided by	4 quarters/yr =	Quarterly emissions (lb/qtr)
<b>NO<sub>x</sub></b>	5,957	/	4 qtr/year	<b>1489</b>
<b>SO<sub>x</sub></b>	4,989	/	4	<b>1247</b>
<b>PM<sub>10</sub></b>	5,659	/	4	<b>1415</b>
<b>CO</b>	19,360	/	4	<b>4840</b>
<b>VOC</b>	4,095	/	4	<b>1024</b>

## 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.

Units S-1246-292 through '-294, '-311, '-314, and '-318

However, Rule 2201 Section 4.2.3 states that BACT shall not be required for the following:

4.2.3 For existing facilities, the installation or modification of an emission control technique performed solely for the purpose of compliance with the requirements of District, State or Federal air pollution control laws, regulations, or orders, as approved by the APCO, shall be exempt from Best Available Control Technology for all air pollutants, provided all of the following conditions are met:

4.2.3.1 There shall be no increase in the physical or operational design of the existing facility, except for those changes to the design needed for the installation or modification of the emission control technique itself;

4.2.3.2 There shall be no increase in the permitted rating or permitted operating schedule of the permitted unit;

4.2.3.3 There shall be no increase in emissions from the stationary source that will cause or contribute to any violation of a National Ambient Air Quality Standard, Prevention of Significant Deterioration increment, or Air Quality Related Value in Class I areas; and

4.2.3.4 The project shall not result in an increase in permitted emissions or potential to emit of more than 25 tons per year of NO<sub>x</sub>, or 25 tons per year of VOC, or 15 tons per year of SO<sub>x</sub>, or 15 tons per year of PM<sub>10</sub>, or 50 tons per year of CO.

Since each of the above-listed criteria are met for units S-1246-292 through '-294, '-311, '-314, and '-318, BACT is not triggered for any pollutant.

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

As seen in Section VII.C.2 of this evaluation, the applicant is proposing to install four new steam generators each with a PE greater than 2 lb/day for NO<sub>x</sub>, SO<sub>x</sub>, PM<sub>10</sub>, CO, and VOC. BACT is triggered for NO<sub>x</sub>, SO<sub>x</sub>, PM<sub>10</sub>, CO and VOC since the PEs are greater than 2 lbs/day, and CO annual emissions are greater than 200,000 lb/yr.

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

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

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

Units S-1246-292 through '-294, '-311, '-314, and '-318 are exempt from BACT; therefore BACT is not triggered for modification purposes.

**d. Major Modification**

As discussed in Section VII.C.7 above, this project does constitute a Major Modification; therefore BACT is triggered.

**2. BACT Guideline**

Please note that BACT Guideline 1.2.1 [Steam Generator ( $\geq$  5 MMBtu/hr, Oilfield)] has been rescinded. The NO<sub>x</sub> emission limit requirement of District Rule 4320 is lower than the Achieved-in-Practice requirement of BACT Guideline 1.2.1 (14 ppmv @ 3% O<sub>2</sub>) ; therefore a project specific BACT analysis will be performed to determine BACT for this project. More details regarding this are provided in **Attachment V**.

### 3. Top-Down BACT Analysis

#### Permit Units S-1246-329 through '332

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

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

- NO<sub>x</sub>: 7 ppmvd @ 3% O<sub>2</sub>
- SO<sub>x</sub>: Natural gas, LPG and 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 SO<sub>2</sub> scrubber and either achieving 95% by weight control of sulfur compounds or achieving an emission rate of 30 ppmvd SO<sub>2</sub> at stack O<sub>2</sub>.
- PM<sub>10</sub>: Natural gas, LPG and 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 SO<sub>2</sub> scrubber and either achieving 95% by weight control of sulfur compounds or achieving an emission rate of 30 ppmvd SO<sub>2</sub> at stack O<sub>2</sub>.
- CO: 50 ppmvd @ 3% O<sub>2</sub>
- VOC: Gaseous fuel

### B. Offsets

#### 1. Offset Applicability

Pursuant to Section 4.5.3, offset requirements shall be triggered on a pollutant by pollutant basis and shall be required if the Post Project Stationary Source Potential to Emit (SSPE2) equals to or exceeds the offset threshold levels in Table 4-1 of Rule 2201.

As discussed above, this facility is a Major Source for NO<sub>x</sub>, SO<sub>x</sub>, PM<sub>10</sub>, CO, and VOC emissions and will remain a Major Source for NO<sub>x</sub>, SO<sub>x</sub>, PM<sub>10</sub>, CO, and VOC; therefore, any increases in NO<sub>x</sub>, SO<sub>x</sub>, PM<sub>10</sub>, CO, and VOC emissions will be required to be offset.

#### 2. Quantity of Offsets Required

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

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

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

Where,

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

BE = Baseline Emissions, (lb/year)

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

DOR = Distance Offset Ratio, determined pursuant to Section 4.8

BE = Pre-project Potential to Emit for:

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

otherwise,

BE = Historic Actual Emissions (HAE)

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

NOx Offset Calculations:

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

**NOx:**

S-1246-292, '-293, '-311, '-314, '-318: (PE2 - BE)

5 x (0.008 - 0.0108) lb NOx/MMBtu x 85 MMBtu/hr x 8760 hr/yr = -10,424 lb NOx/yr

S-1246-294 (PE2 - BE)

1 x (0.008 - 0.011) lb NOx/MMBtu x 85 MMBtu/hr x 8760 hr/yr = -2234 lb NOx/yr

S-1246-329 through '-332 (PE2 - BE)

4 x 0.008 lb NOx/MMBtu x 85 MMBtu/hr x 8760 hr/yr = 23,827 lb NOx/yr

Total = 11,169 lb NOx/yr

The quarterly emissions to be offset are listed below:

Pollutant	1 <sup>st</sup> Quarter	2 <sup>nd</sup> Quarter	3 <sup>rd</sup> Quarter	4 <sup>th</sup> Quarter
NOx	2,792	2,792	2,792	2,793



The ATCs for S-1246-329 through '-332 will each include an offset requirement of  $2,792/4 = \underline{698 \text{ lb NOx/qtr}}$ .

Assuming an offset ratio of 1.3:1, the amount of NOx ERCs that need to be withdrawn is:

$$\begin{aligned} \text{Offsets Required (lb/year)} &= 11,169 \times 1.3 \\ &= 14,520 \text{ lb-NOX/year} \end{aligned}$$

The quarterly ERC required is as follows:

<u>Pollutant</u>	<u>1<sup>st</sup> Quarter</u>	<u>2<sup>nd</sup> Quarter</u>	<u>3<sup>rd</sup> Quarter</u>	<u>4<sup>th</sup> Quarter</u>
NOx	3,630	3,630	3,630	3,630

The applicant has stated that the facility plans to use ERC certificates S-3017-2 and S-3018-2 to offset the increases in NOx emissions associated with this project. The ERC certificates\* have available quarterly NOx credits as follows:

<u>Certificate</u>	<u>1<sup>st</sup> Quarter</u>	<u>2<sup>nd</sup> Quarter</u>	<u>3<sup>rd</sup> Quarter</u>	<u>4<sup>th</sup> Quarter</u>
ERC #S-3017-2	9,102 (3630)	8,903 (3630)	0	8,995 (3630)
ERC #S-3018-2	0	2,077	14,171 (3630)	0
Total	9,102 (3630)	10,980 (3630)	14,171 (3630)	8,995 (3630)

\* quantities in parentheses are reserved in PAS

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

### SOx:

S-1246-292, '-293, '-294, '-311, '-314, '-318: (PE2 = PE1= BE)

S-1246-329 through '-332 (PE2 – BE)

$$\begin{aligned} &(3 \times 0.00285 + 0.0067 \text{ lb SO}_2/\text{MMBtu}) \times 85 \text{ MMBtu/hr} \times 8760 \text{ hr/yr} \\ &= \underline{11,355 \text{ lb SO}_2/\text{yr}} \end{aligned}$$

The quarterly emissions to be offset are listed below:

<u>Pollutant</u>	<u>1<sup>st</sup> Quarter</u>	<u>2<sup>nd</sup> Quarter</u>	<u>3<sup>rd</sup> Quarter</u>	<u>4<sup>th</sup> Quarter</u>
SOx	2,839	2,839	2,839	2,839

The ATCs for S-1246-329 through '-332 will each include an offset requirement of  $2,839/4 = \underline{710 \text{ lb SOx/qtr}}$ .

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

$$\begin{aligned} \text{Offsets Required (lb/year)} &= 11,355 \times 1.5 \\ &= 17,033 \text{ lb-SOX/year} \end{aligned}$$

The quarterly ERC required is as follows:

<u>Pollutant</u>	<u>1<sup>st</sup> Quarter</u>	<u>2<sup>nd</sup> Quarter</u>	<u>3<sup>rd</sup> Quarter</u>	<u>4<sup>th</sup> Quarter</u>
SOx	4,258	4,258	4,258	4,258

The applicant has stated that the facility plans to use ERC certificates N-806-5, N-807-5, S-3024-5, and S-3026-5 to offset the increases in NOx emissions associated with this project. The ERC certificates\* have available quarterly SOx credits as follows:

<u>Certificate</u>	<u>1<sup>st</sup> Quarter</u>	<u>2<sup>nd</sup> Quarter</u>	<u>3<sup>rd</sup> Quarter</u>	<u>4<sup>th</sup> Quarter</u>
ERC #N-806-5	0	0	1178	0
ERC #N-807-5	306 (306)	515 (515)	303 (303)	199 (199)
ERC #S-3024-5	1900 (549)	1900 (599)	1920 (685)	1900 (530)
ERC #S-3026-5	3404 (3403)	3145 (3144)	2093 (2092)	3530 (3529)
Total	5610 (4258)	5560 (4258)	5494 (4258)	5629 (4258)

\* quantities in parentheses are reserved in PAS

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

**PM10:**

S-1246-292, '-293, '-294, '-311, '-314, '-318: (PE2 = PE1 = BE)

S-1246-328 through '-332 (PE2 – BE)

(4 x 0.0076) lb PM10/MMBtu x 85 MMBtu/hr x 8760 hr/yr

= 22,636 lb PM10/yr

The quarterly emissions to be offset are listed below:

<u>Pollutant</u>	<u>1<sup>st</sup> Quarter</u>	<u>2<sup>nd</sup> Quarter</u>	<u>3<sup>rd</sup> Quarter</u>	<u>4<sup>th</sup> Quarter</u>
PM10	5,659	5,659	5,659	5,659

The ATCs for S-1246-329 through '-332 will each include an offset requirement of  $5,659/4 = 1415 \text{ lb PM10/qtr.}$

Assuming an offset ratio of 1.5:1, the amount of PM10 ERCs that need to be withdrawn is:

$$\begin{aligned} \text{Offsets Required (lb/year)} &= 22,636 \times 1.5 \\ &= 33,954 \text{ lb-PM10/year} \end{aligned}$$

The quarterly ERC required is as follows:

<u>Pollutant</u>	<u>1<sup>st</sup> Quarter</u>	<u>2<sup>nd</sup> Quarter</u>	<u>3<sup>rd</sup> Quarter</u>	<u>4<sup>th</sup> Quarter</u>
PM10	8489	8489	8489	8489

The applicant has stated that the facility plans to use ERC certificate S-3025-5 to offset the increases in PM10 emissions associated with this project. PM10 may be offset using SOx at an interpollutant offset ratio of 1.055 tons SOx/ton PM10. Therefore the SOx ERCs\* required are

<u>Pollutant</u>	<u>1<sup>st</sup> Quarter</u>	<u>2<sup>nd</sup> Quarter</u>	<u>3<sup>rd</sup> Quarter</u>	<u>4<sup>th</sup> Quarter</u>
PM10	8956	8956	8956	8956

The ERC certificate S-3192-5 has available quarterly SOx credits as follows:

<u>Certificate</u>	<u>1<sup>st</sup> Quarter</u>	<u>2<sup>nd</sup> Quarter</u>	<u>3<sup>rd</sup> Quarter</u>	<u>4<sup>th</sup> Quarter</u>
ERC #S-3192-5	14,918 (8956)	14,918 (8956)	14,911 (8956)	14,911 (8956)

\* quantities in parentheses are reserved in PAS

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

CO:

S-1246-292, '-293, '-294, '-311, '-314, '-318: (PE2 = PE2 = BE)

S-1246-328 through '-332 (PE2 – BE)

$$(4 \times 0.026) \text{ lb CO/MMBtu} \times 85 \text{ MMBtu/hr} \times 8760 \text{ hr/yr} \\ = \underline{77,438 \text{ lb CO/yr}}$$

Notwithstanding the above, Section 4.6.1 of Rule 2201 states that emissions offsets are not required for increases in carbon monoxide in attainment areas provided the applicant demonstrates to the satisfaction of the APCO that the Ambient Air Quality Standards are not violated in the areas to be affected, and such emissions will be consistent with Reasonable Further Progress, and will not cause or contribute to a violation of Ambient Air Quality Standards. The District performed an Ambient Air Quality Analysis (discussed later) and determined that this project will not result in or contribute to a violation of an Ambient Air Quality Standard for CO (see **Attachment VI**). Therefore, CO offsets are not required for this project.

VOC:

S-1246-292, '-293, '-294, '-311, '-314, '-318: (PE2 = PE1 = BE)

S-1246-329 through '-332 (PE2 – BE)

$$(4 \times 0.0055) \text{ lb VOC/MMBtu} \times 85 \text{ MMBtu/hr} \times 8760 \text{ hr/yr} \\ = \underline{16,381 \text{ lb VOC/yr}}$$

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

<u>Pollutant</u>	<u>1<sup>st</sup> Quarter</u>	<u>2<sup>nd</sup> Quarter</u>	<u>3<sup>rd</sup> Quarter</u>	<u>4<sup>th</sup> Quarter</u>
VOC	4095	4095	4095	4095

The ATCs for S-1246-329 through '-332 will each include an offset requirement of  $4,095/4 = \underline{1024 \text{ lb VOC/qtr}}$ .

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

Offsets Required (lb/year) = 16,381 x 1.5  
= 24,572 lb-VOC/year

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

<u>Pollutant</u>	<u>1<sup>st</sup> Quarter</u>	<u>2<sup>nd</sup> Quarter</u>	<u>3<sup>rd</sup> Quarter</u>	<u>4<sup>th</sup> Quarter</u>
VOC	6,143	6,143	6,143	6,143

The applicant has stated that the facility plans to use ERC certificates C-787-1, C-862-1, C-970-1, N-647-1, N-648-1, N-649-1, N-666-1, N-668-1, N-808-1, N-813-1, N-814-1, S-3030-1, and S-3033-1 to offset the increases in VOC emissions associated with this project. The above certificates\* have available quarterly VOC credits as follows:

<u>Certificate</u>	<u>1<sup>st</sup> Quarter</u>	<u>2<sup>nd</sup> Quarter</u>	<u>3<sup>rd</sup> Quarter</u>	<u>4<sup>th</sup> Quarter</u>
ERC #C-787-1	39 (39)	39 (39)	39 (39)	39 (39)
ERC #C-862-1	258 (258)	113 (113)	156 (156)	153 9153)
ERC #C-970-1	73 (73)	681 (681)	852 (852)	0
ERC #N-647-1	457 (457)	183 (183)	143 (143)	253 (253)
ERC #N-648-1	23 (23)	22 (22)	164 (164)	16 (16)
ERC #N-649-1	0	0	664 (664)	75 (75)
ERC #N-666-1	313 (313)	777 (777)	0	0
ERC #N-668-1	0	6627 (4064)	1919 (1919)	0
ERC #N-808-1	157 (157)	264 (264)	156 (156)	102 9102)
ERC #N-813-1	0	0	278 (278)	0
ERC #N-814-1	0	0	37 (37)	0
ERC #S-3195-1	6360 (4823)	6356	6356 (1735)	6356 (5505)
Total	7680 (6143)	15,002 (6143)	10,764 (6143)	6,994 (6143)

\* quantities in parentheses are reserved in PAS

As seen above, the facility has sufficient credits to fully offset the quarterly NO<sub>x</sub>, SO<sub>x</sub>, PM<sub>10</sub> and VOC emissions increases associated with this project.

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

**S-1246-329 through '-332**

Prior to operating under this Authority to Construct, permittee shall surrender emission reduction credits for the following quantities of emissions: NO<sub>x</sub>: 698 lb/quarter; SO<sub>x</sub>: 710 lb/quarter, PM<sub>10</sub>: 1415 lb/quarter, and VOC: 1024 lb/quarter. Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 9/21/2006). [District Rule 2201] Y

**S-1246-329 through '-332**

ERC Certificate Numbers C-787-1, C-862-1, C-970-1, N-647-1, N-648-1, N-649-1, N-666-1, N-668-1, N-808-1, N-813-1, N-814-1, S-3195-1, S-3017-2, S-3018-2, N-806-5, N-807-5, S-3024-5, S-3026-5, and S-3192-5 (or a certificate split from this certificate) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing

requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct.  
[District Rule 2201] Y

## **C. Public Notification**

### **1. Applicability**

Public noticing is required for:

- a. Any new Major Source, which is a new facility that is also a Major Source,
- b. Major Modifications,
- c. Any new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any one pollutant,
- d. Any project which results in the offset thresholds being surpassed, and/or
- e. Any project with an SSIPE of greater than 20,000 lb/year for any pollutant.

#### **a. New Major Source**

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.

#### **b. Major Modification**

As demonstrated in VII.C.7, this project constitutes a Major Modification for NO<sub>x</sub> and PM<sub>10</sub>; therefore, public noticing for 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.

#### **d. Offset Threshold**

This facility is an existing Major Source for all pollutants, therefore facility emissions are already above the offsets threshold for each pollutant. Public noticing cannot be triggered for *surpassing* the offsets threshold.

#### **e. SSIPE > 20,000 lb/year**

Public notification is required for any permitting action that results in a Stationary Source Increase in Permitted Emissions (SSIPE) of more than 20,000 lb/year of any affected pollutant. According to District policy, the

SSIPE is calculated as the Post Project Stationary Source Potential to Emit (SSPE2) minus the Pre-Project Stationary Source Potential to Emit (SSPE1), i.e. SSIPE = SSPE2 – SSPE1. The values for SSPE2 and SSPE1 are calculated according to Rule 2201, Sections 4.9 and 4.10, respectively.

<b>Stationary Source Increase in Permitted Emissions [SSIPE] – Public Notice</b>					
Pollutant	SSPE2 (lb/year)	SSPE1 (lb/year)	SSIPE (lb/year)	SSIPE Public Notice Threshold	Public Notice Required?
NO <sub>x</sub>	SSPE1+11,169	SSPE1	11,169*	20,000 lb/year	No
SO <sub>x</sub>	SSPE1+11,355	SSPE1	11,355	20,000 lb/year	No
PM <sub>10</sub>	SSPE1+22,636	SSPE1	22,636	20,000 lb/year	Yes
CO	SSPE1+77,440	SSPE1	77,440	20,000 lb/year	Yes
VOC	SSPE1+16,381	SSPE1	16,381	20,000 lb/year	No

\*S-1246-292, '-293, '-294, '-311, '-314, '-318: (PE2 – BE)  
5 x (0.008 - 0.0108) lb NO<sub>x</sub>/MMBtu x 85 MMBtu/hr x 8760 hr/yr = -10,424 lb NO<sub>x</sub>/yr

S-1246-294 (PE2 – BE)  
1 x (0.008 - 0.011) lb NO<sub>x</sub>/MMBtu x 85 MMBtu/hr x 8760 hr/yr = -2234 lb NO<sub>x</sub>/yr

S-1246-328 through '-332 (PE2 – BE)  
4 x 0.008 lb NO<sub>x</sub>/MMBtu x 85 MMBtu/hr x 8760 hr/yr = 23,827 lb NO<sub>x</sub>/yr  
Total = 11,169 lb NO<sub>x</sub>/yr

As demonstrated above, the SSIPE for CO and PM10 were greater than 20,000 lb/year; therefore public noticing for SSIPE purposes is required.

## 2. Public Notice Action

As discussed above, public noticing is required for this project for CO emissions for SSIPE greater than 20,000 lb/year. Therefore, public notice documents will be submitted to the California Air Resources Board (CARB) and a public notice will be published in a local newspaper of general circulation prior to the issuance of the ATC for this equipment.

## D. Daily Emission Limits (DELs)

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 unit is based on the use of natural gas as a fuel, the rate heat input of the steam generator, and the emission factors as shown:

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

**S-1246-292 and '-293**

Sulfur content of gas combusted in steam generator shall not exceed 2.0 gr S/100scf. [District Rule 2201] N

- Except for periods of startup and shutdown, emissions from the natural gas-fired unit shall not exceed any of the following limits: 7 ppmvd NO<sub>x</sub> @ 3% O<sub>2</sub> or 0.008 lb-NO<sub>x</sub>/MMBtu, 0.0076 lb-PM<sub>10</sub>/MMBtu, 47 ppmvd CO @ 3% O<sub>2</sub> or 0.035 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4305, and 4306]

**S-1246-294**

- Except for periods of startup and shutdown, emissions from the natural gas-fired unit shall not exceed any of the following limits: 7 ppmvd NO<sub>x</sub> @ 3% O<sub>2</sub> or 0.008 lb-NO<sub>x</sub>/MMBtu, 0.0076 lb-PM<sub>10</sub>/MMBtu, 50 ppmvd CO @ 3% O<sub>2</sub> or 0.037 lb-CO/MMBtu, 0.00285 lb SO<sub>x</sub>/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4305, and 4306]

**S-1246-311, '-314, and '-318**

- Except for periods of startup and shutdown, emissions from the natural gas-fired unit shall not exceed any of the following limits: 7 ppmvd NO<sub>x</sub> @ 3% O<sub>2</sub> or 0.008 lb-NO<sub>x</sub>/MMBtu, 0.0076 lb-PM<sub>10</sub>/MMBtu, 35 ppmvd CO @ 3% O<sub>2</sub> or 0.026 lb-CO/MMBtu, 0.00285 lb SO<sub>x</sub>/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4305, and 4306]

**S-1246-329 through '-331**

- Except for periods of startup and shutdown, emissions from the natural gas-fired unit shall not exceed any of the following limits: 7 ppmvd NO<sub>x</sub> @ 3% O<sub>2</sub> or 0.008 lb-NO<sub>x</sub>/MMBtu, 0.0076 lb-PM<sub>10</sub>/MMBtu, 35 ppmvd CO @ 3% O<sub>2</sub> or 0.026 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4305, and 4306]
- The unit shall only be fired on PUC-quality natural gas with a maximum sulfur content of 1.0 gr S/100scf. [District Rule 2201] Y

**S-1246-332**

- Except for periods of startup and shutdown, emissions from the natural gas-fired unit shall not exceed any of the following limits: 7 ppmvd NO<sub>x</sub> @ 3% O<sub>2</sub> or 0.008 lb-NO<sub>x</sub>/MMBtu, 0.0076 lb-PM<sub>10</sub>/MMBtu, 35 ppmvd CO @ 3% O<sub>2</sub> or 0.026 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4305, and 4306]
- Sulfur removal equipment shall be installed as necessary to ensure that gaseous fuels combusted in steam generator contain no more than 2.35 gr S/100 scf. [District Rules 2201 and 4320] N

**Startup/shutdown for all Units**

Maximum NO<sub>x</sub> emissions from the steam generator, including start-up and shutdown, shall not exceed 19.7 lb-NO<sub>x</sub>/day. [District Rule 2201] Y

## **E. Compliance Assurance**

### **1. Source Testing**

This unit is subject to District Rule 4305, *Boilers, Steam Generators and Process Heaters, Phase 2*, and District Rule 4306, *Boilers, Steam Generators and Process Heaters, Phase 3*. Source testing requirements, in accordance with District Rules 4305 and 4306, will be discussed in Section VIII, *District Rules 4305 and 4306*, of this evaluation.

### **2. Monitoring**

#### Sulfur Monitoring for Rule 4320 Compliance

The following conditions will be included on the S-1246-332 which is authorized to combust natural/TEOR/TVR gas:

Permittee shall determine sulfur content of combusted gas weekly for eight consecutive weeks. After demonstrating compliance for eight consecutive weeks testing may be conducted on a quarterly basis. Weekly sulfur testing shall resume if quarterly testing does not indicate compliance. Weekly gas analysis shall be performed using Draeger tubes and quarterly analysis using ASTM method D3246 or double GC for H<sub>2</sub>S and mercaptans. First of the weekly gas analyses shall be done using laboratory analysis. [District Rules 1081 and 2201] N

Compliance with fuel sulfur limit(s) can be demonstrated either by monitoring sulfur content at location(s) after all fuel sources are combined prior to incineration, or by monitoring the sulfur content and volume of each fuel source and performing mass balance calculations. Records of monitoring locations, detected sulfur concentrations, and mass balance calculations, if necessary, shall be maintained and kept onsite and made readily available for District inspection upon request. [District Rules 1081 and 2201] N

As required by District Rule 4305, *Boilers, Steam Generators and Process Heaters, Phase 2*, and District Rule 4306, *Boilers, Steam Generators and Process Heaters, Phase 3*, this unit is subject to monitoring requirements. Monitoring requirements, in accordance with District Rules 4305 and 4306, will be discussed in Section VIII, *District Rules 4305 and 4306*, of this evaluation.

### **3. Recordkeeping**

As required by District Rule 4305, *Boilers, Steam Generators and Process Heaters, Phase 2*, and District Rule 4306, *Boilers, Steam Generators and Process Heaters, Phase 3*, this unit is subject to recordkeeping requirements. Recordkeeping requirements, in accordance with District Rules 4305 and 4306, will be discussed in Section VIII, *District Rules 4305 and 4306*, of this evaluation.

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



S-1246-332

Permittee shall maintain records of the sulfur content and the daily quantity of gas and vapor burned in this steam generator. Compliance with the SO<sub>x</sub> emissions limit shall be demonstrated by calculation, using the sulfur content and quantities of gas and vapor burned. [District Rule 2201] Y

- {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, and 4306]

#### 4. Reporting

No reporting is required to demonstrate compliance with Rule 2201.

#### F. Ambient Air Quality Analysis

Section 4.14 of this Rule requires that an ambient air quality analysis (AAQA) 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. Technical Services Division performed modeling for criteria pollutants CO, NO<sub>x</sub>, SO<sub>x</sub> and PM<sub>10</sub>. The results from the Criteria Modeling are as follows:

##### Criteria Pollutant Modeling Results

The results from the Criteria Pollutant Modeling are as follows:

Values are in µg/m<sup>3</sup>

Pollutant	1 Hour	3 Hours	8 Hours	24 Hours	Annual
CO	Pass	X	Pass	X	X
NO <sub>x</sub>	Pass	X	X	X	Pass
SO <sub>x</sub>	Pass	Pass	X	Pass <sup>1</sup>	Pass
PM <sub>10</sub>	X	X	X	Pass <sup>1</sup>	Pass <sup>1</sup>

<sup>1</sup>The criteria pollutants are below EPA's level of significance as found in 40 CFR Part 51.165 (b)(2).

As shown by the AAQA summary sheet the proposed equipment will not cause a violation of an air quality standard for NO<sub>x</sub>, CO, PM<sub>10</sub>, or SO<sub>x</sub>. Refer to **Attachment VI** of this document for the full AAQA report from Technical Services.

#### Rule 2520 Federally Mandated Operating Permits

This facility is subject to this rule and has received their Title V Operating Permit. The proposed modification is a Minor Modification to the Title V Permit pursuant to Section 3.20 of this rule. As discussed above, the facility has not applied for a Certificate of

Conformity (COC); therefore, the facility must apply to modify their Title V permit with a minor modification, prior to operating with the proposed modifications.

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

#### **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).

##### S-1246-292, '-293, '-294, '-311, '-314, '-318

40 CFR Part 60, Subpart A, section 14, defines the meaning of modification to which the standards are applicable. §60.14, paragraph (e)(5) states that the following will not be considered as a modification: *"the addition or use of any system or device whose primary function is the reduction of air pollutants, except when an emission control system is removed or replaced by a system which the Administrator determines to be less environmentally beneficial"*.

S-1246-292, '-293, '-294, '-311, '-314, '-318 are not newly constructed or reconstructed units, nor are they being modified (as defined above). Since the permittee is modifying existing equipment (burner controls and operation) for compliance with District rules and regulations, the requirements of these sections do not apply to these units.

##### S-1246-329 through '-332

The subject steam generators have a rating of 85 MMBtu/hr and are fired on natural gas. Subpart Dc has no standards for gas-fired steam generators. Therefore the subject steam generators are not affected facilities and 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). A condition will be placed on the ATCs to ensure compliance with the opacity limit.

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

#### **Rule 4102 Nuisance**

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

**California Health & Safety Code 41700 – Health Risk Analysis**

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

An HRA is not required for a project with a total facility prioritization score of less than one. According to the Technical Services Memo for this project (**Attachment VI**), the total facility prioritization score including this project was greater than one. However, the acute and chronic indices were below 1.0 in a million and the cancer risk associated with the 4 new stem generators is less than 1.0 in a million. Therefore the project was approved without TBACT.

**Rule 4201 Particulate Matter Concentration**

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

F-Factor for NG: 8,578 dscf/MMBtu at 60 °F  
PM<sub>10</sub> Emission Factor: 0.0076 lb-PM<sub>10</sub>/MMBtu  
Percentage of PM as PM<sub>10</sub> in Exhaust: 100%  
Exhaust Oxygen (O<sub>2</sub>) Concentration: 3%

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

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

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

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

**Rule 4301 Fuel Burning Equipment**

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

Section 5.0 gives the requirements of the rule.

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

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

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

District Rule 4301 Limits			
Unit	NO <sub>2</sub>	Total PM	SO <sub>2</sub>
S-1246-292, '-293, '-294, '-311, '-314, '-318	0.68	0.65	0.24 0.48 ('-292 and '-293 only)
S-1246-329-0 through '-331-0 (lb/hr)	0.68	0.65	0.24
S-1246-332-0 (lb/hr)	0.68	0.65	0.57
Rule Limit (lb/hr)	140	10	200

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

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

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

The unit is natural gas-fired with a maximum heat input of 20.0 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 emissions limits of District Rule 4320 and all other requirements are equivalent or more stringent than District Rule 4305 requirements, compliance with District Rule 4320 requirements will satisfy requirements of District Rule 4305.

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

The unit is natural gas-fired with a maximum heat input of 20.0 MMBtu/hr. Pursuant to Section 2.0 of District Rule 4306, the unit is subject to District Rule 4306, *Boilers, Steam Generators and Process Heaters – Phase 3*.

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

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

**Section 5.0 Requirements**

Section 5.1 of the rule requires compliance with the NO<sub>x</sub> and CO emissions limits listed in Table 1 of Section 5.2 or payment of an annual emissions fee to the District as specified in Section 5.3 and compliance with the control requirements specified in Section 5.4; or as stated in Section 5.1.3, comply with the applicable Low-use Unit requirements of Section 5.5.

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

C. Oilfield Steam Generators

VII. Rule 4320 Emissions Limits				
Category	Operated on gaseous fuel		Operated on liquid fuel	
	NO <sub>x</sub> Limit	CO Limit	NO <sub>x</sub> Limit	CO Limit
1. Units with a total rated heat input >20.0 MMBtu/hr	Standard Schedule 7 ppmv or 0.008 lb/MMBtu; or			
	Staged Enhanced Schedule Initial limit: 9 ppmv @ 3% O <sub>2</sub> , 0.011 lb/MMBtu	400 ppmv @ 3% O <sub>2</sub>	40 ppmv or 0.052 lb/MMBtu	400 ppmv @ 3% O <sub>2</sub>
	Final limit: 5 ppmv @ 3% O <sub>2</sub> , 0.0062 lb/MMBtu			

- the proposed NO<sub>x</sub> emission factor is 7 ppmvd @ 3% O<sub>2</sub> (0.0108 lb/MMBtu), and
- the proposed CO emission factors for new and existing steam generators are no greater than 50 ppmvd @ 3% O<sub>2</sub> (0.037 lb/MMBtu).

Therefore, compliance with Section 5.1 of District Rule 4320 is expected.

A permit condition listing the emissions limits will be listed on permit as shown in the DEL section above.

### **Section 5.3 Annual Fee Calculation**

Applicant has proposed to meet the emissions limits requirements of Section 5.1 and therefore this section is not applicable.

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

Section 5.4 of the rule requires one of four options for control of particulate matter: 1) combustion of PUC-quality natural gas, commercial propane, butane, or liquefied petroleum gas, or a combination of such gases, 2) limit fuel sulfur content to no more than five (5) grains of total sulfur per one hundred (100) standard cubic, 3) install and properly operate an emission control system that reduces SO<sub>2</sub> emissions by at least 95% by weight; or limit exhaust SO<sub>2</sub> to less than or equal to 9 ppmv corrected to 3.0% O<sub>2</sub> or 4) 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.

Units S-1246-294, '-311, '-314, '-318, '-329, '-330, and '-331 have a sulfur emission limit of 0.00285 lb SO<sub>2</sub>/MMBtu (1.0 gr S/100scf) and are authorized to combust natural gas only. Units S-1246-292 and '-293 have a sulfur emission limit of 0.0059 lb SO<sub>2</sub>/MMBtu (2.0 gr S/100scf) and are authorized to combust natural/TEOR/TVR gas. Unit S-1246-332 has a sulfur emissions limit of 0.0067 lb/MMBtu (2.5 gr S/100scf) and is authorized to combust natural/TEOR/TVR gas. Therefore all of the units are in compliance with the SO<sub>x</sub>/PM<sub>10</sub> requirements of Section 5.4.1.2 of the rule which states the following:

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

Compliance with the rule is expected.

### **Section 5.5 Low Use**

Section 5.5 requires that units limited to less than or equal to 1.8 billion Btu per calendar year heat input pursuant to a District Permit to Operate Tune the unit at least twice per calendar year, or if the unit does not operate throughout a continuous six-month period within a calendar year, only one tune-up is required for that calendar year. No tune-up is required for any unit that is not operated during that calendar year; this unit may be test fired to verify availability of the unit for its intended use, but once the test firing is completed the unit shall be shutdown; or operate the unit in a manner that maintains

exhaust oxygen concentrations at less than or equal to 3.00 percent by volume on a dry basis.

The subject steam generators are not low use units and therefore the requirements of Section 5.5 do not apply.

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

Applicable emissions limits are not required during startup and shutdown provided the duration of each start-up or each shutdown shall not exceed two hours, the emission control system shall be in operation and emissions shall be minimized insofar as technologically feasible during start-up or shutdown or operator has submitted an application for a Permit to Operate condition to allow more than two hours for each start-up or each shutdown provided the operator meets all of the conditions specified in Sections 5.6.3.1 through 5.6.3.3. Berry has requested that startup and shutdown provisions be added to the ATCs for new units '-229 through '-332. The following conditions are included on the ATCs to address the startup and shutdown emissions:

Duration of start-up and shutdown shall not exceed 2 hours each per occurrence. [District Rules 2201, 4305, 4306, and 4320]

Maximum NO<sub>x</sub> emissions from the steam generator, including start-up and shutdown, shall not exceed 19.7 lb-NO<sub>x</sub>/day. [District Rule 2201]

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

Section 5.7 requires either use of a APCO approved Continuous Emissions Monitoring System (CEMS) for NO<sub>x</sub>, CO, and oxygen, or implementation of an APCO-approved Alternate Monitoring System consisting of:

- 5.7.1.1 Periodic NO<sub>x</sub> and CO exhaust emission concentrations,
- 5.7.1.2 Periodic exhaust oxygen concentration,
- 5.7.1.3 Flow rate of reducing agent added to exhaust,
- 5.7.1.4 Catalyst inlet and exhaust temperature,
- 5.7.1.5 Catalyst inlet and exhaust oxygen concentration,
- 5.7.1.6 Periodic flue gas recirculation rate, or
- 5.7.1.7 Other operational characteristics.

In order to satisfy the requirements of District Rule 4320, the applicant has proposed to use pre-approved alternate monitoring scheme A (pursuant to District Policy SSP-1105), which requires that monitoring of NO<sub>x</sub>, CO, and O<sub>2</sub> exhaust concentrations shall be conducted at least once per month (in which a source test is not performed) using a portable analyzer. The following conditions will be incorporated into the permit in order to ensure compliance with the requirements of the proposed alternate monitoring plan:

- {4063} The permittee shall monitor and record the stack concentration of NO<sub>x</sub>, CO, and O<sub>2</sub> at least once every month (in which a source test is not performed) using a portable analyzer that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e.

the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305, 4306, and 4320]

- {4064} If either the NO<sub>x</sub> or CO concentrations corrected to 3% O<sub>2</sub>, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of the performing the notification and testing required by this condition. [District Rules 4305, 4306, and 4320]
- {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<sub>x</sub>, CO, and O<sub>2</sub> measurements, (2) the O<sub>2</sub> concentration in percent by volume and the measured NO<sub>x</sub> and CO concentrations corrected to 3% O<sub>2</sub>, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306, and 4320]

### **5.7.6 Monitoring SO<sub>x</sub> Emissions**

Section 5.7.6.1 Operators complying with Sections 5.4.1.1 or 5.4.1.2 shall 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.

Section 5.7.6.2 Operators complying with Section 5.4.1.3 by installing and operating a control device with 95% SO<sub>x</sub> reduction shall propose the key system operating parameters and frequency of the monitoring and recording. The monitoring option proposed shall be submitted for approval by the APCO.

Section 5.7.6.3 Operators complying with Section 5.4.1.3 shall perform an annual source test unless a more frequent sampling and reporting period is included in the Permit To Operate. Source tests shall be performed in accordance with the test methods in Section 6.2.

#### **Sulfur Monitoring**

The following conditions will be included on the ATC for the steam generator which is authorized to combust natural/TEOR/produced gas (ATC S-1246-332-0):



Permittee shall determine sulfur content of combusted gas weekly for eight consecutive weeks. After demonstrating compliance for eight consecutive weeks testing may be conducted on a quarterly basis. Weekly sulfur testing shall resume if quarterly testing does not indicate compliance. Weekly gas analysis shall be performed using Draeger tubes and quarterly analysis using ASTM method D3246 or double GC for H<sub>2</sub>S and mercaptans. First of the weekly gas analyses shall be done using laboratory analysis. [District Rules 1081, 2201, and 4320] N

Compliance with fuel sulfur limit(s) can be demonstrated either by monitoring sulfur content at location(s) after all fuel sources are combined prior to incineration, or by monitoring the sulfur content and volume of each fuel source and performing mass balance calculations. Records of monitoring locations, detected sulfur concentrations, and mass balance calculations, if necessary, shall be maintained and kept onsite and made readily available for District inspection upon request. [District Rules 1081, 2201, and 4320] N

### **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) as stated in the following ATC condition:

{2976} The source plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306, and 4320]

Section 5.8.2 requires that all emissions measurements 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.

{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, 4306, and 4320]

Section 5.8.3 Continuous Emissions Monitoring System (CEMS) emissions measurements shall be averaged over a period of 15 consecutive minutes to demonstrate compliance with the applicable emission limits. Any 15-consecutive-minute block average CEMS measurement exceeding the applicable emission limits shall constitute a violation. The steam generators are not equipped with CEMs and therefore this section is not applicable.

Section 5.8.4 For emissions monitoring pursuant to Sections 5.7.1, and 6.3.1 using a portable NO<sub>x</sub> analyzer as part of an APCO approved Alternate Emissions Monitoring System, emission readings shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15-consecutive-minute sample reading or by taking at least five readings evenly spaced out over the 15-consecutive-minute period.

{2937} 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 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 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.

{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 6.1.1 requires that a unit operated under the exemption of Section 4.2 shall monitor and record, for each unit, the cumulative annual hours of operation. The units are not Section 4.2 exempt and therefore these records are not required.

Section 6.1.2 requires the operator of any unit that is subject to the requirements of Section 5.5 shall record the amount of fuel use at least on a monthly basis for each unit. On and after the applicable compliance schedule specified in Section 7.0, in the event that such unit exceeds the applicable annual heat input limit specified in Section 5.5, the unit shall be brought into full compliance with this rule as specified in Section 5.2 Table 1. The units are not low use and therefore these records are not necessary.

Section 6.1.3 The operator of any unit subject to Section 5.5.1 or Section 6.3.1 shall maintain records to verify that the required tune-up and the required monitoring of the operational characteristics of the unit have been performed.

Section 6.1.4 The operator performing start-up or shutdown of a unit shall keep records of the duration of start-up or shutdown.

Section 6.1.5 The operator of any unit firing on liquid fuel during a PUC-quality natural gas curtailment period pursuant to Section 5.4.2 shall record the sulfur content of the fuel, amount of fuel used, and duration of the natural gas curtailment period. The units are not authorized to combust liquid fuel. Therefore this section is not applicable.

**Section 6.2, Test Methods**

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

Pollutant	Units	Test Method Required
NO <sub>x</sub>	ppmv	EPA Method 7E or ARB Method 100
NO <sub>x</sub>	lb/MMBtu	EPA Method 19
CO	ppmv	EPA Method 10 or ARB Method 100
Stack Gas O <sub>2</sub>	%	EPA Method 3 or 3A, or ARB Method 100
Stack Gas Velocities	ft/min	EPA Method 2
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 <sub>2</sub> S) Content		EPA Method 11 or EPA Method 15, as appropriate.
Sulfur Content of Liquid Fuel		ASTM D 6920-03 or ASTM D 5453-99

The following test method conditions are included on the ATCs:

{2977} NO<sub>x</sub> emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 4305, 4306, and 4320]

{2978} CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305, 4306, and 4320]

{2979} Stack gas oxygen (O<sub>2</sub>) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305, 4306, and 4320]

Section 6.2.8.2. The SO<sub>x</sub> emission control system efficiency shall be determined using the following:

$$\% \text{ Control Efficiency} = [(C_{\text{SO}_2, \text{inlet}} - C_{\text{SO}_2, \text{outlet}}) / C_{\text{SO}_2, \text{inlet}}] \times 100$$

where:

$C_{\text{SO}_2, \text{inlet}}$  = concentration of SOx (expressed as SO<sub>2</sub>) at the inlet side of the SOx emission control system, in lb/dscf

$C_{\text{SO}_2, \text{outlet}}$  = concentration of SOx (expressed as SO<sub>2</sub>) at the outlet side of the SOx emission control system, in lb/dscf

The units are not equipped with a SO<sub>2</sub> scrubber. Therefore this section is not applicable.

### Section 6.3 Compliance Testing

Section 6.3.1 requires that this unit be tested to determine compliance with the applicable requirements of section 5.2 not less than once every 12 months (no more than 30 days before or after the required annual source test date). Upon demonstrating compliance on two consecutive compliance source tests, the following source test may be deferred for up to thirty-six months.

Section 6.3.1.1 Units that demonstrate compliance on two consecutive 12-month source tests may defer the following 12-month source test for up to 36 months (no more than 30 days before or after the required 36-month source test date). During the 36-month source testing interval, the operator shall tune the unit in accordance with the provisions of Section 5.5.1, and shall monitor, on a monthly basis, the unit's operational characteristics recommended by the manufacturer to ensure compliance with the applicable emission limits specified in Section 5.2.

Section 6.3.1.2 Tune-ups required by Sections 5.5.1 and 6.3.1 do not need to be performed for units that operate and maintain an APCO approved CEMS or an APCO approved Alternate Monitoring System where the applicable emission limits are periodically monitored. Applicant has proposed to monitor the emissions of NOx and CO Alternate Monitoring Scheme "A" and therefore tuning is not required.

Section 6.3.1.3 If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits specified in Section 5.2, the source testing frequency shall revert to at least once every 12 months.

The following conditions are included on the ATC:

{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]

{3467} Source testing to measure NOx and CO emissions from this unit while fired on natural gas shall be conducted within 60 days of initial start-up. [District Rules 2201, 4305, 4306, and 4320]

{3466} Source testing to measure NO<sub>x</sub> and CO emissions from this unit while fired on natural gas shall be conducted at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306, and 4320]

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

Sections 6.3.2.1 through 6.3.2.7 address the requirements of group testing which is not applicable for this project.

#### **Section 6.4, Emission Control Plan (ECP)**

Section 6.4.1 requires that the operator of any unit shall submit to the APCO for approval an Emissions Control Plan according to the compliance schedule in Section 7.0 of District Rule 4320.

The proposed unit will be in compliance with the emissions limits listed in Table 1, Section 5.1 of this rule and with periodic monitoring and source testing requirements. Therefore, this current application for the new proposed unit satisfies the requirements of the Emission Control Plan, as listed in Section 6.4 of District Rule 4320. No further discussion is required.

#### **Section 7.0, Compliance Schedule**

Section 7.0 indicates that an operator with multiple units at a stationary source shall comply with this rule in accordance with the schedule specified in Table 1, Section 5.2 of District Rule 4320.

The units 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 7.1 of District Rule 4306, are satisfied. No further discussion is required.

#### **Conclusion**

Conditions are included on the ATCs in order to ensure compliance with each section of this rule, see attached draft permit(s). Therefore, compliance with District Rule 4320 requirements is expected.

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

This rule limits NO<sub>x</sub> emissions from existing steam generators used in thermally enhanced oil recovery operations prior to August 22, 1986. The NO<sub>x</sub> emissions limits of

the steam generators in this project authorized to combust TEOR gas are well below the NOx limit of 0.14 lb/MMBtu allowed by this rule for natural gas-fired units.

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

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

This rule limits sulfur compound emissions from existing steam generators used in oil field operations prior to September 12, 1979. The limit imposed by the rule is 0.11 lb S/MMBtu, either individually or on average basis for all of an operating steam generators subject to the rule requirements. The highest proposed SO2 emissions factor, 0.0067 lb-SOx/MMBtu (0.0034 lb-S/MMBtu), is in compliance with the rule.

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

**Rule 4801 Sulfur Compounds**

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

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

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

With:

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

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

P (Standard Pressure) = 14.7 psi

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

$$\frac{0.0067 \text{ lb-SOx}}{\text{MMBtu}} \times \frac{\text{MMBtu}}{8,578 \text{ dscf}} \times \frac{1 \text{ lb} \cdot \text{mol}}{64 \text{ lb}} \times \frac{10.73 \text{ psi} \cdot \text{ft}^3}{\text{lb} \cdot \text{mol} \cdot \text{°R}} \times \frac{520 \text{°R}}{14.7 \text{ psi}} \times \frac{1,000,000 \cdot \text{parts}}{\text{million}} = 4.6 \frac{\text{parts}}{\text{million}}$$

$$\text{Sulfur Concentration} = 4.6 \frac{\text{parts}}{\text{million}} < 2,000 \text{ ppmv (or 0.2\%)}$$

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

## California Environmental Quality Act (CEQA)

The applicant initially proposed to install five new 85 MMBtu/hr natural gas-fired steam generators but has requested to revise the proposal to only install three new 85 MMBtu/hr natural gas-fired steam generators due to the economic downturn and declining oil prices. Therefore, this project will not have a significant impact on the environment.

However, if a change is proposed, such as additional steam generators or increasing the emission rates for the steam generators in this current project, this current project along with any future projects may be considered one project for CEQA purposes, and therefore a CEQA analysis for the combined projects may be required.

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

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

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)).

## VIII. RECOMMENDATION

Compliance with all applicable rules and regulations is expected. Pending a successful NSR Public Noticing period, issue Authorities to Construct S-1246-292-10, '-293-7, '-294-6, '-311-3, '-314-2, '-318-2, '-329-0 through '-332-0 subject to the permit conditions on the attached draft Authorities to Construct in **Attachment VII**.

**IX. BILLING INFORMATION**

<b>Annual Permit Fees</b>			
Permit Number	Fee Schedule	Fee Description	Annual Fee
S-1246-292-10, '-293-7, '-294-6, '-311-3, '-314-2, '-318-2, '-329-0 through '-332-0	3020-02-H	85 MMBtu/hr	\$953.00

**Attachments**

- I: PTOs S-1246-292-6, '-293-3, '-294-3, '-311-2, and 318-1 and ATCs '-292-8, '-293-5, '-294-4, and '-314-0
- II: Location Map
- III: Manufacturer's Information on Low NOx Burner
- IV: Emissions Profiles
- V: BACT Analysis
- VI: Health Risk Assessment and Ambient Air Quality Analysis
- VII: Draft ATCs



**ATTACHMENT I**  
**PTOs S-1246-292-6, '-293-3, '-294-3, '-311-2, and 318-1 and**  
**ATCs '-292-8, '-293-5, '-294-4, and '-314-0**

# San Joaquin Valley Air Pollution Control District

PERMIT UNIT: S-1246-292-6

EXPIRATION DATE: 03/31/2010

SECTION: 3 TOWNSHIP: 31S RANGE: 22E

## EQUIPMENT DESCRIPTION:

85 MMBTU/HR C.E. NATCO TEOR GAS/NATURAL GAS-FIRED STEAM GENERATOR (#166, DIS# 28637-82) WITH NORTH AMERICAN LE ULTRA LOW NOX BURNER, FGR AND O2 CONTROLLER

## 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] Federally Enforceable Through Title V Permit
3. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit
4. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
5. The unit shall only be fired on PUC-quality natural gas or TEOR gas from the vapor control system listed on S-1246-295. [District Rule 2201] Federally Enforceable Through Title V Permit
6. Emissions from the steam generator shall not exceed any of the following limits: 0.0059 lb-SO<sub>x</sub>/MMBtu, 0.0076 lb-PM<sub>10</sub>/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4305 and 4306] Federally Enforceable Through Title V Permit
7. Except during start-up and shutdown periods emissions from the steam generator shall not exceed any of the following limits: 9 ppmvd NO<sub>x</sub> @ 3% O<sub>2</sub>, or 47 ppmvd CO @ 3% O. [District Rules 2201, 4305, and 4306] Federally Enforceable Through Title V Permit
8. Maximum emissions from the steam generator, including start-up and shutdown, shall not exceed any of the following limits: 22.4 lb-NO<sub>x</sub>/day, or 71.4 lb-CO/day. [District Rule 2201] Federally Enforceable Through Title V Permit
9. 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, 5.5.6 and 4306, 5.3] Federally Enforceable Through Title V Permit
10. 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 4306, 3.25 and 3.22] Federally Enforceable Through Title V Permit

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

11. The permittee shall monitor and record the stack concentration of NO<sub>x</sub>, CO, and O<sub>2</sub> at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
12. If either the NO<sub>x</sub> or CO concentrations corrected to 3% O<sub>2</sub>, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
13. 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 and 4306] Federally Enforceable Through Title V Permit
14. The permittee shall maintain records of: (1) the date and time of NO<sub>x</sub>, CO, and O<sub>2</sub> measurements, (2) the O<sub>2</sub> concentration in percent and the measured NO<sub>x</sub> and CO concentrations corrected to 3% O<sub>2</sub>, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
15. 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] Federally Enforceable Through Title V Permit
16. Source testing to measure natural gas-combustion NO<sub>x</sub> and CO emissions from this unit shall be conducted at least once every twelve (12) months. 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 and 4306] Federally Enforceable Through Title V Permit
17. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
18. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
19. NO<sub>x</sub> emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
20. CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
21. Stack gas oxygen (O<sub>2</sub>) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit

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

22. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
23. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
24. Permittee shall maintain records of the sulfur content and the daily quantity of gas and vapor burned in this steam generator. Compliance with the SOx emissions limit shall be demonstrated by calculation, using the sulfur content and quantities of gas and vapor burned. [District Rule 2201] Federally Enforceable Through Title V Permit
25. 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, and 4306] Federally Enforceable Through Title V Permit

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

# San Joaquin Valley Air Pollution Control District

**PERMIT UNIT:** S-1246-293-3

**EXPIRATION DATE:** 03/31/2010

**SECTION:** NW18 **TOWNSHIP:** 28S **RANGE:** 21E

**EQUIPMENT DESCRIPTION:**

85 MMBTU/HR NATURAL GAS AND TEOR GAS FIRED STEAM GENERATOR WITH FGR, NORTH AMERICAN LE ULTRA LOW NOX BURNER, AND O2 CONTROLLER (GEN SITE 1824)

## PERMIT UNIT REQUIREMENTS

---

1. 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 NSR Rule] Federally Enforceable Through Title V Permit
2. Unit is also approved for operation at the following locations: NE and SE Section 3, T31S, R22E; NE, SE, and SW Section 2, T31S, R22E; Section 11, T31S, 22E; & SE Sections 24, T31S, R22E. [District Rule 4102] Federally Enforceable Through Title V Permit
3. Permittee shall notify the District Compliance Division of each location at which the unit is located in excess of 24 hours. Such notification shall be made no later than 48 hours after starting operation at the location. [District Rule 1070] Federally Enforceable Through Title V Permit
4. The duration of each startup and shutdown period shall not exceed 2.0 hours. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
5. The emission control systems shall be in operation and emissions shall be minimized insofar as technologically feasible during startup and shutdown. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
6. Except for periods of startup and shutdown, emission rates shall not exceed any of the following: 9 ppmvd NO<sub>x</sub> @ 3% O<sub>2</sub> or 0.0108 lb-NO<sub>x</sub>/MMBtu, 0.0076 lb-PM<sub>10</sub>/MMBtu, 50 ppmvd CO @ 3% O<sub>2</sub> or 0.035 lb-CO/MMBtu, SO<sub>x</sub> (as SO<sub>2</sub>) - 0.0059 lb/MMBtu, or 0.0055 lb-VOC/MMBtu. [District NSR Rule, 4305, and 4306] Federally Enforceable Through Title V Permit
7. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
8. Steam generator firebox convection section and all flue gas ductwork shall be maintained to minimize emissions to the atmosphere. [District NSR Rule] Federally Enforceable Through Title V Permit
9. The unit shall only be fired on PUC-quality natural gas and desulfurized gas from TEOR operation S-1246-296 which may include gas from TEOR operations S-1246-105 and '-295. [District NSR Rule] Federally Enforceable Through Title V Permit
10. TEOR operation S-1246-296 gas including gas from '-105 and '-295 shall have the sulfur content reduced by at least 95% by weight prior to introduction into this unit. [District NSR Rule] Federally Enforceable Through Title V Permit
11. Excess combustion air shall be maintained at no less than 10% unless continuous operation oxygen analyzer/controller is utilized. [District NSR Rule] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

12. The permittee shall monitor and record the stack concentration of NO<sub>x</sub>, CO, and O<sub>2</sub> at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305, and 4306] Federally Enforceable Through Title V Permit
13. If either the NO<sub>x</sub> or CO concentrations corrected to 3% O<sub>2</sub>, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of the performing the notification and testing required by this condition. [District Rules 4305, and 4306] Federally Enforceable Through Title V Permit
14. 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, and 4306] Federally Enforceable Through Title V Permit
15. The permittee shall maintain records of: (1) the date and time of NO<sub>x</sub>, CO, and O<sub>2</sub> measurements, (2) the O<sub>2</sub> concentration in percent and the measured NO<sub>x</sub> and CO concentrations corrected to 3% O<sub>2</sub>, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, and 4306] Federally Enforceable Through Title V Permit
16. 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] Federally Enforceable Through Title V Permit
17. Source testing to measure natural gas-combustion NO<sub>x</sub> and CO emissions from this unit shall be conducted at least once every twelve (12) months. 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 and 4306] Federally Enforceable Through Title V Permit
18. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
19. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
20. NO<sub>x</sub> emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
21. CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
22. Stack gas oxygen (O<sub>2</sub>) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit

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

23. 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, stack gas oxygen - EPA Method 3 or 3A or ARB Method 100, PM10 - EPA Method 201A, VOC - EPA methods 18, 25 or 25A [District Rule 1081] Federally Enforceable Through Title V Permit
24. 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 and 4306] Federally Enforceable Through Title V Permit
25. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
26. 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, and 4306] Federally Enforceable Through Title V Permit

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

# San Joaquin Valley Air Pollution Control District

**PERMIT UNIT:** S-1246-294-3

**EXPIRATION DATE:** 03/31/2010

**SECTION:** NW18 **TOWNSHIP:** 28S **RANGE:** 21E

**EQUIPMENT DESCRIPTION:**

62.5 MMBTU/HR C.E. NATCO NATURAL GAS FIRED STEAM GENERATOR (#179, DIS# 28642-82) WITH NORTH AMERICAN, MODEL 4231-G-LE, MAGNAFLAME LOW NOX BURNER AND O2 CONTROLLER (GEN SITE 1824)

## PERMIT UNIT REQUIREMENTS

---

1. 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 NSR Rule] Federally Enforceable Through Title V Permit
2. Unit is approved for operation at the following locations: NE and SE Section 3, T31S, R22E; NE, SE, and SW Section 2, T31S, R22E; Section 11, T31S, 22E; & SE Sections 24, T31S, R22E. [District NSR Rule] Federally Enforceable Through Title V Permit
3. The duration of each startup and shutdown period shall not exceed 2.0 hours. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
4. The emission control systems shall be in operation and emissions shall be minimized insofar as technologically feasible during startup and shutdown. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
5. Except for periods of startup and shutdown, emission rates shall not exceed any of the following: 15 ppmvd NOx @ 3% O2 or 0.018 lb-NOx/MMBtu, 0.0076 lb-PM10/MMBtu, 50 ppmvd CO @ 3% O2, SOx (as SO2) - 0.00285 lb/MMBtu, 0.037 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District NSR Rule, 4305, and 4306] Federally Enforceable Through Title V Permit
6. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
7. Steam generator firebox convection section and all flue gas ductwork shall be maintained to minimize emissions to the atmosphere. [District NSR Rule] Federally Enforceable Through Title V Permit
8. Only PUC-quality natural gas shall be used as fuel. [District NSR Rule] Federally Enforceable Through Title V Permit
9. Excess combustion air shall be maintained at no less than 10% unless continuous operation oxygen analyzer/controller is utilized. [District NSR Rule] Federally Enforceable Through Title V Permit
10. 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 and 4306] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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



11. If either the NO<sub>x</sub> or CO concentrations corrected to 3% O<sub>2</sub>, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of the performing the notification and testing required by this condition. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
12. 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 and 4306] Federally Enforceable Through Title V Permit
13. The permittee shall maintain records of: (1) the date and time of NO<sub>x</sub>, CO, and O<sub>2</sub> measurements, (2) the O<sub>2</sub> concentration in percent and the measured NO<sub>x</sub> and CO concentrations corrected to 3% O<sub>2</sub>, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
14. 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] Federally Enforceable Through Title V Permit
15. Source testing to measure natural gas-combustion NO<sub>x</sub> and CO emissions from this unit shall be conducted at least once every twelve (12) months. 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 and 4306] Federally Enforceable Through Title V Permit
16. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
17. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
18. NO<sub>x</sub> emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
19. CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
20. Stack gas oxygen (O<sub>2</sub>) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
21. 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 and 4306] Federally Enforceable Through Title V Permit
22. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

23. 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, and 4306] Federally Enforceable Through Title V Permit

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

# San Joaquin Valley Air Pollution Control District

PERMIT UNIT: S-1246-311-2

EXPIRATION DATE: 03/31/2010

## EQUIPMENT DESCRIPTION:

85 MMBTU/HR NATURAL GAS-FIRED STEAM GENERATOR #MNJ-406 WITH A NORTH AMERICAN MAGNA-FLAME LE BURNER, FLUE GAS RECIRCULATION, AND AN O2 CONTROLLER

## PERMIT UNIT REQUIREMENTS

---

1. Particulate matter emissions from any combustion source shall not exceed 0.1 grains/dscf (calculated to 12% carbon dioxide). [District Rules 4201 and 4301] Federally Enforceable Through Title V Permit
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 NSR Rule] Federally Enforceable Through Title V Permit
3. This unit shall only be fired on PUC-quality natural gas. [District NSR Rule] Federally Enforceable Through Title V Permit
4. Emissions from this unit shall not exceed any of the following limits: NOx (as NO2): 9 ppmvd @ 3% O2 or 0.0108 lb/MMBtu, CO: 35 ppmvd @ 3% O2 (equivalent to 0.026 lb/MMBtu, VOC: 0.0055 lb/MMBtu, PM10: 0.0076 lb/MMBtu, and SOx: 0.00285 lb/MMBtu. [District NSR Rule, 4305, and 4306] Federally Enforceable Through Title V Permit
5. Source testing to measure NOx and CO emissions from this unit while fired on natural gas shall be conducted at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
6. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
7. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
8. 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] Federally Enforceable Through Title V Permit
9. 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 and 4306] Federally Enforceable Through Title V Permit
10. CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
11. Stack gas oxygen (O2) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

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. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
13. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
14. The permittee shall monitor and record the stack concentration of NO<sub>x</sub>, CO, and O<sub>2</sub> at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
15. If either the NO<sub>x</sub> or CO concentrations corrected to 3% O<sub>2</sub>, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of the performing the notification and testing required by this condition. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
16. 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 and 4306] Federally Enforceable Through Title V Permit
17. The permittee shall maintain records of: (1) the date and time of NO<sub>x</sub>, CO, and O<sub>2</sub> measurements, (2) the O<sub>2</sub> concentration in percent and the measured NO<sub>x</sub> and CO concentrations corrected to 3% O<sub>2</sub>, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
18. 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, and 4306] Federally Enforceable Through Title V Permit

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

# San Joaquin Valley Air Pollution Control District

PERMIT UNIT: S-1246-318-1

EXPIRATION DATE: 03/31/2010

## EQUIPMENT DESCRIPTION:

85 MMBTU/HR NATURAL GAS-FIRED STEAM GENERATOR #MNJ-409 WITH A NORTH AMERICAN MAGNA-FLAME LE BURNER, FLUE GAS RECIRCULATION, AND AN O2 CONTROLLER

## PERMIT UNIT REQUIREMENTS

---

1. Particulate matter emissions from any combustion source shall not exceed 0.1 grains/dscf (calculated to 12% carbon dioxide). [District Rules 4201 and 4301] Federally Enforceable Through Title V Permit
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] Federally Enforceable Through Title V Permit
3. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
4. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit
5. This unit shall only be fired on PUC-quality natural gas. [District Rule 2201] Federally Enforceable Through Title V Permit
6. Emissions from this unit shall not exceed any of the following limits: NOx (as NO2): 9 ppmvd @ 3% O2 or 0.0108 lb/MMBtu, CO: 35 ppmvd @ 3% O2 (equivalent to 0.026 lb/MMBtu), VOC: 0.0055 lb/MMBtu, PM10: 0.0076 lb/MMBtu, and SOx: 0.00285 lb/MMBtu. [District Rules 2201, 4305, and 4306] Federally Enforceable Through Title V Permit
7. Source testing to measure NOx and CO emissions from this unit while fired on natural gas shall be conducted at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
8. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
9. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
10. 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] Federally Enforceable Through Title V Permit
11. 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 and 4306] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

12. CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
13. Stack gas oxygen (O<sub>2</sub>) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
14. 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 and 4306] Federally Enforceable Through Title V Permit
15. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
16. The permittee shall monitor and record the stack concentration of NO<sub>x</sub>, CO, and O<sub>2</sub> at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
17. If either the NO<sub>x</sub> or CO concentrations corrected to 3% O<sub>2</sub>, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of the performing the notification and testing required by this condition. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
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 and 4306] Federally Enforceable Through Title V Permit
19. The permittee shall maintain records of: (1) the date and time of NO<sub>x</sub>, CO, and O<sub>2</sub> measurements, (2) the O<sub>2</sub> concentration in percent and the measured NO<sub>x</sub> and CO concentrations corrected to 3% O<sub>2</sub>, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
20. 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, and 4306] Federally Enforceable Through Title V Permit

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



COPY

## AUTHORITY TO CONSTRUCT

PERMIT NO: S-1246-292-8

ISSUANCE DATE: 08/20/2008

LEGAL OWNER OR OPERATOR: BERRY PETROLEUM COMPANY  
MAILING ADDRESS: ATTN: EH&S MANAGER  
5201 TRUXTUN AVENUE SUITE 300  
BAKERSFIELD, CA 93309-0640

LOCATION: HEAVY OIL WESTERN STATIONARY SOURCE  
KERN COUNTY, CA

SECTION: 3 TOWNSHIP: 31S RANGE: 22E

**EQUIPMENT DESCRIPTION:**

MODIFICATION OF 85 MMBTU/HR C.E. NATCO NATURAL/TEOR GAS-FIRED STEAM GENERATOR WITH A NORTH AMERICAN MODEL LE ULTRA LOW NOX BURNER AND WITH FLUE GAS RECIRCULATION (FGR) AND AN O2 CONTROLLER (#1MNJ-403, DIS# 28637-82) (GEN SITE 1384); AUTHORIZE INCINERATION OF VAPORS ASSOCIATED WITH ATC S-1246-296

### CONDITIONS

1. The facility shall submit an application to modify the Title V permit in accordance with the timeframes and procedures of District Rule 2520. [District Rule 2520] Federally Enforceable Through Title V Permit
2. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102] Federally Enforceable Through Title V Permit
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] Federally Enforceable Through Title V Permit
4. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit
5. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director / APCO

DAVID WARNER, Director of Permit Services

S-1246-292-8 : Aug 9 2008 8:52AM -- EDGEHILR : Joint Inspection NOT Required

6. Emissions from the steam generator shall not exceed any of the following limits: 0.0059 lb-SO<sub>x</sub>/MMBtu, 0.0076 lb-PM<sub>10</sub>/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4305 and 4306] Federally Enforceable Through Title V Permit
7. Except during start-up and shutdown periods emissions from the steam generator shall not exceed any of the following limits: 9 ppmvd NO<sub>x</sub> @ 3% O<sub>2</sub>, or 47 ppmvd CO @ 3% O. [District Rules 2201, 4305, and 4306] Federally Enforceable Through Title V Permit
8. Maximum emissions from the steam generator, including start-up and shutdown, shall not exceed any of the following limits: 22.4 lb-NO<sub>x</sub>/day, or 71.4 lb-CO/day. [District Rule 2201] Federally Enforceable Through Title V Permit
9. 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, 5.5.6 and 4306, 5.3] Federally Enforceable Through Title V Permit
10. 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 4306, 3.25 and 3.22] Federally Enforceable Through Title V Permit
11. The permittee shall monitor and record the stack concentration of NO<sub>x</sub>, CO, and O<sub>2</sub> at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
12. If either the NO<sub>x</sub> or CO concentrations corrected to 3% O<sub>2</sub>, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of the performing the notification and testing required by this condition. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
13. 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 and 4306] Federally Enforceable Through Title V Permit
14. The permittee shall maintain records of: (1) the date and time of NO<sub>x</sub>, CO, and O<sub>2</sub> measurements, (2) the O<sub>2</sub> concentration in percent and the measured NO<sub>x</sub> and CO concentrations corrected to 3% O<sub>2</sub>, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
15. 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] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE



16. Source testing to measure natural gas-combustion NOx and CO emissions from this unit shall be conducted at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
17. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
18. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
19. 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 and 4306] Federally Enforceable Through Title V Permit
20. CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
21. Stack gas oxygen (O<sub>2</sub>) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
22. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
23. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
24. Permittee shall maintain records of the sulfur content and the daily quantity of gas and vapor burned in this steam generator. Compliance with the SOx emissions limit shall be demonstrated by calculation, using the sulfur content and quantities of gas and vapor burned. [District Rule 2201] Federally Enforceable Through Title V Permit
25. 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, and 4306] Federally Enforceable Through Title V Permit
26. Authority to Construct (ATC) S-1246-292-6 shall be implemented prior to, or concurrently with this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit



COPY

## AUTHORITY TO CONSTRUCT

**PERMIT NO:** S-1246-293-5

**ISSUANCE DATE:** 08/20/2008

**LEGAL OWNER OR OPERATOR:** BERRY PETROLEUM COMPANY  
**MAILING ADDRESS:** ATTN: EH&S MANAGER  
5201 TRUXTUN AVENUE SUITE 300  
BAKERSFIELD, CA 93309-0640

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

**SECTION:** NW18 **TOWNSHIP:** 28S **RANGE:** 21E

**EQUIPMENT DESCRIPTION:**

MODIFICATION OF 62.5 MMBTU/HR C.E. NATCO NATURAL/TEOR GAS-FIRED STEAM GENERATOR (#178, DIS# 28641-82) WITH NORTH AMERICAN, MODEL 4231-G-LE, MAGNAFLAME LOW NOX BURNER AND O2 CONTROLLER (GEN SITE 1824): AUTHORIZE INCINERATION OF VAPORS ASSOCIATED WITH ATC S-1246-296

### CONDITIONS

1. The facility shall submit an application to modify the Title V permit in accordance with the timeframes and procedures of District Rule 2520. [District Rule 2520] Federally Enforceable Through Title V Permit
2. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102] Federally Enforceable Through Title V Permit
3. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit
4. Unit is also approved for operation at the following locations: NE and SE Section 3, T31S, R22E; NE, SE, and SW Section 2, T31S, R22E; Section 11, T31S, 22E; & SE Sections 24, T31S, R22E. [District Rule 4102] Federally Enforceable Through Title V Permit
5. Permittee shall notify the District Compliance Division of each location at which the unit is located in excess of 24 hours. Such notification shall be made no later than 48 hours after starting operation at the location. [District Rule 1070] Federally Enforceable Through Title V Permit
6. The duration of each startup and shutdown period shall not exceed 2.0 hours. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director / APCO

7. The emission control systems shall be in operation and emissions shall be minimized insofar as technologically feasible during startup and shutdown. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
8. Except for periods of startup and shutdown, emission rates shall not exceed any of the following: 9 ppmvd NO<sub>x</sub> @ 3% O<sub>2</sub> or 0.0108 lb-NO<sub>x</sub>/MMBtu, 0.0076 lb-PM<sub>10</sub>/MMBtu, 50 ppmvd CO @ 3% O<sub>2</sub> or 0.035 lb-CO/MMBtu, SO<sub>x</sub> (as SO<sub>2</sub>) - 0.0059 lb/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4305, and 4306] Federally Enforceable Through Title V Permit
9. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
10. Steam generator firebox convection section and all flue gas ductwork shall be maintained to minimize emissions to the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit
11. TEOR gas shall have the sulfur content reduced by at least 95% by weight prior to introduction into this unit. [District Rule 2201]
12. Excess combustion air shall be maintained at no less than 10% unless continuous operation oxygen analyzer/controller is utilized. [District Rule 2201] Federally Enforceable Through Title V Permit
13. The permittee shall monitor and record the stack concentration of NO<sub>x</sub>, CO, and O<sub>2</sub> at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
14. If either the NO<sub>x</sub> or CO concentrations corrected to 3% O<sub>2</sub>, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of the performing the notification and testing required by this condition. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
15. 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 and 4306] Federally Enforceable Through Title V Permit
16. The permittee shall maintain records of: (1) the date and time of NO<sub>x</sub>, CO, and O<sub>2</sub> measurements, (2) the O<sub>2</sub> concentration in percent and the measured NO<sub>x</sub> and CO concentrations corrected to 3% O<sub>2</sub>, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
17. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101] Federally Enforceable Through Title V Permit
18. 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] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

19. Source testing to measure natural gas-combustion NO<sub>x</sub> and CO emissions from this unit shall be conducted at least once every twelve (12) months. 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 and 4306] Federally Enforceable Through Title V Permit
20. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
21. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
22. NO<sub>x</sub> emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
23. CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
24. Stack gas oxygen (O<sub>2</sub>) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
25. The following test methods shall be used: NO<sub>x</sub> (ppmv) - EPA Method 7E or ARB Method 100, CO (ppmv) - EPA Method 10 or ARB Method 100, stack gas oxygen - EPA Method 3 or 3A or ARB Method 100, PM<sub>10</sub> - EPA Method 201A, VOC - EPA methods 18, 25 or 25A [District Rule 1081] Federally Enforceable Through Title V Permit
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 and 4306] Federally Enforceable Through Title V Permit
27. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
28. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following outdated SIP requirements: Rule 401 (Madera, Fresno, Kern, Kings, San Joaquin, Stanislaus, Tulare and Merced), Rule 110 (Fresno, Stanislaus, San Joaquin), Rule 109 (Merced), Rule 113 (Madera), Rule 111 (Kern, Tulare, Kings), and Rule 202 (Fresno, Kern, Tulare, Kings, Madera, Stanislaus, Merced, San Joaquin). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
29. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following applicable requirements: SJVUAPCD Rules 1100, sections 6.1 and 7.0 (12/17/92); 2010, sections 3.0 and 4.0 (12/17/92); 2031 (12/17/92); 2040 (12/17/92); 2070, section 7.0 (12/17/92); 2080 (12/17/92); 4101 (12/17/92); 4601, sections 5.1, 5.2, 5.4, 5.5, 6.1, and 6.2 (10/31/01); 8021 (11/15/01); 8031 (11/15/01); 8061 (11/15/01); A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
30. Facility shall comply with all applicable requirements regarding preparation and implementation of a risk management plan by June 21, 1999 and shall abide by all applicable sections of 40 CFR Part 68. [40 CFR 68] Federally Enforceable Through Title V Permit
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, and 4306] Federally Enforceable Through Title V Permit
32. ATC shall be implemented concurrently with or subsequent to ATC S-1246-293-4. [District Rule 2201] Federally Enforceable Through Title V Permit



COPY

## AUTHORITY TO CONSTRUCT

**PERMIT NO:** S-1246-294-4

**ISSUANCE DATE:** 07/10/2007

**LEGAL OWNER OR OPERATOR:** BERRY PETROLEUM COMPANY  
**MAILING ADDRESS:** ATTN: EH&S MANAGER  
5201 TRUXTUN AVENUE SUITE 300  
BAKERSFIELD, CA 93309-0640

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

**EQUIPMENT DESCRIPTION:**

MODIFICATION OF 62.5 MMBTU/HR C.E. NATCO NATURAL GAS FIRED STEAM GENERATOR (#179, DIS# 28642-82) WITH O2 CONTROLLER (GEN SITE 1824); REPLACE BURNER WITH NORTH AMERICAN 4231-G-85-LE ULTRA LOW NOX 85.0 MMBTU/HR BURNER AND ADD FGR

### CONDITIONS

1. The facility shall submit an application to modify the Title V permit in accordance with the timeframes and procedures of District Rule 2520. [District Rule 2520] Federally Enforceable Through Title V Permit
2. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
3. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit
4. Unit is approved for operation at the following locations: NW Section 18, T28S, R21E; NE and SE Section 3, T31S, R22E; NE, SE, and SW Section 2, T31S, R22E; Section 11, T31S, 22E; & SE Sections 24, T31S, R22E. [District Rule 4102]
5. Permittee shall notify the District Compliance Division to arrange a start-up inspection at the initial location of the unit. [District Rule 1070]
6. Permittee shall notify the District Compliance Division of each location at which the unit is located in excess of 24 hours. Such notification shall be made no later than 48 hours after starting operation at the location. [District Rule 1070]
7. The duration of each startup and shutdown period shall not exceed 2.0 hours. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director / APCO

8. The emission control systems shall be in operation and emissions shall be minimized insofar as technologically feasible during startup and shutdown. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
9. Except for periods of startup and shutdown, emission rates shall not exceed any of the following: 9 ppmvd NO<sub>x</sub> @ 3% O<sub>2</sub> or 0.011 lb-NO<sub>x</sub>/MMBtu, 0.0076 lb-PM<sub>10</sub>/MMBtu, 50 ppmvd CO @ 3% O<sub>2</sub> or 0.037 lb-CO/MMBtu, SO<sub>x</sub> (as SO<sub>2</sub>) - 0.00285 lb/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4305, and 4306] Federally Enforceable Through Title V Permit
10. Daily emissions from steam generator shall not exceed any of the following: NO<sub>x</sub>: 36.7 lb/day; SO<sub>x</sub>: 5.8 lb/day, PM<sub>10</sub>: 15.5 lb/day; CO: 71.4 lb/day, VOC: 11.2 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit
11. Annual emissions from steam generator shall not exceed any of the following: NO<sub>x</sub>: 8042 lb/yr; SO<sub>x</sub>: 2122 lb/yr; PM<sub>10</sub>: 5659 lb/yr; CO: 26,061 lb/yr; VOC: 4095 lb/yr. [District Rule 2201] Federally Enforceable Through Title V Permit
12. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
13. Only PUC-quality natural gas shall be used as fuel. [District Rule 2201] Federally Enforceable Through Title V Permit
14. The permittee shall monitor and record the stack concentration of NO<sub>x</sub>, CO, and O<sub>2</sub> at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
15. If either the NO<sub>x</sub> or CO concentrations corrected to 3% O<sub>2</sub>, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of the performing the notification and testing required by this condition. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
16. 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 and 4306] Federally Enforceable Through Title V Permit
17. The permittee shall maintain records of: (1) the date and time of NO<sub>x</sub>, CO, and O<sub>2</sub> measurements, (2) the O<sub>2</sub> concentration in percent and the measured NO<sub>x</sub> and CO concentrations corrected to 3% O<sub>2</sub>, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
18. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101] Federally Enforceable Through Title V Permit
19. 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] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

20. Source testing to measure natural gas-combustion NOx and CO emissions from this unit shall be conducted within 60 days of initial start-up. [District Rules 2201, 4305 and 4306] Federally Enforceable Through Title V Permit
21. Source testing to measure NOx and CO emissions from this unit shall be conducted at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
22. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
23. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
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 and 4306] Federally Enforceable Through Title V Permit
25. CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
26. Stack gas oxygen (O2) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
27. 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 and 4306] Federally Enforceable Through Title V Permit
28. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
29. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following outdated SIP requirements: Rule 401 (Madera, Fresno, Kern, Kings, San Joaquin, Stanislaus, Tulare and Merced), Rule 110 (Fresno, Stanislaus, San Joaquin), Rule 109 (Merced), Rule 113 (Madera), Rule 111 (Kern, Tulare, Kings), and Rule 202 (Fresno, Kern, Tulare, Kings, Madera, Stanislaus, Merced, San Joaquin). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
30. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following applicable requirements: SJVUAPCD Rules 1100, sections 6.1 and 7.0 (12/17/92); 2010, sections 3.0 and 4.0 (12/17/92); 2031 (12/17/92); 2040 (12/17/92); 2070, section 7.0 (12/17/92); 2080 (12/17/92); 4101 (12/17/92); 4601, sections 5.1, 5.2, 5.4, 5.5, 6.1, and 6.2 (10/31/01); 8021 (11/15/01); 8031 (11/15/01); 8061 (11/15/01); A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
31. Daily records of start-up and shutdown durations and number of occurrences of each shall be maintained. [District Rule 2201] Federally Enforceable Through Title V Permit
32. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, and 4306] Federally Enforceable Through Title V Permit
33. Prior to operating equipment under this Authority to Construct, permittee shall withdraw sufficient SOX emission reduction credits to offset the following quantity of emission increases: 1st quarter - 141 lb, 2nd quarter - 141 lb, 3rd quarter - 141 lb, and fourth quarter - 141 lb. Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 9/21/06). [District Rule 2201] Federally Enforceable Through Title V Permit
34. Prior to operating equipment under this Authority to Construct, permittee shall withdraw sufficient PM10 emission reduction credits to offset the following quantity of emission increases: 1st quarter - 375 lb, 2nd quarter - 375 lb, 3rd quarter - 375 lb, and fourth quarter - 375 lb. Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 9/21/06). [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

35. Prior to operating equipment under this Authority to Construct, permittee shall withdraw sufficient VOC emission reduction credits to offset the following quantity of emission increases: 1st quarter - 271 lb, 2nd quarter - 271 lb, 3rd quarter - 271 lb, and fourth quarter - 271 lb. Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 9/21/06). [District Rule 2201] Federally Enforceable Through Title V Permit
36. ERC Certificate Numbers S-2474-5, S-2357-4, and S-2545-1 (or certificates split from these certificates shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit





COPY

## AUTHORITY TO CONSTRUCT

PERMIT NO: S-1246-314-0

ISSUANCE DATE: 03/27/2008

**LEGAL OWNER OR OPERATOR:** BERRY PETROLEUM COMPANY  
**MAILING ADDRESS:** ATTN: EH&S MANAGER  
5201 TRUXTUN AVENUE SUITE 300  
BAKERSFIELD, CA 93309-0640

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

**EQUIPMENT DESCRIPTION:**  
85 MMBTU/HR NATURAL GAS-FIRED STEAM GENERATOR #MNJ-408 WITH A NORTH AMERICAN MAGNA-FLAME  
LE BURNER, FLUE GAS RECIRCULATION, AND AN O2 CONTROLLER

### CONDITIONS

1. The facility shall submit an application to modify the Title V permit in accordance with the timeframes and procedures of District Rule 2520. [District Rule 2520] Federally Enforceable Through Title V Permit
2. Prior to initial operation of this unit, permittee shall provide NOx emission reduction credits for the following quantities of emissions: 1st Quarter - 2,011 lb; 2nd Quarter - 2,011 lb; 3rd Quarter - 2,011 lb; 4th Quarter - 2,011 lb. Offsets shall be provided at the appropriate distance ratio specified in District Rule 2201. [District Rule 2201] Federally Enforceable Through Title V Permit
3. Prior to initial operation of this unit, permittee shall provide SOx emission reduction credits for the following quantities of emissions: 1st Quarter - 531 lb; 2nd Quarter - 531 lb; 3rd Quarter - 531 lb; 4th Quarter - 531 lb. Offsets shall be provided at the appropriate distance ratio specified in District Rule 2201. [District Rule 2201] Federally Enforceable Through Title V Permit
4. Prior to initial operation of this unit, permittee shall provide PM10 emission reduction credits for the following quantities of emissions: 1st Quarter - 1,415 lb; 2nd Quarter - 1,415 lb; 3rd Quarter - 1,415 lb; 4th Quarter - 1,415 lb. Offsets shall be provided at the appropriate distance ratio specified in District Rule 2201. [District Rule] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director / APCO

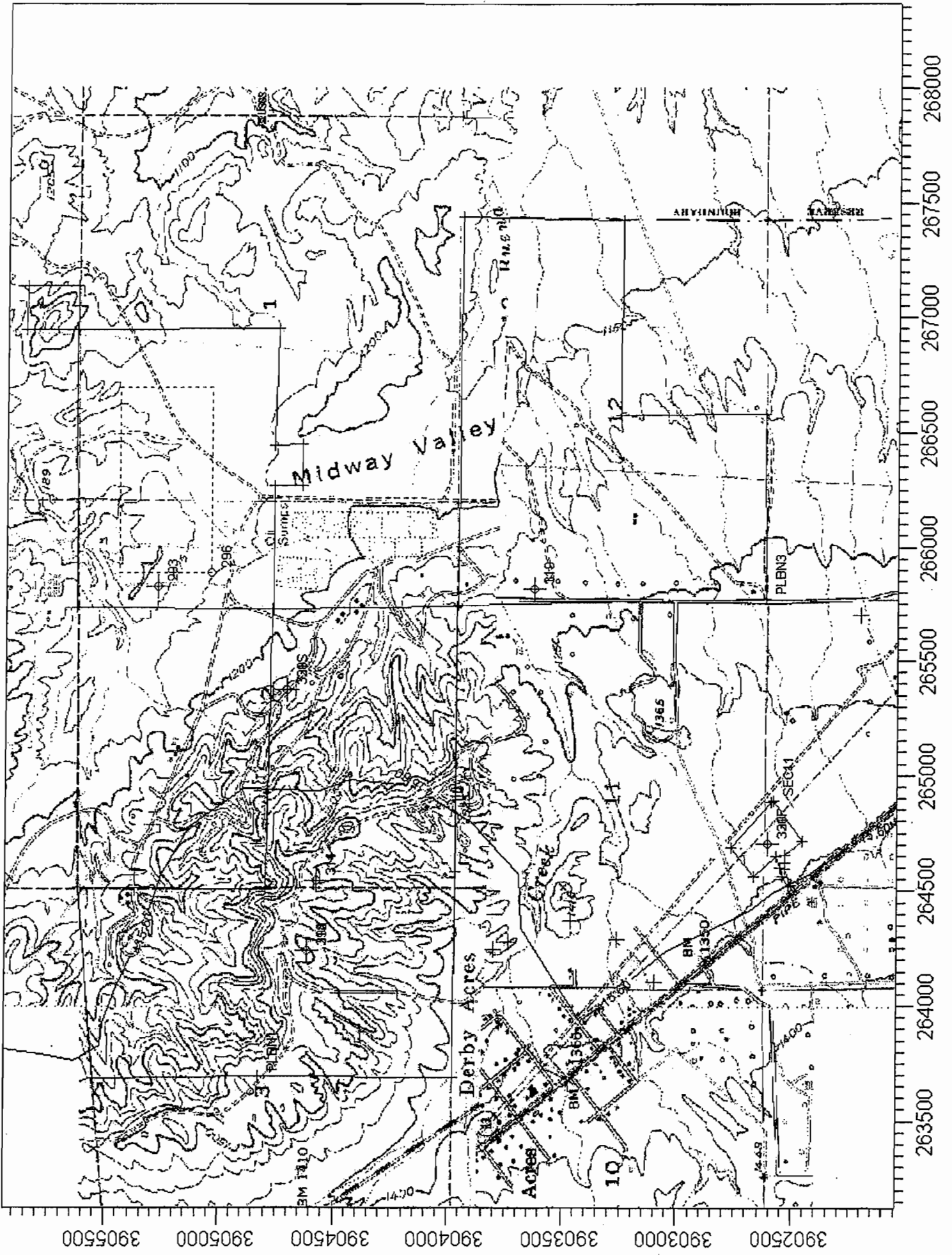
5. ERC certificate numbers (or any splits from these certificates) S-2784-2, S-2612-2, S-2617-2, S-2615-5 and S-2608-4 shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District. Upon approval of a revised offsetting proposal, the Authority to Construct shall be reissued administratively, specifying the new offsetting proposal. [District Rule 2201] Federally Enforceable Through Title V Permit
6. Particulate matter emissions from any combustion source shall not exceed 0.1 grains/dscf (calculated to 12% carbon dioxide). [District Rules 4201 and 4301] Federally Enforceable Through Title V Permit
7. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101] Federally Enforceable Through Title V Permit
8. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
9. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit
10. This unit shall only be fired on PUC-quality natural gas. [District Rule 2201] Federally Enforceable Through Title V Permit
11. Emissions from this unit shall not exceed any of the following limits: NO<sub>x</sub> (as NO<sub>2</sub>): 9 ppmvd @ 3% O<sub>2</sub> or 0.0108 lb/MMBtu, CO: 35 ppmvd @ 3% O<sub>2</sub> (equivalent to 0.026 lb/MMBtu), VOC: 0.0055 lb/MMBtu, PM<sub>10</sub>: 0.0076 lb/MMBtu, and SO<sub>x</sub>: 0.00285 lb/MMBtu. [District Rules 2201, 4305, and 4306] Federally Enforceable Through Title V Permit
12. Source testing to measure NO<sub>x</sub> and CO emissions from this unit while fired on natural gas shall be conducted within 60 days of initial start-up. [District Rules 2201, 4305, and 4306] Federally Enforceable Through Title V Permit
13. Source testing to measure NO<sub>x</sub> and CO emissions from this unit while fired on natural gas shall be conducted at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
14. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
15. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
16. 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] Federally Enforceable Through Title V Permit
17. NO<sub>x</sub> emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
18. CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
19. Stack gas oxygen (O<sub>2</sub>) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
20. 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 and 4306] Federally Enforceable Through Title V Permit
21. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

22. The permittee shall monitor and record the stack concentration of NO<sub>x</sub>, CO, and O<sub>2</sub> at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
23. If either the NO<sub>x</sub> or CO concentrations corrected to 3% O<sub>2</sub>, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of the performing the notification and testing required by this condition. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
24. 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 and 4306] Federally Enforceable Through Title V Permit
25. The permittee shall maintain records of: (1) the date and time of NO<sub>x</sub>, CO, and O<sub>2</sub> measurements, (2) the O<sub>2</sub> concentration in percent and the measured NO<sub>x</sub> and CO concentrations corrected to 3% O<sub>2</sub>, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
26. 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, and 4306] Federally Enforceable Through Title V Permit
27. ATC S-1246-268-14 shall be implemented prior to or concurrent to this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit

## ATTACHMENT II Location Map

2025 RELEASE UNDER E.O. 14176



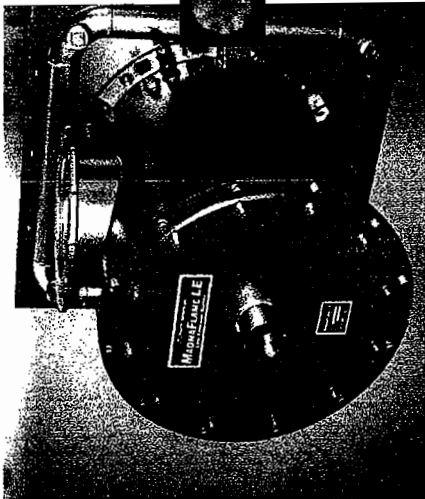
**ATTACHMENT III**  
**Manufacturer's Information on Low NOx Burner**

## The North American Commitment

We continuously provide our customers with innovative solutions for all their combustion needs. Our creative energy and engineering expertise come together to provide the latest in combustion technology - supplying breakthrough new products and solutions that improve your facility's performance - and your bottom line.

We provide our customers with full-service support. End-to-end, we ensure every customer is completely satisfied. From initial consultations through field installation and service, North American provides complete customer support throughout the entire process.

[www.namfg.com](http://www.namfg.com)



CUTTING EMISSIONS  
THROUGH CUTTING EDGE  
TECHNOLOGY

# MAGNA-FLAME™ LE



**North American**  
Manufacturing Company

4455 East 71st Street · Cleveland, OH  
44105-5600 USA  
Tel: 216.271.6000 · Fax: 216.641.7852

© 2002 NAMFC  
216.271.6000 FAX  
216.641.7852



**North American**  
Manufacturing Company



# Breakthrough technology for the ultimate in performance.

## Applications

- ☐ Boilers
- ☐ Process Heaters
- ☐ Incinerators
- ☐ Thermal Fluid Heaters

## Unique Patented Design

The Magna-Flame LE provides the ultimate in emission reduction of NOx, CO, and VOCs. The patented design provides the ability to combust fuel releases up to 2500 million Btu/h

with NOx emissions as low as 20 ppm without FGR. The Magna-Flame LE provides the ultimate in performance.

## Ultra Low NOx without FGR

The Magna-Flame LE uses a lean premix primary flame and dilute secondary combustion to achieve less than 18 ppm (corrected to 3% O<sub>2</sub>) NOx without FGR in many applications.

## Low NOx without sacrificing low CO and VOC's

In many low NOx burners, CO and VOC emissions increase as NOx emissions decrease. The Magna-Flame LE utilizes a lean premix reaction chamber that changes this relationship and minimizes NOx, CO, and VOCs simultaneously.

## Get Even Lower NOx with FGR

When FGR is utilized with the Magna-Flame LE, the NOx emissions can be taken to even lower levels; below 8 ppm (corrected to 3% O<sub>2</sub>), 0.01 lb NOx per MMBtu. (see FIG 1)

## Preheat efficiencies

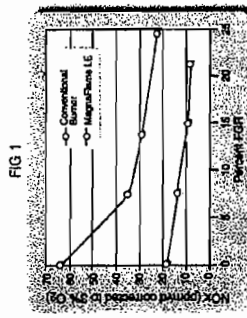
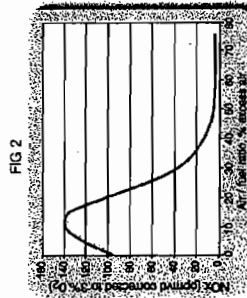
The LE's lean premix technology also provides low NOx with preheated air. As the preheat temperature increases, the primary air / fuel ratio adjusts to maintain consistent NOx emissions.

## How it works

The unique patented design of the Magna-Flame LE uses a method of lean premix combustion with a controlled reaction zone and dilute secondary combustion in the furnace to achieve ultra low burner NOx, CO, and VOC emissions.

## FIG 2 illustrates how the NOx emissions from a premix flame decrease as the amount of excess air is increased. The Magna-Flame LE uses this method to operate at single digit NOx emissions in the reaction chamber.

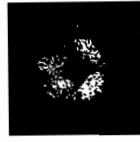
FIG 3 illustrates how the LE establishes a lean premix and then combusts the mixture in the primary reaction zone. The fuel and air are introduced separately into the



## LE Features

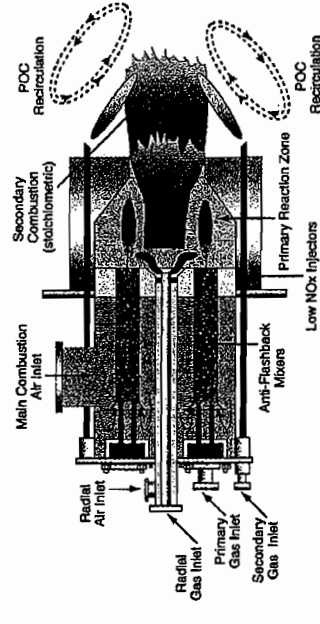
- ☐ < 20 ppm NOx without FGR
- ☐ < 8 ppm, 0.01 lb NOx per MMBtu with FGR
- ☐ Low CO and VOC emissions
- ☐ High intensity, compact flame
- ☐ Sizes from 10 to 250 million Btu/hr
- ☐ Turndown up to 10:1
- ☐ Available from window inserts through packaged systems
- ☐ Patented technology
- ☐ Robust design
- ☐ Plugged and reliable
- ☐ No moving parts

burner, where they are intimately mixed within the anti-flashback mixers. This mixture is then directed into the reaction zone where the lean combustion takes place.



Secondary gas is injected into the furnace where it mixes with furnace gases and the products of combustion from the primary reaction zone. The secondary fuel flow provides near stoichiometric overall ratio for the burner. The entrained oxygen deficient furnace gases are vital to creating a minimal amount of NOx with the secondary jets.

FIG 3 LE - CROSS SECTION





# ATTACHMENT IV Emissions Profiles

www.berypetroleum.com | 1093864 | Berry Petroleum Company | 1093864 | Berry Petroleum Company | 1093864 | Berry Petroleum Company | 1093864 | Berry Petroleum Company | 1093864

Permit #: S-1246-293-7	<b>Last Updated</b>
Facility: BERRY PETROLEUM COMPANY	08/20/2009 EDGEHILR

Equipment Pre-Baselined: NO

	<u>NOX</u>	<u>SOX</u>	<u>PM10</u>	<u>CO</u>	<u>VOC</u>
Potential to Emit (lb/Yr):	5957.0	4393.0	5659.0	26061.0	4095.0
Daily Emis. Limit (lb/Day)	19.7	12.0	15.5	71.4	11.2
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	-521.0	0.0	0.0	0.0	0.0
Q2:	-521.0	0.0	0.0	0.0	0.0
Q3:	-521.0	0.0	0.0	0.0	0.0
Q4:	-521.0	0.0	0.0	0.0	0.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					
Quarterly Offset Amounts (lb/Qtr)					
Q1:					
Q2:					
Q3:					
Q4:					

Permit #: S-1246-292-10	Last Updated
Facility: BERRY PETROLEUM COMPANY	08/20/2009 EDGEHILR

Equipment Pre-Baselined: NO

	<u>NOX</u>	<u>SOX</u>	<u>PM10</u>	<u>CO</u>	<u>VOC</u>
Potential to Emit (lb/Yr):	5957.0	4393.0	5659.0	26061.0	4095.0
Daily Emis. Limit (lb/Day)	19.7	12.0	15.5	71.4	11.2
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	-521.0	0.0	0.0	0.0	0.0
Q2:	-521.0	0.0	0.0	0.0	0.0
Q3:	-521.0	0.0	0.0	0.0	0.0
Q4:	-521.0	0.0	0.0	0.0	0.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					
Quarterly Offset Amounts (lb/Qtr)					
Q1:					
Q2:					
Q3:					
Q4:					

Permit #: S-1246-294-6	Last Updated
Facility: BERRY PETROLEUM COMPANY	08/20/2009 EDGEHILR

Equipment Pre-Baselined: NO

	<u>NOX</u>	<u>SOX</u>	<u>PM10</u>	<u>CO</u>	<u>VOC</u>
Potential to Emit (lb/Yr):	5957.0	2122.0	5659.0	27550.0	4095.0
Daily Emis. Limit (lb/Day)	19.7	12.0	15.5	75.5	11.2
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	-558.0	0.0	0.0	0.0	0.0
Q2:	-558.0	0.0	0.0	0.0	0.0
Q3:	-558.0	0.0	0.0	0.0	0.0
Q4:	-558.0	0.0	0.0	0.0	0.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					
Quarterly Offset Amounts (lb/Qtr)					
Q1:					
Q2:					
Q3:					
Q4:					

Permit #: S-1246-311-3	Last Updated
Facility: BERRY PETROLEUM COMPANY	08/20/2009 EDGEHILR

Equipment Pre-Baselined: NO

	<u>NOX</u>	<u>SOX</u>	<u>PM10</u>	<u>CO</u>	<u>VOC</u>
Potential to Emit (lb/Yr):	5957.0	2122.0	5659.0	19360.0	4095.0
Daily Emis. Limit (lb/Day)	19.0	5.8	15.5	53.0	11.2
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	-521.0	0.0	0.0	0.0	0.0
Q2:	-521.0	0.0	0.0	0.0	0.0
Q3:	-521.0	0.0	0.0	0.0	0.0
Q4:	-521.0	0.0	0.0	0.0	0.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					
Quarterly Offset Amounts (lb/Qtr)					
Q1:					
Q2:					
Q3:					
Q4:					

Permit #: S-1246-314-2	Last Updated
Facility: BERRY PETROLEUM COMPANY	08/20/2009 EDGEHILR

Equipment Pre-Baselined: NO

	<u>NOX</u>	<u>SOX</u>	<u>PM10</u>	<u>CO</u>	<u>VOC</u>
Potential to Emit (lb/Yr):	5957.0	2122.0	5659.0	19360.0	4095.0
Daily Emis. Limit (lb/Day)	19.0	5.8	15.5	53.0	11.2
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	-521.0	0.0	0.0	0.0	0.0
Q2:	-521.0	0.0	0.0	0.0	0.0
Q3:	-521.0	0.0	0.0	0.0	0.0
Q4:	-521.0	0.0	0.0	0.0	0.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					
Quarterly Offset Amounts (lb/Qtr)					
Q1:					
Q2:					
Q3:					
Q4:					

Permit #: S-1246-318-2	Last Updated
Facility: BERRY PETROLEUM COMPANY	08/20/2009 EDGEHILR

Equipment Pre-Baselined: NO

	<u>NOX</u>	<u>SOX</u>	<u>PM10</u>	<u>CO</u>	<u>VOC</u>
Potential to Emit (lb/Yr):	5957.0	2122.0	5659.0	19360.0	4095.0
Daily Emis. Limit (lb/Day)	19.0	5.8	15.5	53.0	11.2
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	-521.0	0.0	0.0	0.0	0.0
Q2:	-521.0	0.0	0.0	0.0	0.0
Q3:	-521.0	0.0	0.0	0.0	0.0
Q4:	-521.0	0.0	0.0	0.0	0.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					
Quarterly Offset Amounts (lb/Qtr)					
Q1:					
Q2:					
Q3:					
Q4:					

Permit #: S-1246-329-0	Last Updated
Facility: BERRY PETROLEUM COMPANY	08/20/2009 EDGEHILR

Equipment Pre-Baselined: NO

	<u>NOX</u>	<u>SOX</u>	<u>PM10</u>	<u>CO</u>	<u>VOC</u>
Potential to Emit (lb/Yr):	5957.0	2122.0	5659.0	19360.0	4095.0
Daily Emis. Limit (lb/Day)	19.7	5.8	15.5	53.0	11.2
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	-521.0	530.0	1414.0	4840.0	1023.0
Q2:	-521.0	530.0	1415.0	4840.0	1024.0
Q3:	-521.0	531.0	1415.0	4840.0	1024.0
Q4:	-521.0	531.0	1415.0	4840.0	1024.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio	1.3	1.5	1.58		1.5
Quarterly Offset Amounts (lb/Qtr)					
Q1:	908.0	1064.0	2239.0		1535.0
Q2:	908.0	1064.0	2239.0		1535.0
Q3:	908.0	1064.0	2239.0		1535.0
Q4:	908.0	1064.0	2239.0		1535.0



Permit #: S-1246-330-0	Last Updated
Facility: BERRY PETROLEUM COMPANY	08/20/2009 EDGEHILR

Equipment Pre-Baselined: NO

	<u>NOX</u>	<u>SOX</u>	<u>PM10</u>	<u>CO</u>	<u>VOC</u>
Potential to Emit (lb/Yr):	5957.0	2122.0	5659.0	19360.0	4095.0
Daily Emis. Limit (lb/Day)	19.7	5.8	15.5	53.0	11.2
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	1489.0	530.0	1414.0	4840.0	1023.0
Q2:	1489.0	530.0	1415.0	4840.0	1024.0
Q3:	1489.0	531.0	1415.0	4840.0	1024.0
Q4:	1490.0	531.0	1415.0	4840.0	1024.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio	1.3	1.5	1.58		1.5
Quarterly Offset Amounts (lb/Qtr)					
Q1:	908.0	1064.0	2239.0		1535.0
Q2:	908.0	1064.0	2239.0		1535.0
Q3:	908.0	1064.0	2239.0		1535.0
Q4:	908.0	1064.0	2239.0		1535.0

Permit #: S-1246-331-0	Last Updated
Facility: BERRY PETROLEUM COMPANY	08/20/2009 EDGEHILR

Equipment Pre-Baselined: NO

	<u>NOX</u>	<u>SOX</u>	<u>PM10</u>	<u>CO</u>	<u>VOC</u>
Potential to Emit (lb/Yr):	5957.0	2122.0	5659.0	19360.0	4095.0
Daily Emis. Limit (lb/Day)	19.7	5.8	15.5	53.0	11.2
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	1489.0	530.0	1414.0	4840.0	1023.0
Q2:	1489.0	530.0	1415.0	4840.0	1024.0
Q3:	1489.0	531.0	1415.0	4840.0	1024.0
Q4:	1490.0	531.0	1415.0	4840.0	1024.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio	1.3	1.5	1.58		1.5
Quarterly Offset Amounts (lb/Qtr)					
Q1:	908.0	1064.0	2239.0		1535.0
Q2:	908.0	1064.0	2239.0		1535.0
Q3:	908.0	1064.0	2239.0		1535.0
Q4:	908.0	1064.0	2239.0		1535.0

Permit #: S-1246-332-0	Last Updated
Facility: BERRY PETROLEUM COMPANY	08/20/2009 EDGEHILR

Equipment Pre-Baselined: NO

	<u>NOX</u>	<u>SOX</u>	<u>PM10</u>	<u>CO</u>	<u>VOC</u>
Potential to Emit (lb/Yr):	5957.0	4989.0	5659.0	19360.0	4095.0
Daily Emis. Limit (lb/Day)	19.7	13.7	15.5	53.0	11.2
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	1489.0	1247.0	1414.0	4840.0	1023.0
Q2:	1489.0	1247.0	1415.0	4840.0	1024.0
Q3:	1489.0	1247.0	1415.0	4840.0	1024.0
Q4:	1490.0	1248.0	1415.0	4840.0	1024.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio	1.3	1.5	1.58		1.5
Quarterly Offset Amounts (lb/Qtr)					
Q1:	908.0	1064.0	2239.0		1535.0
Q2:	908.0	1064.0	2239.0		1535.0
Q3:	908.0	1064.0	2239.0		1535.0
Q4:	908.0	1064.0	2239.0		1535.0

## ATTACHMENT V BACT Analysis

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

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

The District adopted District Rule 4320 on October 16, 2008. The NO<sub>x</sub> 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 greater than 20 MMBtu/hr to 7 ppm @ 3% O<sub>2</sub>. 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<sub>x</sub> emission limit requirement is 5 ppmv @ 3% O<sub>2</sub>. 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. 7 ppmvd @ 3% O<sub>2</sub> - Achieved in Practice.
2. 5 ppmvd @ 3% O<sub>2</sub> 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. 7 ppmvd @ 3% O<sub>2</sub> - Achieved in Practice.
2. 5 ppmvd @ 3% O<sub>2</sub> 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 7 ppmvd NO<sub>x</sub> @ 3% O<sub>2</sub>; therefore, a cost effective analysis is required for the 5 ppmvd NO<sub>x</sub> @ 3% O<sub>2</sub> with Selective Catalytic Reduction option.

**Cost Analysis for 5 ppmv NOx @ 3% O2:**

**Capital Equipment Costs:**

For project N-802, 1092178 (Air Products Manufacturing Corporation) the following costs were provided on June 5, 2009 to purchase and install an SCR system for a 178 MMBtu/hr boiler:

Berry Petroleum Company  
S-1246, 1093864

Description of Cost	Cost Factor	Cost (\$)
<b>Direct Capital Costs (DC):</b>		
Purchased Equip. Cost (PE):		\$650,000
Direct Install. Costs (DI):		\$260,000
Foundation & supports:		
Handling and erection:		
Electrical:		
Piping:		
Insulation:		
Painting:		
DC Total (PE+DI):		\$910,000
<b>Indirect Costs (IC):</b>		
Engineering:		\$182,000
Construction and field expenses:		
Contractor fees:		
Start-up:		
Performance testing:		
Contingencies:		\$163,800
IC Total:		\$345,800
<b>Total Capital Investment (TCI = DC + IC):</b>		<b>\$1,255,800</b>
<b>Direct Annual Costs (DAC):</b>		
	No. of Boilers = 1	hr/yr: 8,760
Operating Costs (O):	10 sched. (hr/day):	7 day/week: wk/yr: 125.1
Operator:	0.5 hr/shift:	operator pay (\$/hr): 39.20
Supervisor:	15% of operator	
Maintenance Costs (M):		
Labor:	0.5 hr/shift:	labor pay (\$/hr): 39.2
Material:	100% % of labor cost:	
Utility Costs:		
Perf. loss:	0.0 (kwh/unit):	
Electricity cost	0.059 (\$/kwh):	Performance loss cost penalty: \$0
Ammonia (lb/hr)	0.2 30.0%	\$0.0675 cost per lb \$373
Catalyst replace:	\$136,000 per boiler	5 yr life \$27,200
Catalyst dispose:	130 ft3	\$15 per ft3 \$390
Total DAC:		\$95,568
<b>Indirect Annual Costs (IAC):</b>		
Overhead:	60% of O&M	\$40,563
Administrative:	0.02 TCI	\$25,116
Insurance:	0.01 TCI	\$12,558
Property tax:	0.01 TCI	\$12,558
Total IAC:		\$90,795
<b>Total Annual Cost (DAC + IAC):</b>		<b>\$186,363</b>

<b>Capital Recovery (CR):</b>			
Capital recovery:	interest rate (%)	10	
	period (years):	10	
			0.1627
			\$204,376
<b>Total Annualized Costs</b>			<b>\$390,739</b>

Because the capital recovery and annual costs of ammonia and catalyst replacement (\$204,376/yr + \$373/yr + \$27,200/yr + \$390/yr = \$232,339) correspond to a larger unit (178 MMBtu/hr) than this project they are adjusted using the "6/10" rule as follows:

$$\begin{aligned}
 \$232,339 \times (85/178)^{0.6} &= \$149,115/\text{yr} \\
 \text{Annualized Operation and Maintenance Costs} &= 3 \times \$21,462 + \$3,219 \\
 &= \$67,605/\text{yr}
 \end{aligned}$$

Indirect annual costs = \$90,795  
 Total annualized cost = \$307,515/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<sub>2</sub> (Low-NOx Burner).

Industry Standard NOx Emissions = 85 MMBtu/hr x 8760 hr/year x 0.018 lb/MMBtu  
 Industry Standard NOx Emissions = 13,403 lb/year

Controlled NOx emissions are based on 5 ppmvd NOx @ 3% O<sub>2</sub> (Equivalent to 0.0061 lb-NOx/MMBtu).

Controlled NOx emissions = 85 MMBtu/hr x 8760 hr/year x 0.0061 lb/MMBtu  
 Controlled NOx emissions = 4,542 lb/year  
 Reduced NOx Emissions = Industry Standard NOx – Controlled NOx  
 Reduced NOx Emissions = (13,403 lb/year – 4,542 lb/year) x 1 ton/2000 lb  
 Reduced NOx Emissions = 4.4 tons/year

Cost of emission reductions for 5 ppmvd NOx SCR System:

Annualized Cost/ton:  $(\$307,515 / \text{yr}) \div (4.4 \text{ tons/yr}) = \$69,890/\text{ton}$

The capital cost of an SCR system exceeds the \$24,500/ton threshold for NOx; therefore, each control technology is **not** cost effective per the District BACT policy.

**Step 5: Select BACT:**

As shown in the previous section, the use of an SCR system capable of 5 ppmvd NOx @ 3% O<sub>2</sub> is not cost effective. The applicant has proposed the next best

control listed in the step 3, 7 ppmvd NO<sub>x</sub> @ 3% O<sub>2</sub>. Therefore, the applicant's proposal meets BACT requirements for NO<sub>x</sub> emissions.

BACT is satisfied by the applicant's proposal to meet a NO<sub>x</sub> limit of 7 ppmvd @ 3% O<sub>2</sub> to be achieved with a Low NO<sub>x</sub> burner and flue gas recirculation (FGR).

#### Top Down BACT Analysis for VOC Emissions:

Step 1 - Identify all control technologies

1. Gaseous fuel - 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. Gaseous fuel - 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 VOC

The use of gaseous fuel (natural gas) is selected as BACT for VOC emissions.

#### Top Down BACT Analysis for PM<sub>10</sub> and SO<sub>x</sub> 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 SO<sub>2</sub> scrubber and either achieving 95% by weight control of sulfur compounds or achieving an emission rate of 30 ppmvd SO<sub>2</sub> at stack O<sub>2</sub> - 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 SO<sub>2</sub> scrubber and either achieving 95% by weight control of sulfur compounds or achieving an emission rate of 30 ppmvd SO<sub>2</sub> at stack O<sub>2</sub> - 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 SO<sub>x</sub> and PM<sub>10</sub>

For the new steam generators BACT is satisfied by the following ATC conditions::

##### S-1246-229 through '-331

12. The unit shall only be fired on PUC-quality natural gas with a maximum sulfur content of 1.0 gr S/100scf. [District Rule 2201] Y

##### S-1246-332

6. Sulfur content of TEOR gas combusted shall be reduced by at least 95% by weight prior to introduction into this unit or shall not exceed 1.0 gr S/100scf. [District Rule 2201] Y

#### Top Down BACT Analysis for CO Emissions:

##### Step 1 - Identify all control technologies

50 ppmv @ 3%O<sub>2</sub> - 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

50 ppmv @ 3%O<sub>2</sub> - 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 CO

Applicant has proposed 35 ppmv CO @ 3% O<sub>2</sub>. Therefore BACT is satisfied for the new steam generators.

# ATTACHMENT VI

## Health Risk Assessment and Ambient Air Quality Analysis

# San Joaquin Valley Air Pollution Control District Risk Management Review

To: Richard Edgehill– Permit Services  
 From: Leland Villalvazo– Technical Services  
 Date: 9/30/09  
 Facility Name: Berry Petroleum  
 Location: Heavy Oil Western  
 Application #(s): S-1246-329-0, 330-0, 331-0, 332-0  
 Project #: S-1093864

## A. RMR SUMMARY

RMR Summary					
Categories	Type of Unit Ethel D	Type of Unit Southwester	Type of Unit Fairfield	Project Totals	Facility Totals
Prioritization Score	NA	NA	NA	NA	>1.0
Acute Hazard Index	0.0	0.01	0.01	0.01	0.14
Chronic Hazard Index	0.0	0.0	0.01	0.01	0.01
Maximum Individual Cancer Risk (10 <sup>-6</sup> )	0.0	0.0	0.0	0.0	0.721
T-BACT Required?	No	No	No		
Special Permit Conditions?	No	No	No		

### Proposed Permit Conditions

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

Unit # 329-0, 330-0, 331-0, 332-0

No special conditions are required.

## B. RMR REPORT

### I. Project Description

Technical Services received a request to perform an Ambient Air Quality Analysis and a Risk Management Review for four new steam generators operating in Heavy Oil Western of Kern County.

## II. Analysis

Technical Services performed modeling for criteria pollutants CO, NO<sub>x</sub>, SO<sub>x</sub> and PM<sub>10</sub>; as well as a RMR. The emission rates used for criteria pollutant modeling were 53.0 lb/day CO, 17.3 lb/day NO<sub>x</sub>, 5.8 lb/day SO<sub>x</sub>, and 15.5 lb/day PM<sub>10</sub>. The engineer supplied the maximum fuel rate for the four new steam generators 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 <sub>x</sub>	Pass	X	X	X	Pass
SO <sub>x</sub>	Pass	Pass	X	Pass	Pass
PM <sub>10</sub>	X	X	X	Pass	Pass

\*Results were taken from the attached PSD spreadsheet.

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

## III. Conclusion

The acute and chronic indices are below 1.0 and the cancer risk associated with the 4 new steam generators are less than 1.0 in a million. **In accordance with the District's Risk Management Policy, the project is approved without Toxic Best Available Control Technology (T-BACT).**

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

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

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

### Attachments:

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

ATTACHMENT VII  
Draft ATCs

San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

ISSUANCE DATE: DRAFT

**DRAFT**

PERMIT NO: S-1246-292-10

LEGAL OWNER OR OPERATOR: BERRY PETROLEUM COMPANY  
MAILING ADDRESS: ATTN: EH&S MANAGER  
5201 TRUXTUN AVENUE SUITE 300  
BAKERSFIELD, CA 93309-0640

LOCATION: HEAVY OIL WESTERN STATIONARY SOURCE  
KERN COUNTY, CA

SECTION: 3 TOWNSHIP: 31S RANGE: 22E

**EQUIPMENT DESCRIPTION:**

MODIFICATION OF 85 MMBTU/HR C.E. NATCO NATURAL/TEOR GAS-FIRED STEAM GENERATOR (MNJ-403) WITH A NORTH AMERICAN ULTRA LOW NOX BURNER, FLUE GAS RECIRCULATION (FGR) AND AN O2 CONTROLLER (SEVERINI LEASE); LOWER NOX EMISSIONS TO 7 PPMV @3% O2 FOR RULE 4320 COMPLIANCE, DELETE DIS # FROM EQUIPMENT DESCRIPTION

**CONDITIONS**

1. {1829} The facility shall submit an application to modify the Title V permit in accordance with the timeframes and procedures of District Rule 2520. [District Rule 2520] Federally Enforceable Through Title V Permit
2. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102] Federally Enforceable Through Title V Permit
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] Federally Enforceable Through Title V Permit
4. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit
5. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
6. Sulfur content of TEOR gas combusted shall be reduced by at least 95% by weight prior to introduction into this unit or shall not exceed 1.0 gr S/100scf. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director APCO

**DRAFT**

DAVID WARNER, Director of Permit Services

S-1246-292-10 : Oct 26 2009 12:47PM - EDGEHLR : Joint Inspection NOT Required

7. Sulfur content of gas combusted in steam generator shall not exceed 2.1 gr S/100scf. [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
8. Except for periods of startup and shutdown, emissions from the natural/TEOR gas-fired unit shall not exceed any of the following limits: 7 ppmvd NO<sub>x</sub> @ 3% O<sub>2</sub> or 0.008 lb-NO<sub>x</sub>/MMBtu, 0.0076 lb-PM<sub>10</sub>/MMBtu, 47 ppmvd CO @ 3% O<sub>2</sub> or 0.035 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
9. Maximum NO<sub>x</sub> emissions from the steam generator, including start-up and shutdown, shall not exceed 19.7 lb-NO<sub>x</sub>/day. [District Rule 2201] Federally Enforceable Through Title V Permit
10. 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, 5.5.6, 4306, 5.3, and 4320] Federally Enforceable Through Title V Permit
11. 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 4306, 3.25 and 3.22, and 4320] Federally Enforceable Through Title V Permit
12. The permittee shall monitor and record the stack concentration of NO<sub>x</sub>, CO, and O<sub>2</sub> at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
13. If either the NO<sub>x</sub> or CO concentrations corrected to 3% O<sub>2</sub>, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of the performing the notification and testing required by this condition. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
14. All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
15. The permittee shall maintain records of: (1) the date and time of NO<sub>x</sub>, CO, and O<sub>2</sub> measurements, (2) the O<sub>2</sub> concentration in percent and the measured NO<sub>x</sub> and CO concentrations corrected to 3% O<sub>2</sub>, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
16. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4306. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

DRAFT  
CONDITIONS CONTINUE ON NEXT PAGE

17. Source testing to measure natural gas-combustion NO<sub>x</sub> and CO emissions from this unit shall be conducted at least once every twelve (12) months. 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] Federally Enforceable Through Title V Permit
18. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
19. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
20. NO<sub>x</sub> emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
21. CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
22. Stack gas oxygen (O<sub>2</sub>) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
23. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
24. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
25. Permittee shall maintain records of the sulfur content and the daily quantity of gas and vapor burned in this steam generator. Compliance with the SO<sub>x</sub> emissions limit shall be demonstrated by calculation, using the sulfur content and quantities of gas and vapor burned. [District Rule 2201] Federally Enforceable Through Title V Permit
26. 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] Federally Enforceable Through Title V Permit
27. ATC shall be implemented concurrently with or subsequent to ATC S-1246-292-8. [District Rule 2201] Federally Enforceable Through Title V Permit

DRAFT



San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

ISSUANCE DATE: DRAFT

**DRAFT**

PERMIT NO: S-1246-293-7

LEGAL OWNER OR OPERATOR: BERRY PETROLEUM COMPANY  
MAILING ADDRESS: ATTN: EH&S MANAGER  
5201 TRUXTUN AVENUE SUITE 300  
BAKERSFIELD, CA 93309-0640

LOCATION: HEAVY OIL WESTERN STATIONARY SOURCE  
KERN COUNTY, CA

SECTION: NW18 TOWNSHIP: 28S RANGE: 21E

**EQUIPMENT DESCRIPTION:**

MODIFICATION OF 85 MMBTU/HR CE NATCO NATURAL/TEOR GAS-FIRED STEAM GENERATOR (MNJ-404) WITH A NORTH AMERICAN MODEL 4231-G-LE MAGNAFLAME ULTRA LOW NOX BURNER, FLUE GAS RECIRCULATION (FGR) AND AN O2 CONTROLLER (PAN FEE LEASE): LOWER NOX EMISSIONS TO 7 PPMV @3% O2 FOR RULE 4320 COMPLIANCE, DELETE DIS # FROM EQUIPMENT DESCRIPTION

**CONDITIONS**

1. {1829} The facility shall submit an application to modify the Title V permit in accordance with the timeframes and procedures of District Rule 2520. [District Rule 2520] Federally Enforceable Through Title V Permit
2. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102] Federally Enforceable Through Title V Permit
3. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit
4. Unit is also approved for operation at the following locations: NE and SE Section 3, T31S, R22E; NE, SE, and SW Section 2, T31S, R22E; Section 11, T31S, 22E; & SE Sections 24, T31S, R22E. [District Rule 4102] Federally Enforceable Through Title V Permit
5. Permittee shall notify the District Compliance Division of each location at which the unit is located in excess of 24 hours. Such notification shall be made no later than 48 hours after starting operation at the location. [District Rule 1070] Federally Enforceable Through Title V Permit

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

DAVID WARNER, Director of Permit Services

S-1246-293-7 : Oct 28 2009 12:47PM - EDGEHILR : Joint Inspection NOT Required

6. The duration of each startup and shutdown period shall not exceed 2.0 hours. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
7. The emission control systems shall be in operation and emissions shall be minimized insofar as technologically feasible during startup and shutdown. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
8. Sulfur content of gas combusted in steam generator shall not exceed 2.1 gr S/100scf. [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
9. Except for periods of startup and shutdown, emissions from the natural/TEOR gas-fired unit shall not exceed any of the following limits: 7 ppmvd NO<sub>x</sub> @ 3% O<sub>2</sub> or 0.008 lb-NO<sub>x</sub>/MMBtu, 0.0076 lb-PM<sub>10</sub>/MMBtu, 47 ppmvd CO @ 3% O<sub>2</sub> or 0.035 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
10. Maximum NO<sub>x</sub> emissions from the steam generator, including start-up and shutdown, shall not exceed 19.7 lb-NO<sub>x</sub>/day. [District Rule 2201] Federally Enforceable Through Title V Permit
11. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
12. Steam generator firebox convection section and all flue gas ductwork shall be maintained to minimize emissions to the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit
13. Sulfur content of TEOR gas combusted shall be reduced by at least 95% by weight prior to introduction into this unit or shall not exceed 1.0 gr S/100scf. [District Rule 2201] Federally Enforceable Through Title V Permit
14. The permittee shall monitor and record the stack concentration of NO<sub>x</sub>, CO, and O<sub>2</sub> at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
15. If either the NO<sub>x</sub> or CO concentrations corrected to 3% O<sub>2</sub>, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of the performing the notification and testing required by this condition. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
16. All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
17. The permittee shall maintain records of: (1) the date and time of NO<sub>x</sub>, CO, and O<sub>2</sub> measurements, (2) the O<sub>2</sub> concentration in percent and the measured NO<sub>x</sub> and CO concentrations corrected to 3% O<sub>2</sub>, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
18. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101] Federally Enforceable Through Title V Permit

DRAFT  
CONDITIONS CONTINUE ON NEXT PAGE

19. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4306. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
20. Source testing to measure natural gas-combustion NOx and CO emissions from this unit shall be conducted at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
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] Federally Enforceable Through Title V Permit
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] Federally Enforceable Through Title V Permit
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] Federally Enforceable Through Title V Permit
24. CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
25. Stack gas oxygen (O2) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
26. 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, stack gas oxygen - EPA Method 3 or 3A or ARB Method 100, PM10 - EPA Method 201A, VOC - EPA methods 18, 25 or 25A [District Rule 1081] Federally Enforceable Through Title V Permit
27. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
28. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
29. {1656} Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following outdated SIP requirements: Rule 401 (Madera, Fresno, Kern, Kings, San Joaquin, Stanislaus, Tulare and Merced), Rule 110 (Fresno, Stanislaus, San Joaquin), Rule 109 (Merced), Rule 113 (Madera), Rule 111 (Kern, Tulare, Kings), and Rule 202 (Fresno, Kern, Tulare, Kings, Madera, Stanislaus, Merced, San Joaquin). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
30. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following applicable requirements: SJVUAPCD Rules 1100, sections 6.1 and 7.0 (12/17/92); 2010, sections 3.0 and 4.0 (12/17/92); 2031 (12/17/92); 2040 (12/17/92); 2070, section 7.0 (12/17/92); 2080 (12/17/92); 4101 (12/17/92); 4601, sections 5.1, 5.2, 5.4, 5.5, 6.1, and 6.2 (10/31/01); 8021 (11/15/01); 8031 (11/15/01); 8061 (11/15/01); A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
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] Federally Enforceable Through Title V Permit
32. ATC shall be implemented concurrently with or subsequent to ATC S-1246-293-5. [District Rule 2201] Federally Enforceable Through Title V Permit

DRAFT

San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

ISSUANCE DATE: DRAFT

**DRAFT**

PERMIT NO: S-1246-294-6

LEGAL OWNER OR OPERATOR: BERRY PETROLEUM COMPANY  
MAILING ADDRESS: ATTN: EH&S MANAGER  
5201 TRUXTUN AVENUE SUITE 300  
BAKERSFIELD, CA 93309-0640

LOCATION: HEAVY OIL WESTERN STATIONARY SOURCE  
KERN COUNTY, CA

SECTION: NW18 TOWNSHIP: 28S RANGE: 21E

**EQUIPMENT DESCRIPTION:**

MODIFICATION OF 85 MMBTU/HR NATURAL GAS-FIRED STEAM GENERATOR (MNJ-405, DIS# 28642-82) WITH A NORTH AMERICAN 4231-G-85-LE ULTRA LOW NOX BURNER, FLUE GAS RECIRCULATION (FGR) AND AN O2 CONTROLLER (SEVERINI LEASE): LOWER NOX EMISSIONS TO 7 PPMV @3% O2 FOR RULE 4320 COMPLIANCE, DELETE DIS # FROM EQUIPMENT DESCRIPTION

**CONDITIONS**

1. {1829} The facility shall submit an application to modify the Title V permit in accordance with the timeframes and procedures of District Rule 2520. [District Rule 2520] Federally Enforceable Through Title V Permit
2. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102] Federally Enforceable Through Title V Permit
3. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit
4. Unit is approved for operation at the following locations: NW Section 18, T28S, R21E; NE and SE Section 3, T31S, R22E; NE, SE, and SW Section 2, T31S, R22E; Section 11, T31S, 22E; & SE Sections 24, T31S, R22E. [District Rule 4102] Federally Enforceable Through Title V Permit
5. Permittee shall notify the District Compliance Division of each location at which the unit is located in excess of 24 hours. Such notification shall be made no later than 48 hours after starting operation at the location. [District Rule 1070] Federally Enforceable Through Title V Permit

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-1246-294-6 : Oct 28 2009 12:47PM -- EDOGHILR : Joint Inspection NOT Required

6. The duration of each startup and shutdown period shall not exceed 2.0 hours. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
7. The emission control systems shall be in operation and emissions shall be minimized insofar as technologically feasible during startup and shutdown. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
8. The unit shall only be fired on PUC-quality natural gas with a maximum sulfur content of 1.0 gr S/100scf. [District Rule 2201] Federally Enforceable Through Title V Permit
9. Except for periods of startup and shutdown, emissions from the natural gas-fired unit shall not exceed any of the following limits: 7 ppmvd NO<sub>x</sub> @ 3% O<sub>2</sub> or 0.008 lb-NO<sub>x</sub>/MMBtu, 0.0076 lb-PM<sub>10</sub>/MMBtu, 50 ppmvd CO @ 3% O<sub>2</sub> or 0.037 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
10. Maximum NO<sub>x</sub> emissions from the steam generator, including start-up and shutdown, shall not exceed 19.7 lb-NO<sub>x</sub>/day. [District Rule 2201] Federally Enforceable Through Title V Permit
11. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
12. The permittee shall monitor and record the stack concentration of NO<sub>x</sub>, CO, and O<sub>2</sub> at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
13. If either the NO<sub>x</sub> or CO concentrations corrected to 3% O<sub>2</sub>, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of the performing the notification and testing required by this condition. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
14. All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
15. The permittee shall maintain records of: (1) the date and time of NO<sub>x</sub>, CO, and O<sub>2</sub> measurements, (2) the O<sub>2</sub> concentration in percent and the measured NO<sub>x</sub> and CO concentrations corrected to 3% O<sub>2</sub>, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
16. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101] Federally Enforceable Through Title V Permit
17. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4306. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

DRAFT  
CONDITIONS CONTINUE ON NEXT PAGE

18. Source testing to measure natural gas-combustion NO<sub>x</sub> and CO emissions from this unit shall be conducted within 60 days of initial start-up. [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
19. Source testing to measure NO<sub>x</sub> and CO emissions from this unit shall be conducted at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
20. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
21. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
22. NO<sub>x</sub> emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
23. CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
24. Stack gas oxygen (O<sub>2</sub>) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
25. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
26. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
27. {1656} Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following outdated SIP requirements: Rule 401 (Madera, Fresno, Kern, Kings, San Joaquin, Stanislaus, Tulare and Merced), Rule 110 (Fresno, Stanislaus, San Joaquin), Rule 109 (Merced), Rule 113 (Madera), Rule 111 (Kern, Tulare, Kings), and Rule 202 (Fresno, Kern, Tulare, Kings, Madera, Stanislaus, Merced, San Joaquin). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
28. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following applicable requirements: SJVUAPCD Rules 1100, sections 6.1 and 7.0 (12/17/92); 2010, sections 3.0 and 4.0 (12/17/92); 2031 (12/17/92); 2040 (12/17/92); 2070, section 7.0 (12/17/92); 2080 (12/17/92); 4101 (12/17/92); 4601, sections 5.1, 5.2, 5.4, 5.5, 6.1, and 6.2 (10/31/01); 8021 (11/15/01); 8031 (11/15/01); 8061 (11/15/01); A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
29. Daily records of start-up and shutdown durations and number of occurrences of each shall be maintained. [District Rule 2201] Federally Enforceable Through Title V Permit
30. 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] Federally Enforceable Through Title V Permit
31. ATC shall be implemented concurrently with or subsequent to ATC S-1246-294-4. [District Rule 2201] Federally Enforceable Through Title V Permit

DRAFT

San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

**DRAFT**  
ISSUANCE DATE: DRAFT

PERMIT NO: S-1246-311-3

LEGAL OWNER OR OPERATOR: BERRY PETROLEUM COMPANY  
MAILING ADDRESS: ATTN: EH&S MANAGER  
5201 TRUXTUN AVENUE SUITE 300  
BAKERSFIELD, CA 93309-0640

LOCATION: HEAVY OIL WESTERN STATIONARY SOURCE  
KERN COUNTY, CA

SECTION: 3 TOWNSHIP: 31S RANGE: 22E

**EQUIPMENT DESCRIPTION:**

MODIFICATION OF 85 MMBTU/HR NATURAL GAS-FIRED STEAM GENERATOR (MNJ-406) WITH A NORTH AMERICAN ULTRA LOW NOX BURNER, FLUE GAS RECIRCULATION (FGR) AND AN O2 CONTROLLER (SOUTHWESTERN LEASE): LOWER NOX EMISSIONS TO 7 PPMV @3% O2 FOR RULE 4320 COMPLIANCE, DELETE DIS # FROM EQUIPMENT DESCRIPTION

**CONDITIONS**

1. Particulate matter emissions from any combustion source shall not exceed 0.1 grains/dscf (calculated to 12% carbon dioxide). [District Rules 4201 and 4301] Federally Enforceable Through Title V Permit
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 NSR Rule] Federally Enforceable Through Title V Permit
3. This unit shall only be fired on PUC-quality natural gas with a sulfur content not exceeding 1.0 gr S/100scf.. [District NSR Rule] Federally Enforceable Through Title V Permit
4. 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, 0.0076 lb-PM10/MMBtu, 35 ppmvd CO @ 3% O2 or 0.026 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu [District NSR Rule, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
5. Maximum NOx emissions from the steam generator, including start-up and shutdown, shall not exceed 19.7 lb-NOx/day. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director APCO

**DRAFT**

DAVID WARNER, Director of Permit Services  
S-1246-311-3 : Oct 28 2008 12:47PM - EDGEHILR : Joint Inspection NOT Required

6. Source testing to measure natural gas-combustion NOx and CO emissions from this unit shall be conducted within 60 days of initial start-up. [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
7. Source testing to measure NOx and CO emissions from this unit while fired on natural gas shall be conducted at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
8. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
9. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
10. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4306. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
11. NOx emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
12. CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
13. Stack gas oxygen (O2) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
14. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
15. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
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] Federally Enforceable Through Title V Permit
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 the performing the notification and testing required by this condition. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

DRAFT

CONDITIONS CONTINUE ON NEXT PAGE



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] Federally Enforceable Through Title V Permit
19. The permittee shall maintain records of: (1) the date and time of NO<sub>x</sub>, CO, and O<sub>2</sub> measurements, (2) the O<sub>2</sub> concentration in percent and the measured NO<sub>x</sub> and CO concentrations corrected to 3% O<sub>2</sub>, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
20. 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] Federally Enforceable Through Title V Permit
21. ATC shall be implemented concurrently with or subsequent to ATC S-1246-311-2. [District Rule 2201] Federally Enforceable Through Title V Permit

DRAFT

San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

**ISSUANCE DATE: DRAFT**  
**DRAFT**

**PERMIT NO:** S-1246-314-2

**LEGAL OWNER OR OPERATOR:** BERRY PETROLEUM COMPANY  
**MAILING ADDRESS:** ATTN: EH&S MANAGER  
5201 TRUXTUN AVENUE SUITE 300  
BAKERSFIELD, CA 93309-0640

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

**SECTION: 2 TOWNSHIP: 31S RANGE: 22E**

**EQUIPMENT DESCRIPTION:**

MODIFICATION OF 85 MMBTU/HR NATURAL GAS-FIRED STEAM GENERATOR (MNJ-408) WITH A NORTH AMERICAN ULTRA LOW NOX BURNER, FLUE GAS RECIRCULATION (FGR) AND AN O2 CONTROLLER (SOUTHWESTERN LEASE): LOWER NOX EMISSIONS TO 7 PPMV @3% O2 FOR RULE 4320 COMPLIANCE

**CONDITIONS**

1. {1829} The facility shall submit an application to modify the Title V permit in accordance with the timeframes and procedures of District Rule 2520. [District Rule 2520] Federally Enforceable Through Title V Permit
2. Particulate matter emissions from any combustion source shall not exceed 0.1 grains/dscf (calculated to 12% carbon dioxide). [District Rules 4201 and 4301] Federally Enforceable Through Title V Permit
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] Federally Enforceable Through Title V Permit
4. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
5. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit
6. This unit shall only be fired on PUC-quality natural gas with a sulfur content not exceeding 1.0 gr S/100scf.. [District NSR Rule] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director APCO

**DRAFT**

DAVID WARNER, Director of Permit Services

S-1246-314-2; Oct 26 2009 12:47PM - EDGEHILL : Joint Inspection NOT Required

7. Except for periods of startup and shutdown, emissions from the natural gas-fired unit shall not exceed any of the following limits: 7 ppmvd NO<sub>x</sub> @ 3% O<sub>2</sub> or 0.008 lb-NO<sub>x</sub>/MMBtu, 0.0076 lb-PM<sub>10</sub>/MMBtu, 35 ppmvd CO @ 3% O<sub>2</sub> or 0.026 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu [District NSR Rule, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
8. Maximum NO<sub>x</sub> emissions from the steam generator, including start-up and shutdown, shall not exceed 19.7 lb-NO<sub>x</sub>/day. [District Rule 2201] Federally Enforceable Through Title V Permit
9. Source testing to measure NO<sub>x</sub> and CO emissions from this unit while fired on natural gas shall be conducted within 60 days of initial start-up. [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
10. Source testing to measure NO<sub>x</sub> and CO emissions from this unit while fired on natural gas shall be conducted at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
11. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
12. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
13. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4306. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
14. NO<sub>x</sub> emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
15. CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
16. Stack gas oxygen (O<sub>2</sub>) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
17. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
18. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
19. The permittee shall monitor and record the stack concentration of NO<sub>x</sub>, CO, and O<sub>2</sub> at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

**DRAFT**  
CONDITIONS CONTINUE ON NEXT PAGE

20. If either the NO<sub>x</sub> or CO concentrations corrected to 3% O<sub>2</sub>, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of the performing the notification and testing required by this condition. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
21. All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
22. The permittee shall maintain records of: (1) the date and time of NO<sub>x</sub>, CO, and O<sub>2</sub> measurements, (2) the O<sub>2</sub> concentration in percent and the measured NO<sub>x</sub> and CO concentrations corrected to 3% O<sub>2</sub>, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
23. 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] Federally Enforceable Through Title V Permit
24. ATC shall be implemented concurrently with or subsequent to ATC S-1246-314-0. [District Rule 2201] Federally Enforceable Through Title V Permit

DRAFT

San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

ISSUANCE DATE: DRAFT

**DRAFT**

PERMIT NO: S-1246-318-2

LEGAL OWNER OR OPERATOR: BERRY PETROLEUM COMPANY  
MAILING ADDRESS: ATTN: EH&S MANAGER  
5201 TRUXTUN AVENUE SUITE 300  
BAKERSFIELD, CA 93309-0640

LOCATION: HEAVY OIL WESTERN STATIONARY SOURCE  
KERN COUNTY, CA

SECTION: SE 3 TOWNSHIP: 31S RANGE: 22E

**EQUIPMENT DESCRIPTION:**

MODIFICATION OF 85 MMBTU/HR NATURAL GAS-FIRED STEAM GENERATOR (MNJ-409) WITH A NORTH AMERICAN ULTRA LOW NOX BURNER, FLUE GAS RECIRCULATION (FGR) AND AN O2 CONTROLLER (SEVERINI LEASE): LOWER NOX EMISSIONS TO 7 PPMV @3% O2 FOR RULE 4320 COMPLIANCE

**CONDITIONS**

1. Particulate matter emissions from any combustion source shall not exceed 0.1 grains/dscf (calculated to 12% carbon dioxide). [District Rules 4201 and 4301] Federally Enforceable Through Title V Permit
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] Federally Enforceable Through Title V Permit
3. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
4. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit
5. This unit shall only be fired on PUC-quality natural gas with a sulfur content not exceeding 1.0 gr S/100scf.. [District NSR Rule] Federally Enforceable Through Title V Permit
6. 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, 0.0076 lb-PM10/MMBtu, 35 ppmvd CO @ 3% O2 or 0.026 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu [District NSR Rule, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director APCO

DAVID WARNER, Director of Permit Services

S-1246-318-2 : Oct 26 2009 12:47PM - EDGEHILL : Joint Inspection NOT Required

7. Maximum NOx emissions from the steam generator, including start-up and shutdown, shall not exceed 19.7 lb-NOx/day. [District Rule 2201] Federally Enforceable Through Title V Permit
8. Source testing to measure natural gas-combustion NOx and CO emissions from this unit shall be conducted within 60 days of initial start-up. [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
9. Source testing to measure NOx and CO emissions from this unit while fired on natural gas shall be conducted at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
10. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
11. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
12. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4306. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
13. NOx emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
14. CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
15. Stack gas oxygen (O2) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
16. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
17. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
18. The permittee shall monitor and record the stack concentration of NOx, CO, and O2 at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
19. If either the NOx or CO concentrations corrected to 3% O2, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of the performing the notification and testing required by this condition. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

**DRAFT**  
CONDITIONS CONTINUE ON NEXT PAGE

20. All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
21. The permittee shall maintain records of: (1) the date and time of NO<sub>x</sub>, CO, and O<sub>2</sub> measurements, (2) the O<sub>2</sub> concentration in percent and the measured NO<sub>x</sub> and CO concentrations corrected to 3% O<sub>2</sub>, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
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 1070, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
23. ATC shall be implemented concurrently with or subsequent to ATC S-1246-318-1. [District Rule 2201] Federally Enforceable Through Title V Permit

DRAFT

San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

**DRAFT**  
ISSUANCE DATE: DRAFT

**PERMIT NO:** S-1246-329-0

**LEGAL OWNER OR OPERATOR:** BERRY PETROLEUM COMPANY  
**MAILING ADDRESS:** ATTN: EH&S MANAGER  
5201 TRUXTUN AVENUE SUITE 300  
BAKERSFIELD, CA 93309-0640

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

**SECTION:** SE 2 **TOWNSHIP:** 31S **RANGE:** 22E

**EQUIPMENT DESCRIPTION:**

85 MMBTU/HR NATURAL GAS-FIRED STEAM GENERATOR (MNJ-413) WITH A NORTH AMERICAN MAGNA FLAME LE ULTRA LOW NOX BURNER (OR EQUIVALENT), FLUE GAS RECIRCULATION (FGR) AND AN O2 CONTROLLER (VARIOUS SPECIFIED LOCATIONS)

**CONDITIONS**

1. {1829} The facility shall submit an application to modify the Title V permit in accordance with the timeframes and procedures of District Rule 2520. [District Rule 2520] Federally Enforceable Through Title V Permit
2. The permittee shall obtain written District approval for the use of any equivalent equipment not specifically approved by this Authority to Construct. Approval of the equivalent equipment shall be made only after the District's determination that the submitted design and performance of the proposed alternate equipment is equivalent to the specifically authorized equipment. [District Rule 2201] Federally Enforceable Through Title V Permit
3. The permittee's request for approval of equivalent equipment shall include the make, model, manufacturer's maximum rating, manufacturer's guaranteed emission rates, equipment drawing(s), and operational characteristics/parameters. [District Rule 2010] Federally Enforceable Through Title V Permit
4. Alternate equipment shall be of the same class and category of source as the equipment authorized by the Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
5. No emission factor and no emission shall be greater for the alternate equipment than for the proposed equipment. No changes in the hours of operation, operating rate, throughput, or firing rate may be authorized for any alternate equipment. [District Rule 2201] Federally Enforceable Through Title V Permit

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-1246-329-0 : Oct 26 2008 4:48PM -- EDGEHILR : Joint Inspection NOT Required



6. Unit is approved for operation only at SE Section 2, T31S, R22E and NW Section 11, T31S, R22E. [District Rule 4102] Federally Enforceable Through Title V Permit
7. Permittee shall notify the District Compliance Division of each location at which the unit is located in excess of 24 hours. Such notification shall be made no later than 48 hours after starting operation at the location. [District Rule 1070] Federally Enforceable Through Title V Permit
8. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit
9. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102] Federally Enforceable Through Title V Permit
10. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101] Federally Enforceable Through Title V Permit
11. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
12. The unit shall only be fired on PUC-quality natural gas with a maximum sulfur content of 1.0 gr S/100scf. [District Rule 2201] Federally Enforceable Through Title V Permit
13. 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, 0.0076 lb-PM10/MMBtu, 35 ppmvd CO @ 3% O2 or 0.026 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
14. Maximum NOx emissions from the steam generator, including start-up and shutdown, shall not exceed 19.7 lb-NOx/day. [District Rule 2201] Federally Enforceable Through Title V Permit
15. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4306. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
16. Permittee shall submit notification to the District of the date of construction, anticipated startup, and actual startup. Notifications shall be postmarked no later than 30 days after construction and 15 days after actual startup. The notifications shall include the design heat input and identification of fuels for this permit unit. [40 CFR 60.48c(a)] Federally Enforceable Through Title V Permit
17. Source testing to measure NOx and CO emissions from this unit while fired on natural gas shall be conducted within 60 days of initial start-up. [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
18. Source testing to measure NOx and CO emissions from this unit while fired on natural gas shall be conducted at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
19. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
20. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
21. NOx emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

DRAFT  
CONDITIONS CONTINUE ON NEXT PAGE

22. CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
23. Stack gas oxygen (O<sub>2</sub>) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
24. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
25. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
26. The permittee shall monitor and record the stack concentration of NO<sub>x</sub>, CO, and O<sub>2</sub> at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
27. If either the NO<sub>x</sub> or CO concentrations corrected to 3% O<sub>2</sub>, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of the performing the notification and testing required by this condition. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
28. All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
29. The permittee shall maintain records of: (1) the date and time of NO<sub>x</sub>, CO, and O<sub>2</sub> measurements, (2) the O<sub>2</sub> concentration in percent and the measured NO<sub>x</sub> and CO concentrations corrected to 3% O<sub>2</sub>, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
30. 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] Federally Enforceable Through Title V Permit
31. Prior to operating under this Authority to Construct, permittee shall surrender emission reduction credits for the following quantities of emissions: NO<sub>x</sub>: 698 lb/quarter; SO<sub>x</sub>: 710 lb/quarter, PM<sub>10</sub>: 1415 lb/quarter, and VOC: 1,024 lb/quarter. Offset shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 9/21/2006). [District Rule 2201] Federally Enforceable Through Title V Permit
32. ERC Certificate Numbers C-787-1, C-862-1, C-970-1, N-647-1, N-648-1, N-649-1, N-666-1, N-668-1, N-808-1, N-813-1, N-814-1, S-3195-1, S-3017-2, S-3018-2, N-806-5, N-807-5, S-3024-5, S-3026-5, and S-3192-5 (or a certificate split from this certificate) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit

DRAFT  
CONDITIONS CONTINUE ON NEXT PAGE

33. ATC shall be implemented concurrently with or subsequent to ATCs S-1246-292-10, '-293-7, '-294-6, '-311-3, '-314-2 and '-318-2. [District Rule 2201] Federally Enforceable Through Title V Permit

**DRAFT**

San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

ISSUANCE DATE: DRAFT

**DRAFT**

**PERMIT NO:** S-1246-330-0

**LEGAL OWNER OR OPERATOR:** BERRY PETROLEUM COMPANY  
**MAILING ADDRESS:** ATTN: EH&S MANAGER  
5201 TRUXTUN AVENUE SUITE 300  
BAKERSFIELD, CA 93309-0640

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

**SECTION:** SE 2 **TOWNSHIP:** 31S **RANGE:** 22E

**EQUIPMENT DESCRIPTION:**

85 MMBTU/HR NATURAL GAS-FIRED STEAM GENERATOR (MNJ-414) WITH A NORTH AMERICAN MAGNA FLAME LE ULTRA LOW NOX BURNER (OR EQUIVALENT), FLUE GAS RECIRCULATION (FGR) AND AN O2 CONTROLLER (VARIOUS SPECIFIED LOCATIONS)

**CONDITIONS**

1. {1829} The facility shall submit an application to modify the Title V permit in accordance with the timeframes and procedures of District Rule 2520. [District Rule 2520] Federally Enforceable Through Title V Permit
2. The permittee shall obtain written District approval for the use of any equivalent equipment not specifically approved by this Authority to Construct. Approval of the equivalent equipment shall be made only after the District's determination that the submitted design and performance of the proposed alternate equipment is equivalent to the specifically authorized equipment. [District Rule 2201] Federally Enforceable Through Title V Permit
3. The permittee's request for approval of equivalent equipment shall include the make, model, manufacturer's maximum rating, manufacturer's guaranteed emission rates, equipment drawing(s), and operational characteristics/parameters. [District Rule 2010] Federally Enforceable Through Title V Permit
4. Alternate equipment shall be of the same class and category of source as the equipment authorized by the Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
5. No emission factor and no emission shall be greater for the alternate equipment than for the proposed equipment. No changes in the hours of operation, operating rate, throughput, or firing rate may be authorized for any alternate equipment. [District Rule 2201] Federally Enforceable Through Title V Permit

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-1246-330-0, Oct 20 2009 4:40PM - EDGEHILL : Joint Inspection NOT Required

6. Unit is approved for operation only at SE Section 2, T31S, R22E and NW Section 11, T31S, R22E. [District Rule 4102] Federally Enforceable Through Title V Permit
7. Permittee shall notify the District Compliance Division of each location at which the unit is located in excess of 24 hours. Such notification shall be made no later than 48 hours after starting operation at the location. [District Rule 1070] Federally Enforceable Through Title V Permit
8. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit
9. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102] Federally Enforceable Through Title V Permit
10. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101] Federally Enforceable Through Title V Permit
11. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
12. The unit shall only be fired on PUC-quality natural gas with a maximum sulfur content of 1.0 gr S/100scf. [District Rule 2201] Federally Enforceable Through Title V Permit
13. Except for [periods of startup and shutdown, emissions from the natural gas-fired unit shall not exceed any of the following limits: 7 ppmvd NO<sub>x</sub> @ 3% O<sub>2</sub> or 0.008 lb-NO<sub>x</sub>/MMBtu, 0.0076 lb-PM<sub>10</sub>/MMBtu, 35 ppmvd CO @ 3% O<sub>2</sub> or 0.026 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
14. Maximum NO<sub>x</sub> emissions from the steam generator, including start-up and shutdown, shall not exceed 19.7 lb-NO<sub>x</sub>/day. [District Rule 2201] Federally Enforceable Through Title V Permit
15. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4306. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
16. Permittee shall submit notification to the District of the date of construction, anticipated startup, and actual startup. Notifications shall be postmarked no later than 30 days after construction and 15 days after actual startup. The notifications shall include the design heat input and identification of fuels for this permit unit. [40 CFR 60.48c(a)] Federally Enforceable Through Title V Permit
17. Source testing to measure NO<sub>x</sub> and CO emissions from this unit while fired on natural gas shall be conducted within 60 days of initial start-up. [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
18. Source testing to measure NO<sub>x</sub> and CO emissions from this unit while fired on natural gas shall be conducted at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
19. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
20. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
21. NO<sub>x</sub> emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

DRAFT  
CONDITIONS CONTINUE ON NEXT PAGE

22. CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
23. Stack gas oxygen (O<sub>2</sub>) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
24. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
25. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
26. The permittee shall monitor and record the stack concentration of NO<sub>x</sub>, CO, and O<sub>2</sub> at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
27. If either the NO<sub>x</sub> or CO concentrations corrected to 3% O<sub>2</sub>, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of the performing the notification and testing required by this condition. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
28. All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
29. The permittee shall maintain records of: (1) the date and time of NO<sub>x</sub>, CO, and O<sub>2</sub> measurements, (2) the O<sub>2</sub> concentration in percent and the measured NO<sub>x</sub> and CO concentrations corrected to 3% O<sub>2</sub>, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
30. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, 4306, 4320, and 40 CFR 60.48c(i)] Federally Enforceable Through Title V Permit
31. Prior to operating under this Authority to Construct, permittee shall surrender emission reduction credits for the following quantities of emissions: NO<sub>x</sub>: 698 lb/quarter; SO<sub>x</sub>: 710 lb/quarter, PM<sub>10</sub>: 1,415 lb/quarter, and VOC: 1,024 lb/quarter. Offset shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 9/21/2006). [District Rule 2201] Federally Enforceable Through Title V Permit
32. ERC Certificate Numbers C-787-1, C-862-1, C-970-1, N-647-1, N-648-1, N-649-1, N-666-1, N-668-1, N-808-1, N-813-1, N-814-1, S-3195-1, S-3017-2, S-3018-2, N-806-5, N-807-5, S-3024-5, S-3026-5, and S-3192-5 (or a certificate split from this certificate) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit

DRAFT  
CONDITIONS CONTINUE ON NEXT PAGE

33. ATC shall be implemented concurrently with or subsequent to ATCs S-1246-292-10, '-293-7, '-294-6, '-311-3, '-314-2 and '-318-2. [District Rule] Federally Enforceable Through Title V Permit

**DRAFT**

San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

ISSUANCE DATE: DRAFT  
**DRAFT**

**PERMIT NO:** S-1246-331-0

**LEGAL OWNER OR OPERATOR:** BERRY PETROLEUM COMPANY  
**MAILING ADDRESS:** ATTN: EH&S MANAGER  
5201 TRUXTUN AVENUE SUITE 300  
BAKERSFIELD, CA 93309-0640

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

**SECTION:** SE 2 **TOWNSHIP:** 31S **RANGE:** 22E

**EQUIPMENT DESCRIPTION:**

85 MMBTU/HR NATURAL GAS-FIRED STEAM GENERATOR (MNJ-415) WITH A NORTH AMERICAN MAGNA FLAME LE ULTRA LOW NOX BURNER (OR EQUIVALENT), FLUE GAS RECIRCULATION (FGR) AND AN O2 CONTROLLER (VARIOUS SPECIFIED LOCATIONS)

**CONDITIONS**

1. {1829} The facility shall submit an application to modify the Title V permit in accordance with the timeframes and procedures of District Rule 2520. [District Rule 2520] Federally Enforceable Through Title V Permit
2. The permittee shall obtain written District approval for the use of any equivalent equipment not specifically approved by this Authority to Construct. Approval of the equivalent equipment shall be made only after the District's determination that the submitted design and performance of the proposed alternate equipment is equivalent to the specifically authorized equipment. [District Rule 2201] Federally Enforceable Through Title V Permit
3. The permittee's request for approval of equivalent equipment shall include the make, model, manufacturer's maximum rating, manufacturer's guaranteed emission rates, equipment drawing(s), and operational characteristics/parameters. [District Rule 2010] Federally Enforceable Through Title V Permit
4. Alternate equipment shall be of the same class and category of source as the equipment authorized by the Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
5. No emission factor and no emission shall be greater for the alternate equipment than for the proposed equipment. No changes in the hours of operation, operating rate, throughput, or firing rate may be authorized for any alternate equipment. [District Rule 2201] Federally Enforceable Through Title V Permit

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-1246-331-0 : Oct 28 2009 4:46PM - EDGEHILL : Joint Inspection NOT Required



6. Unit is approved for operation only at SE Section 2, T31S, R22E and NW Section 11, T31S, R22E. [District Rule 4102] Federally Enforceable Through Title V Permit
7. Permittee shall notify the District Compliance Division of each location at which the unit is located in excess of 24 hours. Such notification shall be made no later than 48 hours after starting operation at the location. [District Rule 1070] Federally Enforceable Through Title V Permit
8. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit
9. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102] Federally Enforceable Through Title V Permit
10. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101] Federally Enforceable Through Title V Permit
11. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
12. The unit shall only be fired on PUC-quality natural gas with a maximum sulfur content of 1.0 gr S/100scf. [District Rule 2201] Federally Enforceable Through Title V Permit
13. Except for periods of startup and shutdown, emissions from the natural gas-fired unit shall not exceed any of the following limits: 7 ppmvd NO<sub>x</sub> @ 3% O<sub>2</sub> or 0.008 lb-NO<sub>x</sub>/MMBtu, 0.0076 lb-PM<sub>10</sub>/MMBtu, 35 ppmvd CO @ 3% O<sub>2</sub> or 0.026 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4305, and 4306] Federally Enforceable Through Title V Permit
14. Maximum emissions from the steam generator, including start-up and shutdown, shall not exceed any of the following limits: 19.7 lb-NO<sub>x</sub>/day, or 131.2 lb-CO/day. [District Rule 2201] Federally Enforceable Through Title V Permit
15. 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] Federally Enforceable Through Title V Permit
16. Permittee shall submit notification to the District of the date of construction, anticipated startup, and actual startup. Notifications shall be postmarked no later than 30 days after construction and 15 days after actual startup. The notifications shall include the design heat input and identification of fuels for this permit unit. [40 CFR 60.48c(a)] Federally Enforceable Through Title V Permit
17. Source testing to measure NO<sub>x</sub> and CO emissions from this unit while fired on natural gas shall be conducted within 60 days of initial start-up. [District Rules 2201, 4305, and 4306] Federally Enforceable Through Title V Permit
18. Source testing to measure NO<sub>x</sub> and CO emissions from this unit while fired on natural gas shall be conducted at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
19. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
20. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
21. NO<sub>x</sub> emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit

**DRAFT**  
CONDITIONS CONTINUE ON NEXT PAGE

22. CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
23. Stack gas oxygen (O<sub>2</sub>) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
24. 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 and 4306] Federally Enforceable Through Title V Permit
25. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
26. The permittee shall monitor and record the stack concentration of NO<sub>x</sub>, CO, and O<sub>2</sub> at least once every month (in which a source test is not performed) using a portable 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 and 4306] Federally Enforceable Through Title V Permit
27. If either the NO<sub>x</sub> or CO concentrations corrected to 3% O<sub>2</sub>, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of the performing the notification and testing required by this condition. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
28. 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 and 4306] Federally Enforceable Through Title V Permit
29. The permittee shall maintain records of: (1) the date and time of NO<sub>x</sub>, CO, and O<sub>2</sub> measurements, (2) the O<sub>2</sub> concentration in percent and the measured NO<sub>x</sub> and CO concentrations corrected to 3% O<sub>2</sub>, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
30. 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 40 CFR 60.48c(i)] Federally Enforceable Through Title V Permit
31. Prior to operating under this Authority to Construct, permittee shall surrender emission reduction credits for the following quantities of emissions: NO<sub>x</sub>: 698 lb/quarter; SO<sub>x</sub>: 710 lb/quarter, PM<sub>10</sub>: 1,415 lb/quarter, and VOC: 1,024 lb/quarter. Offset shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 9/21/2006). [District Rule 2201] Federally Enforceable Through Title V Permit
32. ERC Certificate Numbers C-787-1, C-862-1, C-970-1, N-647-1, N-648-1, N-649-1, N-666-1, N-668-1, N-808-1, N-813-1, N-814-1, S-3195-1, S-3017-2, S-3018-2, N-806-5, N-807-5, S-3024-5, S-3026-5, and S-3192-5 (or a certificate split from this certificate) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
33. ATC shall be implemented concurrently with or subsequent to ATCs S-1246-292-10, '-293-7, '-294-6, '-311-3, '-314-2 and '-318-2. [District Rule] Federally Enforceable Through Title V Permit

San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

ISSUANCE DATE: DRAFT

**DRAFT**

PERMIT NO: S-1246-332-0

LEGAL OWNER OR OPERATOR: BERRY PETROLEUM COMPANY  
MAILING ADDRESS: ATTN: EH&S MANAGER  
5201 TRUXTUN AVENUE SUITE 300  
BAKERSFIELD, CA 93309-0640

LOCATION: HEAVY OIL WESTERN STATIONARY SOURCE  
KERN COUNTY, CA

SECTION: SE36 TOWNSHIP: T12N RANGE: R24W

**EQUIPMENT DESCRIPTION:**

85 MMBTU/HR NATURAL/TEOR/TVR GAS-FIRED STEAM GENERATOR (ED-J430) WITH A NORTH AMERICAN MAGNA FLAME LE ULTRA LOW NOX BURNER (OR EQUIVALENT), FLUE GAS RECIRCULATION (FGR) AND AN O2 CONTROLLER (ETHEL D LEASE)

**CONDITIONS**

1. {1829} The facility shall submit an application to modify the Title V permit in accordance with the timeframes and procedures of District Rule 2520. [District Rule 2520] Federally Enforceable Through Title V Permit
2. The permittee shall obtain written District approval for the use of any equivalent equipment not specifically approved by this Authority to Construct. Approval of the equivalent equipment shall be made only after the District's determination that the submitted design and performance of the proposed alternate equipment is equivalent to the specifically authorized equipment. [District Rule 2201] Federally Enforceable Through Title V Permit
3. The permittee's request for approval of equivalent equipment shall include the make, model, manufacturer's maximum rating, manufacturer's guaranteed emission rates, equipment drawing(s), and operational characteristics/parameters. [District Rule 2010] Federally Enforceable Through Title V Permit
4. Alternate equipment shall be of the same class and category of source as the equipment authorized by the Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
5. No emission factor and no emission shall be greater for the alternate equipment than for the proposed equipment. No changes in the hours of operation, operating rate, throughput, or firing rate may be authorized for any alternate equipment. [District Rule 2201] Federally Enforceable Through Title V Permit

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

DAVID WARNER, Director of Permit Services

S-1246-332-0 : Oct 28 2009 4:46PM -- EDGEHILR : Joint Inspection NOT Required

6. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102] Federally Enforceable Through Title V Permit
7. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101] Federally Enforceable Through Title V Permit
8. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
9. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Sulfur content of TEOR gas combusted shall be reduced by at least 95% by weight prior to introduction into this unit or shall not exceed 1.0 gr S/100scf. [District Rule 2201] Federally Enforceable Through Title V Permit
11. Sulfur removal equipment shall be installed as necessary to ensure that gaseous fuels combusted in steam generator contain no more than 2.35 gr S/100 scf. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
12. Permittee shall determine sulfur content of combusted gas weekly for eight consecutive weeks. After demonstrating compliance for eight consecutive weeks testing may be conducted on a quarterly basis. Weekly sulfur testing shall resume if quarterly testing does not indicate compliance. Weekly gas analysis shall be performed using Draeger tubes and quarterly analysis using ASTM method D3246 or double GC for H<sub>2</sub>S and mercaptans. First of the weekly gas analyses shall be done using laboratory analysis. [District Rules 1081 and 2201] Federally Enforceable Through Title V Permit
13. Compliance with fuel sulfur limit(s) can be demonstrated either by monitoring sulfur content at location(s) after all fuel sources are combined prior to incineration, or by monitoring the sulfur content and volume of each fuel source and performing mass balance calculations. Records of monitoring locations, detected sulfur concentrations, and mass balance calculations, if necessary, shall be maintained and kept onsite and made readily available for District inspection upon request. [District Rules 1081 and 2201] Federally Enforceable Through Title V Permit
14. Except during startup and shutdown, emissions from the natural gas-fired unit shall not exceed any of the following limits: 7 ppmvd NO<sub>x</sub> @ 3% O<sub>2</sub> or 0.008 lb-NO<sub>x</sub>/MMBtu, 0.0076 lb-PM<sub>10</sub>/MMBtu, 35 ppmvd CO @ 3% O<sub>2</sub> or 0.026 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
15. Maximum NO<sub>x</sub> emissions from the steam generator, including start-up and shutdown, shall not exceed 19.7 lb-NO<sub>x</sub>/day. [District Rule 2201] Federally Enforceable Through Title V Permit
16. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4306. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
17. Permittee shall submit notification to the District of the date of construction, anticipated startup, and actual startup. Notifications shall be postmarked no later than 30 days after construction and 15 days after actual startup. The notifications shall include the design heat input and identification of fuels for this permit unit. [40 CFR 60.48c(a)] Federally Enforceable Through Title V Permit
18. Source testing to measure NO<sub>x</sub> and CO emissions from this unit shall be conducted within 60 days of initial start-up. [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
19. Source testing to measure NO<sub>x</sub> and CO emissions from this unit while fired on natural gas shall be conducted at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

**DRAFT**  
CONDITIONS CONTINUE ON NEXT PAGE

20. When the unit changes fuel source, the unit shall undergo source testing to measure NO<sub>x</sub> and CO emissions within 60 days of the change unless the unit has already undergone source testing in the last twelve (12) months or thirty-six (36) months after demonstrating compliance on the previous two (2) source tests when fired on that fuel source. [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
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] Federally Enforceable Through Title V Permit
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] Federally Enforceable Through Title V Permit
23. NO<sub>x</sub> emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
24. CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
25. Stack gas oxygen (O<sub>2</sub>) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
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] Federally Enforceable Through Title V Permit
27. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
28. The permittee shall monitor and record the stack concentration of NO<sub>x</sub>, CO, and O<sub>2</sub> at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
29. If either the NO<sub>x</sub> or CO concentrations corrected to 3% O<sub>2</sub>, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of the performing the notification and testing required by this condition. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
30. All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
31. The permittee shall maintain records of: (1) the date and time of NO<sub>x</sub>, CO, and O<sub>2</sub> measurements, (2) the O<sub>2</sub> concentration in percent and the measured NO<sub>x</sub> and CO concentrations corrected to 3% O<sub>2</sub>, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

DRAFT  
CONDITIONS CONTINUE ON NEXT PAGE

32. Permittee shall maintain records of the sulfur content and the daily quantity of gas and vapor burned in this steam generator. Compliance with the SO<sub>x</sub> emissions limit shall be demonstrated by calculation, using the sulfur content and quantities of gas and vapor burned. [District Rule 2201] Federally Enforceable Through Title V Permit
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, 4320, and 40 CFR 60.48c(i)] Federally Enforceable Through Title V Permit
34. Prior to operating under this Authority to Construct, permittee shall surrender emission reduction credits for the following quantities of emissions: NO<sub>x</sub>: 698 lb/quarter; SO<sub>x</sub>: 710 lb/quarter, PM<sub>10</sub>: 1,415 lb/quarter, and VOC: 1,024 lb/quarter. Offset shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 9/21/2006). [District Rule 2201]
35. ERC Certificate Numbers C-787-1, C-862-1, C-970-1, N-647-1, N-648-1, N-649-1, N-666-1, N-668-1, N-808-1, N-813-1, N-814-1, S-3195-1, S-3017-2, S-3018-2, N-806-5, N-807-5, S-3024-5, S-3026-5, and S-3192-5 (or a certificate split from this certificate) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
36. ATC shall be implemented concurrently with or subsequent to ATCs S-1246-292-10, '-293-7, '-294-6, '-311-3, '-314-2 and '-318-2. [District Rule] Federally Enforceable Through Title V Permit

DRAFT