San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

MAY 0 8 2012

Mr. Jason Donchin
Chevron USA Inc
PO Box 1392
Bakersfield, CA 93302

Re: Notice of Preliminary Decision - ATC / Certificate of Conformity
Facility # C-311
Project # 1111932

Dear Mr. Donchin:

Enclosed for your review and comment is the District's analysis of an application for Authorities to Construct for Chevron USA Inc at the Coalinga Oilfield, Fresno County, CA. The project authorizes an increase in the maximum hourly heat input rating and/or removal of the daily heat input limitations on twelve (12) steam generators.

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

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

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

Thank you for your cooperation in this matter.

Sincerely,

David Warner
Director of Permit Services

DW:RE/bw

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
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34946 Flyover Court
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Tel: 661-392-5500 FAX: 661-392-5585

www.valleyair.org www.healthyairliving.com

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

MAY 08 2012

Gerardo C. Rios, Chief
Permits Office
Air Division
U.S. EPA - Region IX
75 Hawthorne St.
San Francisco, CA 94105

Re: Notice of Preliminary Decision - ATC / Certificate of Conformity
Facility # C-311
Project # 1111932

Dear Mr. Rios:

Enclosed for your review is the District's engineering evaluation of an application for Authorities to Construct for Chevron USA Inc at the Coalinga Oilfield, Fresno County, CA, which has been issued a Title V permit. Chevron USA Inc is requesting that Certificates of Conformity, with the procedural requirements of 40 CFR Part 70, be issued with this project. The project authorizes an increase in the maximum hourly heat input rating and/or removal of the daily heat input limitations on twelve (12) steam generators.

Enclosed is the engineering evaluation of this application, along with the current Title V permit, and proposed Authorities to Construct # C-311-36-20, '-37-25, '-38-24, '-39-22, '-40-21, '-41-18, '-42-20, '-43-18, '-45-18, '-52-19, '-53-20, and '-84-18 with Certificates of Conformity. After demonstrating compliance with the Authority to Construct, the conditions will be incorporated into the facility's Title V permit through an administrative amendment.

Please submit your written comments on this project within the 45-day comment period that begins on the date you receive this letter. If you have any questions, please contact Mr. Leonard Scandura, Permit Services Manager, at (661) 392-5500.

Thank you for your cooperation in this matter.

Sincerely,

David Warner
Director of Permit Services

DW:RE/bw

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San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

MAY 0 8 2012

Mike Tollstrup, Chief
Project Assessment Branch
Air Resources Board
P O Box 2815
Sacramento, CA 95812-2815

Re: **Notice of Preliminary Decision - ATC / Certificate of Conformity**
Facility # C-311
Project # 1111932

Dear Mr. Tollstrup:

Enclosed for your review and comment is the District's analysis of an application for Authorities to Construct for Chevron USA Inc at the Coalinga Oilfield, Fresno County, CA. The project authorizes an increase in the maximum hourly heat input rating and/or removal of the daily heat input limitations on twelve (12) steam generators.

The public notice will be published approximately three days from the date of this letter. Please submit your written comments 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, please contact Mr. Leonard Scandura, Permit Services Manager, at (661) 392-5500.

Thank you for your cooperation in this matter.

Sincerely,

David Warner
Director of Permit Services

DW:RE/bw

Enclosures

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Fresno Bee

**NOTICE OF PRELIMINARY DECISION
FOR THE ISSUANCE OF AUTHORITY TO CONSTRUCT AND
THE PROPOSED MINOR MODIFICATION OF FEDERALLY
MANDATED OPERATING PERMIT**

NOTICE IS HEREBY GIVEN that the San Joaquin Valley Air Pollution Control District solicits public comment on the proposed issuance of Authority To Construct to Chevron USA Inc for its heavy oil production operation at the Coalinga Oilfield, Fresno County, California. The project authorizes revision of the maximum hourly heat input rating listed in the equipment description and/or remove daily fuel limitations on twelve (12) steam generators.

The analysis of the regulatory basis for these proposed actions, Project #1111932, is available for public inspection at http://www.valleyair.org/notices/public_notices_idx.htm and the District office at the address below. Written comments on the proposed initial permit must be submitted within 30 days of the publication date of this notice to **DAVID WARNER, DIRECTOR OF PERMIT SERVICES, SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT, 1990 E. GETTYSBURG AVE, FRESNO, CA 93726-0244.**

San Joaquin Valley Air Pollution Control District

Authority to Construct Application Review

Increase Daily Fuel Use Limit for Steam Generators

Facility Name:	Chevron USA Inc	Date:	April 27, 2012
Mailing Address:	PO Box 1392 Bakersfield, CA 93302	Engineer:	Richard Edgehill
		Lead Engineer:	Allan Phillips
Contact Person:	Larry Landis and Lance Ericksen		
Telephone:	(661) 654-7141 (LL) (661) 654-7145 (LE)		
Fax:	(661) 654-7606		
E-Mail:	landilr@chevron.com		
Application #(s):	C-311-36-20, C-311-37-25, C-311-38-24, C-311-39-22, C-311-40-21, C-311-41-18, C-311-42-20, C-311-43-18, C-311-45-18, C-311-52-19, C-311-53-20, and C-311-84-18		
Project #:	C-1111932		
Deemed Complete:	October 27, 2011		

I. Proposal

Chevron USA Inc (CUSA) is requesting Authorities to Construct (ATCs) to revise the maximum hourly input rating listed in the equipment description and/or increase daily fuel limitations on twelve (12) Coalinga Field steam generators. No physical modifications or increase in annual emissions is proposed.

The project is a SB288 Major Modification for PM10 and triggers BACT for SOx and PM10. Offsets are not required. Public notice is required.

CUSA is a major stationary source with a 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). Since the facility has specifically requested that this project be processed in that manner, the 45-day EPA comment period will be satisfied prior to the issuance of the Authority to Construct. CUSA must apply to administratively amend their Title V permit.

Disposition of Outstanding ATCs

The following ATCs have been implemented and serve as base documents:

C-311-36-17, '-37-21, '-38-21, '-39-19, '-40-10, '-41-15, '-42-18, '-43-16, '-45-15, '-52-16, '-53-17, and '-84-16

The base document ATCs and current PTOs are included in **Attachment I**.

II. Applicable Rules

Rule 2201	New and Modified Stationary Source Review Rule (4/21/11)
Rule 2520	Federally Mandated Operating Permits (6/21/01)
Rule 4001	New Source Performance Standards (4/14/99)
Rule 4002	National Emissions Standards for Hazardous Air Pollutants (5/20/04)
Rule 4101	Visible Emissions (2/17/05)
Rule 4102	Nuisance (12/17/92)
Rule 4201	Particulate Matter Concentration (12/17/92)
Rule 4301	Fuel Burning Equipment (12/17/92)
Rule 4305	Boilers, Steam Generators and Process Heaters – Phase II (8/21/03)
Rule 4306	Boilers, Steam Generators and Process Heaters – Phase III (3/17/05)
Rule 4320	Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters Greater than 5.0 MMBtu/hr (10/16/08)
Rule 4801	Sulfur Compounds (12/17/92)
CH&SC 41700	Health Risk Assessment
CH&SC 42301.6	School Notice

Public Resources Code 21000-21177: California Environmental Quality Act (CEQA)
California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387: CEQA Guidelines

III. Project Location

The steam generators are located in the Coalinga Oilfield Sections 13 and 25, T20S, R14E.

Location	Steam Generators
6C –Section 6, T30S, R15E	C-311-52, '-53, and '-84
25D – Section 25, T20S, R14E	C-311-36,'-37, '-38, '-39, '-40, '-41, '-42, '-43, and '-45

IV. Process Description

In thermally-enhanced oil recovery (TEOR), 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 petroleum production.

CUSA is proposing to revise the equipment descriptions that currently list steam generator ratings at 58.5 MMBtu/hr. The applicant claims that the units in fact have a heat input rating of 62.5 MMBtu/hr as is standard for most steam generators. Of the 12 steam generators, 10 also include a permit limit on daily gas consumption. CUSA is also requesting that this condition be removed. All 12 steam generators have permit conditions that limit annual fuel consumption. No change in the annual limit is proposed. Additional details are included in the following table:

ATC except where indicated	Heat Input Rating	Daily Limit (base document)	Annual Limit	NOx /SOx Emissions Limit Status
C-311-36-17	58.5	-	435,000 MMBtu	Scrubbed 15 ppm NOx
C-311-37-21	62.5	1404 MMBtu	457,800 MMBtu	Scrubbed 15 PPM NOx
C-311-38-21	58.5	1404 MMBtu	457,800 MMBtu	Scrubbed 15 ppm NOx
C-311-39-19	58.5	1404 MMBtu	457,800 MMBtu	Scrubbed 15 ppm NOx
C-311-40-18	58.5	-	434,700 MMBtu	Scrubbed 15 ppm NOx
C-311-41-15	58.5	-	435,000 MMBtu	Scrubbed 15 ppm NOx
C-311-42-18	58.5	1404 MMBtu	434,700 MMBtu	15 ppm NOx
C-311-43-16	58.5	1404 MMBtu	434,700 MMBtu	15 ppm NOx
C-311-45-15	58.5	1404 MMBtu	434,700 MMBtu	15 ppm NOx
C-311-52-16	58.5	1404 MMBtu	457,800 MMBtu	15 ppm NOx
C-311-53-17	58.5	1404 MMBtu	457,800 MMBtu	15 ppm NOx
C-311-84-16	58.5	1404 MMBtu)	434,700 MMBtu	15 ppm NOx

V. Equipment Listing

Please note that the proposed ATCs include changes to the equipment descriptions in the post-project equipment descriptions below.

Pre-Project Equipment Description (all documents are ATCs):

C-311-36-17: MODIFICATION OF 58.5 MMBTU/HR STRUTHERS THERMOFLOOD MODEL OH-50-ND-16XAM NATURAL GAS/LPG/WELL CASING GAS/TANK VAPOR RECOVERY GAS-FIRED STEAM GENERATOR (SG #25-15) WITH A NORTH AMERICAN MODEL MAGNA-FLAME GLE LOW NOX BURNER SERVED BY THE 25D NEPTUNE AIRPOL CAUSTIC SCRUBBER WHEN FIRING WELL CASING AND/OR TANK VAPOR RECOVERY GAS FROM SECTIONS 25D AND 6C ONLY: LIMIT SOX PER 5.4.1.3 (EXHAUST) FOR RULE 4320 COMPLIANCE (EXISTING SCRUBBER). REMOVE "FROM SECTIONS 25D AND 6C ONLY" FROM EQUIPMENT DESCRIPTION

C-311-37-21: MODIFICATION OF 62.5 MMBTU/HR STRUTHERS THERMOFLOOD MODEL OH-50-ND-16XAM STEAM GENERATOR (#25-16) WITH A NORTH AMERICAN MODEL GLE LOW NOX BURNER WITH FLUE GAS RECIRCULATION (FGR) SERVED BY THE 25D NEPTUNE AIRPOL CAUSTIC SCRUBBER WHEN FIRING WELL CASING AND/OR TANK VAPOR RECOVERY GAS: LIMIT SOX PER 5.4.1.3 (EXHAUST) FOR RULE 4320 COMPLIANCE (EXISTING SCRUBBER)

C-311-38-21: MODIFICATION OF 58.5 MMBTU/HR SG 25-17 STRUTHERS THERMOFLOOD STEAM GENERATOR, MODEL OH-50-ND-16XAM, WITH A NORTH AMERICAN GLE LOW NOX AND FLUE GAS

RECIRCULATION SERVED BY THE 25D NEPTUNE AIRPOL CAUSTIC SCRUBBER WHEN FIRING WELL CASING AND/OR TANK VAPOR RECOVERY GAS: LIMIT SOX PER 5.4.1.3 (EXHAUST) FOR RULE 4320 COMPLIANCE (EXISTING SCRUBBER)

C-311-39-19: MODIFICATION OF 58.5 MMBTU/HR STRUTHERS THERMOFLOOD STEAM GENERATOR #25-18, MODEL OH-50-ND-16XAM, EQUIPPED WITH A NORTH AMERICAN GLE BURNER AND FLUE GAS RECIRCULATION SERVED BY THE 25D NEPTUNE AIRPOL CAUSTIC SCRUBBER WHEN FIRING WELL CASING AND/OR TANK VAPOR RECOVERY GAS: LIMIT SOX PER 5.4.1.3 (EXHAUST) FOR RULE 4320 COMPLIANCE (EXISTING SCRUBBER)

C-311-40-18: MODIFICATION OF 58.5 MMBTU/HR NATURAL GAS, LPG OR PROCESS GAS FIRED STRUTHERS THERMOFLOOD STEAM GENERATOR, MODEL OH-50-ND-16XAM, WITH A NORTH AMERICAN GLE BURNER, FLUE GAS RECIRCULATION SYSTEM, AN OXYGEN CONTROLLER, SERVED BY THE NEPTUNE AIRPOL CAUSTIC SCRUBBER WHEN FIRING WELL CASING AND/OR TANK VAPOR RECOVERY GAS (COMMON TO C-311-37) (SG-25-19): LIMIT SOX PER 5.4.1.3 (EXHAUST) FOR RULE 4320 COMPLIANCE (EXISTING SCRUBBER)

C-311-41-15: MODIFICATION OF 58.5 MMBTU/HR SG 25-20 STRUTHERS THERMOFLOOD STEAM GENERATOR, MODEL OH-50-ND-16XAM, WITH A NORTH AMERICAN GLE BURNER AND FLUE GAS RECIRCULATION SYSTEM, SERVED BY THE NEPTUNE AIRPOL CAUSTIC SCRUBBER WHEN FIRING WELL CASING AND/OR TANK VAPOR RECOVERY GAS: LIMIT SOX PER 5.4.1.3 (EXHAUST) FOR RULE 4320 COMPLIANCE (EXISTING SCRUBBER)

C-311-42-18: MODIFICATION OF 58.5 MMBTU/HR SG 25-21 STRUTHERS THERMOFLOOD STEAM GENERATOR, MODEL OH-50-ND-16XAM, WITH A NORTH AMERICAN GLE LOW NOX BURNER AND FLUE GAS RECIRCULATION SYSTEM: LIMIT FUEL GAS SULFUR CONTENT TO 5 GR-S/100 DSCF FOR RULE 4320 COMPLIANCE

C-311-43-16: MODIFICATION OF 58.5 MMBTU/HR SG 25-22 STRUTHERS THERMOFLOOD STEAM GENERATOR, MODEL OH-50-ND-16AXM, WITH A NORTH AMERICAN GLE LOW-NOX BURNER AND A FLUE GAS RECIRCULATION (FGR) SYSTEM: LIMIT FUEL GAS SULFUR CONTENT TO 5 GR-S/100 DSCF FOR RULE 4320 COMPLIANCE

C-311-45-15: MODIFICATION OF 58.5 MMBTU/HR SG 25-24 STRUTHERS THERMOFLOOD STEAM GENERATOR, MODEL OH-50-ND-16AXM, WITH A NORTH AMERICAN GLE LOW NOX BURNER AND FLUE GAS RECIRCULATION SYSTEM: LIMIT FUEL GAS SULFUR CONTENT TO 5 GR-S/100 DSCF FOR RULE 4320 COMPLIANCE

C-311-52-16: MODIFICATION OF 58.5 MMBTU/HR SG STRUTHERS THERMOFLOOD STEAM GENERATOR #6-32, MODEL 0H-50-ND-16XAM, EQUIPPED WITH A NORTH AMERICAN GLE LOW-NOX BURNER, FLUE GAS RECIRCULATION SYSTEM, AND AN OXYGEN CONTROLLER: LIMIT FUEL GAS SULFUR CONTENT TO 5 GR-S/100 DSCF FOR RULE 4320 COMPLIANCE

C-311-53-17: MODIFICATION OF 58.5 MMBTU/HR STRUTHERS THERMOFLOOD STEAM GENERATOR #6-33, MODEL OH-50-ND-16XAM, EQUIPPED WITH A NORTH AMERICAN GLE LOW-NOX BURNER (OR DISTRICT APPROVED EQUIVALENT), FLUE GAS RECIRCULATION SYSTEM, AND AN OXYGEN CONTROLLER: LIMIT FUEL GAS SULFUR CONTENT TO 5 GR-S/100 DSCF FOR RULE 4320 COMPLIANCE

C-311-84-16: MODIFICATION OF 58.5 MMBTU/HR STRUTHERS THERMOFLOOD (SG 6-37) MODEL OH5O-ND-16XAM NATURAL GAS/LPG/TEOR GAS (COMMON TO C-311-37, SG 25-19) FIRED STEAM GENERATOR WITH A NORTH AMERICAN MODEL MAGNA FLAME GLE LOW NOX BURNER AND FLUE GAS RECIRCULATION: LIMIT FUEL GAS SULFUR CONTENT TO 5 GR-S/100 DSCF FOR RULE 4320 COMPLIANCE

Proposed Modifications

C-311-38-24, C-311-39-22, C-311-42-20, C-311-43-18, C-311-45-18, C-311-52-19, C-311-53-20, and C-311-84-18:

REMOVE CONDITION LIMITING DAILY FUEL CONSUMPTION AND REVISE HEAT INPUT RATING FROM 58.5 MMBTU/HR TO 62.5 MMBTU/HR, LOWER NOX LIMIT TO 14 PPMV @ 3% O2

C-311-37-25:

REMOVE CONDITION LIMITING DAILY FUEL CONSUMPTION, LOWER NOX LIMIT TO 14 PPMV @ 3% O2

C-311-36-20, 40-21, and '-41-18:

REVISE HEAT INPUT RATING FROM 58.5 MMBTU/HR TO 62.5 MMBTU/HR, LOWER NOX LIMIT TO 14 PPMV @ 3% O2

Post Project Equipment Description:

C-311-36-20: 62.5 MMBTU/HR *SG-25-15* STRUTHERS THERMOFLOOD, MODEL OH-50-ND-16XAM, ~~*NATURAL GAS/LPG/WELL CASING GAS/TANK VAPOR RECOVERY GAS-FIRED*~~ STEAM GENERATOR WITH ~~*A*~~ NORTH AMERICAN MODEL ~~*MAGNA-FLAME*~~ GLE ~~*LOW NOX*~~ BURNER *AND FLUE GAS RECIRCULATION (FGR) SYSTEM* SERVED BY THE 25D NEPTUNE

AIRPOL CAUSTIC SCRUBBER WHEN FIRING WELL CASING AND/OR TANK VAPOR RECOVERY GAS ~~*FROM SECTIONS 25D AND 6C ONLY*~~

C-311-37-25: 62.5 MMBTU/HR SG 25-16 STRUTHERS THERMOFLOOD MODEL OH-50-ND-16XAM STEAM GENERATOR ~~(#25-16)~~ WITH *A* NORTH AMERICAN MODEL GLE ~~*LOW NOX*~~ BURNER *AND* ~~*WITH*~~ FLUE GAS RECIRCULATION (FGR) *SYSTEM* SERVED BY THE 25D NEPTUNE AIRPOL CAUSTIC SCRUBBER WHEN FIRING WELL CASING AND/OR TANK VAPOR RECOVERY GAS

C-311-38-24: 62.5 MMBTU/HR SG 25-17 STRUTHERS THERMOFLOOD STEAM GENERATOR, MODEL OH-50-ND-16XAM, WITH A NORTH AMERICAN GLE ~~LOW NOX~~ BURNER AND FLUE GAS RECIRCULATION *(FGR) SYSTEM* SERVED BY THE 25D NEPTUNE AIRPOL CAUSTIC SCRUBBER WHEN FIRING WELL CASING AND/OR TANK VAPOR RECOVERY GAS

C-311-39-22: 62.5 MMBTU/HR SG-25-19 STRUTHERS THERMOFLOOD STEAM GENERATOR #25-18, MODEL OH-50-ND-16XAM, ~~*EQUIPPED*~~ WITH *A* NORTH AMERICAN GLE BURNER AND FLUE GAS RECIRCULATION *(FGR) SYSTEM* SERVED BY THE 25D NEPTUNE AIRPOL CAUSTIC SCRUBBER WHEN FIRING WELL CASING AND/OR TANK VAPOR RECOVERY GAS

C-311-40-21: 58.5 MMBTU/HR *SG 25-19* ~~*NATURAL GAS, LPG OR PROCESS GAS FIRED*~~ STRUTHERS THERMOFLOOD STEAM GENERATOR, MODEL OH-50-ND-16XAM, WITH *A* NORTH AMERICAN GLE BURNER *AND* FLUE GAS RECIRCULATION *(FGR)* SYSTEM~~*, AN OXYGEN CONTROLLER,*~~ SERVED BY THE *25D* NEPTUNE AIRPOL CAUSTIC SCRUBBER WHEN FIRING WELL CASING AND/OR TANK VAPOR RECOVERY GAS ~~*(COMMON TO C-311-37) (SG-25-19)*~~

C-311-41-18: 62.5 MMBTU/HR SG 25-20 STRUTHERS THERMOFLOOD STEAM GENERATOR, MODEL OH-50-ND-16XAM, WITH ~~*A*~~ NORTH AMERICAN GLE BURNER AND FLUE GAS RECIRCULATION *(FGR)* SYSTEM, SERVED BY THE *25 D* NEPTUNE AIRPOL CAUSTIC SCRUBBER WHEN FIRING WELL CASING AND/OR TANK VAPOR RECOVERY GAS

C-311-42-20: 62.5 MMBTU/HR SG 25-21 STRUTHERS THERMOFLOOD STEAM GENERATOR, MODEL OH-50-ND-16XAM, WITH *A* NORTH AMERICAN GLE ~~*LOW NOX*~~ BURNER AND FLUE GAS RECIRCULATION *(FGR)* SYSTEM

C-311-43-18: 62.5 MMBTU/HR SG 25-22 STRUTHERS THERMOFLOOD STEAM GENERATOR, MODEL OH-50-ND-16AXM, WITH ~~*A*~~ NORTH AMERICAN GLE ~~*LOW-NOX*~~ BURNER AND *A* FLUE GAS RECIRCULATION (FGR) SYSTEM

C-311-45-18: 62.5 MMBTU/HR SG 25-24 STRUTHERS THERMOFLOOD STEAM GENERATOR, MODEL OH-50-ND-16AXM, WITH ~~A~~ NORTH AMERICAN GLE ~~LOW-NOX~~ BURNER AND FLUE GAS RECIRCULATION *(FGR)* SYSTEM

C-311-52-19: 62.5 MMBTU/HR SG STRUTHERS THERMOFLOOD STEAM GENERATOR #6-32, MODEL 0H-50-ND-16XAM, EQUIPPED WITH ~~A~~ NORTH AMERICAN GLE ~~LOW-NOX~~ BURNER AND FLUE GAS RECIRCULATION *(FGR)* SYSTEM, ~~AND AN OXYGEN CONTROLLER~~

C-311-53-20: 62.5 MMBTU/HR *SG-6-33* STRUTHERS THERMOFLOOD STEAM GENERATOR ~~#6-33~~, MODEL OH-50-ND-16XAM, ~~EQUIPPED~~ WITH ~~A~~ NORTH AMERICAN GLE ~~LOW-NOX~~ BURNER ~~(OR DISTRICT APPROVED EQUIVALENT), AND~~ FLUE GAS RECIRCULATION *(FGR)* SYSTEM~~, AND AN OXYGEN CONTROLLER~~

C-311-84-18: 62.5 MMBTU/HR *SG 6-37* STRUTHERS THERMOFLOOD *STEAM GENERATOR* ~~(SG 6-37)~~ MODEL OH5O-ND-16XAM ~~NATURAL GAS/LPG/TEOR GAS (COMMON TO C-311-37, SG 25-19) FIRED~~ WITH ~~A~~ NORTH AMERICAN MODEL ~~MAGNA-FLAME~~ GLE ~~LOW-NOX~~ BURNER AND FLUE GAS RECIRCULATION *(FGR) SYSTEM*

VI. Emission Control Technology Evaluation

The steam generators in this project are capable of generating emissions of NOx, CO, VOC, PM10, and SOx due to the combustion of natural gas. The steam generators are equipped with low-NOx burners and flue gas recirculation (FGR) systems. Steam generators C-311-36, '-37, '-38, '-39, '-40 and '-41 are equipped with a flue gas desulfurization scrubber.

Low NOx Burner Technology

Low-NOx burners reduce NOx 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 NOx burners delay the mixing of fuel and air by introducing the fuel (or sometimes the air) in multiple stages. The low NOx burners installed or proposed for these steam generators are staged fuel burners where the fuel is added in stages. The first stage is an oxygen-rich/fuel-lean stage in which the peak zone temperature is reduced. The second stage is a fuel-rich/oxygen-lean stage that carries out the combustion. The lower flame temperature reduces the formation of NOx.

Flue Gas Recirculation Technology

Flue gas recirculation (FGR) can reduce nitrous oxides (NOx) emissions by 60% to 70%. In an FGR system, a portion of the flue gas is recirculated back to the inlet air. Since flue gas is composed principally 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. Therefore, flue gas is practically inert.

The addition of an inert mass of gas to the combustion reaction serves to absorb heat, thereby lowering the flame temperature. Since thermal NOx is formed by high flame temperatures, the lower flame temperatures produced by FGR serve to reduce thermal NOx.

Flue Gas Desulfurization

Steam generators C-311-36, '-37, '-38, '-39, '-40 and '-41 are equipped with a flue gas desulfurization scrubber. Gas absorption is employed in the wet scrubber to remove sulfur dioxide (SO2) from steam generator flue gas. Absorption is a process in which SO2 is dissolved into a liquid. Removal of sulfur dioxide from the flue gas stream passing through a wet scrubber involves preferential solution of the sulfur dioxide into an aqueous scrubbing liquor followed by reaction with active alkaline constituents in the liquor. The reaction products are sulfur containing salts which are purged from the scrubber in a small bleed stream and sent to disposal.

VII. General Calculations

A. Assumptions

Facility will operate 24 hours per day at the revised rated capacity of 1500 MMBtu/day (62.5 MMBtu/hr). Daily heat input limitation will be deleted. Annual heat input limitation will not be revised.

Natural gas F factor is 8,578 dscf/MMBtu (8,710 dscf/MMBtu at 68 °F corrected to 60 °F).

The steam generators are limited by permit condition to 15 ppmv NOx @ 3% O_2 but are clean emissions units for NOx as they satisfy the BACT requirement (within the last 5 years) of 14 ppmv NOx @ 3%O_2 as indicated by source test data (**Attachment II**). Both pre- and post-project emissions will be revised to 14 ppmv NOx @ 3%O_2 (0.017 lb/MMBtu).

B. Emission Factors

The reference documents are all ATCs. Pre-project emissions for NOx and pre- and post-project emissions for SOx, PM10, CO, and VOC are listed in the following table:

Emission Factors in lb/MMBtu (ppmv @ 3% O2)					
Permit Unit	NOx (as NO_2)	SOx (as SO_2)	PM10	CO	VOC
Flue Gas Scrubber SGs (ATCs project 1093036, 95% control or 9 ppmv SOx)					
C-311-36-17	0.017	0.052	0.014	0.037	0.0085
C-311-37-21	0.017	0.052	0.014	0.037	0.008
C-311-38-21	0.017	0.052	0.045	0.037	0.008
C-311-39-19	0.017	0.052	0.045	0.037	0.008
C-311-40-10	0.017	0.052	0.045	0.035	??
C-311-41-15	0.017	0.052	0.044	0.037	0.0085
Natural gas fired units ATCs project 1093025, 5 gr S/100 scf*					
C-311-42-18	0.017	0.0143	0.045	0.037	0.003
C-311-43-16	0.017	0.0143	0.045	0.037	0.003
C-311-45-15	0.017	0.0143	0.045	0.037	0.003
C-311-52-16	0.017	0.0143	0.005	0.037	0.008
C-311-53-17	0.017	0.0143	0.005	0.037	0.008
C-311-84-16	0.017	0.0143	0.00675	0.037	0.00855

*project included both NOx and SOx Rule 4320 compliance ATCs, the latter are base documents
Daily emissions limit = 0.036 lb/MMBtu x 1404 MMBtu/day = 50.5 lb/day

Pre- and Post-Project NOx emissions

NOx: 0.017 lb/MMBtu[(1)]

[(1)] 0.017 lb-NOx/mmbtu = (14 ppmvd/10^6)(8,578 dscf/MMBtu)(lb-mol/379.6 ft^3)(46 lb/lb-mol)[20.9/(20.9-3)]

Achieved-in-Practice requirement of BACT Guideline 1.2.1 (14 ppmv @ 3% O2)

C. Calculations

1. Pre-Project Potential to Emit (PE1)

C-311-36

Pollutant	Daily Pre-Project Potential to Emit (PE1)									
	Emission Factors			Heat input			Hours per day		Daily PE1	
NO_X	0.0170	(lb-NO_X/MMBtu)	x	58.5	(MMBtu/hr)	x	24 (hr/day)	=	23.9	(lb-NO_X/day)
SO_X	0.05200	(lb-SO_X/MMBtu)	x	58.5	(MMBtu/hr)	x	24 (hr/day)	=	73.0	(lb-SO_X/day)
PM_{10}	0.0140	(lb-PM_{10}/MMBtu)	x	58.5	(MMBtu/hr)	x	24 (hr/day)	=	19.7	(lb-PM_{10}/day)
CO	0.0370	(lb-CO/MMBtu)	x	58.5	(MMBtu/hr)	x	24 (hr/day)	=	51.9	(lb-CO/day)
VOC	0.0085	(lb-VOC/MMBtu)	x	58.5	(MMBtu/hr)	x	24 (hr/day)	=	11.9	(lb-VOC/day)

Pollutant	Annual Pre-Project Potential to Emit (PE1)							
	Emission Factors			Annual Max Heat input			Annual PE1	
NO_X	0.0170	(lb-NO_X/MMBtu)	x	435	(billion Btu/year)	=	7,395	(lb-NO_X/year)
SO_X	0.05200	(lb-SO_X/MMBtu)	x	435	(billion Btu/year)	=	22,620	(lb-SO_X/year)
PM_{10}	0.0140	(lb-PM_{10}/MMBtu)	x	435	(billion Btu/year)	=	6,090	(lb-PM_{10}/year)
CO	0.0370	(lb-CO/MMBtu)	x	435	(billion Btu/year)	=	16,095	(lb-CO/year)
VOC	0.0085	(lb-VOC/MMBtu)	x	435	(billion Btu/year)	=	3,698	(lb-VOC/year)

C-311-37

Pollutant	Daily Pre-Project Potential to Emit (PE1)									
	Emission Factors			Heat input			Hours per day		Daily PE1	
NO_X	0.0170	(lb-NO_X/MMBtu)	x	58.5	(MMBtu/hr)	x	24 (hr/day)	=	23.9	(lb-NO_X/day)
SO_X	0.05200	(lb-SO_X/MMBtu)	x	58.5	(MMBtu/hr)	x	24 (hr/day)	=	73.0	(lb-SO_X/day)
PM_{10}	0.0140	(lb-PM_{10}/MMBtu)	x	58.5	(MMBtu/hr)	x	24 (hr/day)	=	19.7	(lb-PM_{10}/day)
CO	0.0370	(lb-CO/MMBtu)	x	58.5	(MMBtu/hr)	x	24 (hr/day)	=	51.9	(lb-CO/day)
VOC	0.0080	(lb-VOC/MMBtu)	x	58.5	(MMBtu/hr)	x	24 (hr/day)	=	11.2	(lb-VOC/day)

Pollutant	Annual Pre-Project Potential to Emit (PE1)							
	Emission Factors			Annual Max Heat input			Annual PE1	
NO_X	0.0170	(lb-NO_X/MMBtu)	x	457.8	(billion Btu/year)	=	7,783	(lb-NO_X/year)
SO_X	0.05200	(lb-SO_X/MMBtu)	x	457.8	(billion Btu/year)	=	23,806	(lb-SO_X/year)
PM_{10}	0.0140	(lb-PM_{10}/MMBtu)	x	457.8	(billion Btu/year)	=	6,409	(lb-PM_{10}/year)
CO	0.0370	(lb-CO/MMBtu)	x	457.8	(billion Btu/year)	=	16,939	(lb-CO/year)
VOC	0.0080	(lb-VOC/MMBtu)	x	457.8	(billion Btu/year)	=	3,662	(lb-VOC/year)

C-311-38 and '-39

Pollutant	Daily Pre-Project Potential to Emit (PE1)											
	Emission Factors			Heat input			Hours per day			Daily PE1		
NO_X	0.0170	(lb-NO_X/MMBtu)	x	58.5	(MMBtu/hr)	x	24	(hr/day)	=	see below	(lb-NO_X/day)
SO_X	0.05200	(lb-SO_X/MMBtu)	x	58.5	(MMBtu/hr)	x	24	(hr/day)	=	73.0	(lb-SO_X/day)
PM_{10}	0.0450	(lb-PM_{10}/MMBtu)	x	58.5	(MMBtu/hr)	x	24	(hr/day)	=	63.2	(lb-PM_{10}/day)
CO	0.0370	(lb-CO/MMBtu)	x	58.5	(MMBtu/hr)	x	24	(hr/day)	=	51.9	(lb-CO/day)
VOC	0.0080	(lb-VOC/MMBtu)	x	58.5	(MMBtu/hr)	x	24	(hr/day)	=	11.2	(lb-VOC/day)

Pollutant	Annual Pre-Project Potential to Emit (PE1)						
	Emission Factors			Annual Max Heat input		Annual PE1	
NO_X	0.0170	(lb-NO_X/MMBtu)	x	457.8	(billion Btu/year)	= 7,783	(lb-NO_X/year)
SO_X	0.05200	(lb-SO_X/MMBtu)	x	457.8	(billion Btu/year)	= 23,806	(lb-SO_X/year)
PM_{10}	0.0450	(lb-PM_{10}/MMBtu)	x	457.8	(billion Btu/year)	= 20,601	(lb-PM_{10}/year)
CO	0.0370	(lb-CO/MMBtu)	x	457.8	(billion Btu/year)	= 16,939	(lb-CO/year)
VOC	0.0080	(lb-VOC/MMBtu)	x	457.8	(billion Btu/year)	= 3,662	(lb-VOC/year)

Daily emissions limit = 0.036 lb/MMBtu x 1404 MMBtu/day = 50.5 lb/day

C-311-40-no VOC assume 0.008

Pollutant	Daily Pre-Project Potential to Emit (PE1)											
	Emission Factors			Heat input			Hours per day			Daily PE1		
NO_X	0.0170	(lb-NO_X/MMBtu)	x	58.5	(MMBtu/hr)	x	24	(hr/day)	=	23.9	(lb-NO_X/day)
SO_X	0.05200	(lb-SO_X/MMBtu)	x	58.5	(MMBtu/hr)	x	24	(hr/day)	=	73.0	(lb-SO_X/day)
PM_{10}	0.0450	(lb-PM_{10}/MMBtu)	x	58.5	(MMBtu/hr)	x	24	(hr/day)	=	63.2	(lb-PM_{10}/day)
CO	0.0350	(lb-CO/MMBtu)	x	58.5	(MMBtu/hr)	x	24	(hr/day)	=	49.1	(lb-CO/day)
VOC	0.0080	(lb-VOC/MMBtu)	x	58.5	(MMBtu/hr)	x	24	(hr/day)	=	11.2	(lb-VOC/day)

Pollutant	Annual Pre-Project Potential to Emit (PE1)						
	Emission Factors			Annual Max Heat input		Annual PE1	
NO_X	0.0170	(lb-NO_X/MMBtu)	x	434.7	(billion Btu/year)	= 7,390	(lb-NO_X/year)
SO_X	0.05200	(lb-SO_X/MMBtu)	x	434.7	(billion Btu/year)	= 22,604	(lb-SO_X/year)
PM_{10}	0.0450	(lb-PM_{10}/MMBtu)	x	434.7	(billion Btu/year)	= 19,562	(lb-PM_{10}/year)
CO	0.0350	(lb-CO/MMBtu)	x	434.7	(billion Btu/year)	= 15,215	(lb-CO/year)
VOC	0.0080	(lb-VOC/MMBtu)	x	434.7	(billion Btu/year)	= 3,478	(lb-VOC/year)

C-311-41

Pollutant	Daily Pre-Project Potential to Emit (PE1)											
	Emission Factors			Heat input			Hours per day			Daily PE1		
NO_X	0.0170	(lb-NO_X/MMBtu)	x	58.5	(MMBtu/hr)	x	24	(hr/day)	=	23.9	(lb-NO_X/day)
SO_X	0.05200	(lb-SO_X/MMBtu)	x	58.5	(MMBtu/hr)	x	24	(hr/day)	=	73.0	(lb-SO_X/day)
PM_{10}	0.0440	(lb-PM_{10}/MMBtu)	x	58.5	(MMBtu/hr)	x	24	(hr/day)	=	61.8	(lb-PM_{10}/day)
CO	0.0370	(lb-CO/MMBtu)	x	58.5	(MMBtu/hr)	x	24	(hr/day)	=	51.9	(lb-CO/day)
VOC	0.0085	(lb-VOC/MMBtu)	x	58.5	(MMBtu/hr)	x	24	(hr/day)	=	11.9	(lb-VOC/day)

Pollutant	Annual Pre-Project Potential to Emit (PE1)						
	Emission Factors			Annual Max Heat input		Annual PE1	
NO_X	0.0170	(lb-NO_X/MMBtu)	x	435	(billion Btu/year)	= 7,395	(lb-NO_X/year)
SO_X	0.05200	(lb-SO_X/MMBtu)	x	435	(billion Btu/year)	= 22,620	(lb-SO_X/year)
PM_{10}	0.0450	(lb-PM_{10}/MMBtu)	x	435	(billion Btu/year)	= 19,575	(lb-PM_{10}/year)
CO	0.0370	(lb-CO/MMBtu)	x	435	(billion Btu/year)	= 16,095	(lb-CO/year)
VOC	0.0080	(lb-VOC/MMBtu)	x	435	(billion Btu/year)	= 3,480	(lb-VOC/year)

C-311-42, '-43, and '-45

Pollutant	Daily Pre-Project Potential to Emit (PE1)											
	Emission Factors			Heat input			Hours per day			Daily PE1		
NO_X	0.0170	(lb-NO_X/MMBtu)	x	58.5	(MMBtu/hr)	x	24	(hr/day)	= see below		(lb-NO_X/day)	
SO_X	0.01430	(lb-SO_X/MMBtu)	x	58.5	(MMBtu/hr)	x	24	(hr/day)	=	20.1	(lb-SO_X/day)	
PM_{10}	0.0450	(lb-PM_{10}/MMBtu)	x	58.5	(MMBtu/hr)	x	24	(hr/day)	=	63.2	(lb-PM_{10}/day)	
CO	0.0370	(lb-CO/MMBtu)	x	58.5	(MMBtu/hr)	x	24	(hr/day)	=	51.9	(lb-CO/day)	
VOC	0.0030	(lb-VOC/MMBtu)	x	58.5	(MMBtu/hr)	x	24	(hr/day)	=	4.2	(lb-VOC/day)	

Pollutant	Annual Pre-Project Potential to Emit (PE1)						
	Emission Factors			Annual Max Heat input		Annual PE1	
NO_X	0.0170	(lb-NO_X/MMBtu)	x	434.7	(billion Btu/year)	= 7,390	(lb-NO_X/year)
SO_X	0.01430	(lb-SO_X/MMBtu)	x	434.7	(billion Btu/year)	= 6,216	(lb-SO_X/year)
PM_{10}	0.0450	(lb-PM_{10}/MMBtu)	x	434.7	(billion Btu/year)	= 19,562	(lb-PM_{10}/year)
CO	0.0370	(lb-CO/MMBtu)	x	434.7	(billion Btu/year)	= 16,084	(lb-CO/year)
VOC	0.0030	(lb-VOC/MMBtu)	x	434.7	(billion Btu/year)	= 1,304	(lb-VOC/year)

Daily emissions limit = 0.036 lb/MMBtu x 1404 MMBtu/day = 50.5 lb/day

C-311-52 and '-53

Pollutant	Daily Pre-Project Potential to Emit (PE1)										
	Emission Factors			Heat input			Hours per day			Daily PE	1
NO_X	0.0170	(lb-NO_X/MMBtu)	x	58.5	(MMBtu/hr)	x	24	(hr/day)	=	see below	(lb-NO_X/day)
SO_X	0.01430	(lb-SO_X/MMBtu)	x	58.5	(MMBtu/hr)	x	24	(hr/day)	=	20.1	(lb-SO_X/day)
PM_{10}	0.0050	(lb-PM_{10}/MMBtu)	x	58.5	(MMBtu/hr)	x	24	(hr/day)	=	7.0	(lb-PM_{10}/day)
CO	0.0370	(lb-CO/MMBtu)	x	58.5	(MMBtu/hr)	x	24	(hr/day)	=	51.9	(lb-CO/day)
VOC	0.0080	(lb-VOC/MMBtu)	x	58.5	(MMBtu/hr)	x	24	(hr/day)	=	11.2	(lb-VOC/day)

Pollutant	Annual Pre-Project Potential to Emit (PE1)						
	Emission Factors			Annual Max Heat input		Annual PE1	
NO_X	0.0170	(lb-NO_X/MMBtu)	x	457.8	(billion Btu/year)	= 7,783	(lb-NO_X/year)
SO_X	0.01430	(lb-SO_X/MMBtu)	x	457.8	(billion Btu/year)	= 6,547	(lb-SO_X/year)
PM_{10}	0.0050	(lb-PM_{10}/MMBtu)	x	457.8	(billion Btu/year)	= 2,289	(lb-PM_{10}/year)
CO	0.0370	(lb-CO/MMBtu)	x	457.8	(billion Btu/year)	= 16,939	(lb-CO/year)
VOC	0.0080	(lb-VOC/MMBtu)	x	457.8	(billion Btu/year)	= 3,662	(lb-VOC/year)

Daily emissions limit = 0.036 lb/MMBtu x 1404 MMBtu/day = 50.5 lb/day

C-311-84:

Pollutant	Daily Pre-Project Potential to Emit (PE1)										
	Emission Factors			Heat input			Hours per day			Daily PE1	
NO_X	0.0170	(lb-NO_X/MMBtu)	x	58.5	(MMBtu/hr)	x	24	(hr/day)	=	see below	(lb-NO_X/day)
SO_X	0.01430	(lb-SO_X/MMBtu)	x	58.5	(MMBtu/hr)	x	24	(hr/day)	=	20.1	(lb-SO_X/day)
PM_{10}	0.0068	(lb-PM_{10}/MMBtu)	x	58.5	(MMBtu/hr)	x	24	(hr/day)	=	9.5	(lb-PM_{10}/day)
CO	0.0370	(lb-CO/MMBtu)	x	58.5	(MMBtu/hr)	x	24	(hr/day)	=	see below	(lb-CO/day)
VOC	0.0086	(lb-VOC/MMBtu)	x	58.5	(MMBtu/hr)	x	24	(hr/day)	=	12.0	(lb-VOC/day)

Pollutant	Annual Pre-Project Potential to Emit (PE2)						
	Emission Factors			Annual Max Heat input		Annual PE1	
NO_X	0.0170	(lb-NO_X/MMBtu)	x	434.7	(billion Btu/year)	= 7,390	(lb-NO_X/year)
SO_X	0.01430	(lb-SO_X/MMBtu)	x	434.7	(billion Btu/year)	= 6,216	(lb-SO_X/year)
PM_{10}	0.0068	(lb-PM_{10}/MMBtu)	x	434.7	(billion Btu/year)	= 2,934	(lb-PM_{10}/year)
CO	0.0370	(lb-CO/MMBtu)	x	434.7	(billion Btu/year)	= 16,084	(lb-CO/year)
VOC	0.0086	(lb-VOC/MMBtu)	x	434.7	(billion Btu/year)	= 3,717	(lb-VOC/year)

*Daily emissions limit = 0.036 lb/MMBtu x 1404 MMBtu/day = 50.5 lb NOx/day
CO DAILY – 66.5 lb CO/day

PE1 -Daily Emissions Limits (lb/day)					
Permit Unit	NOx (as NO_2)	SOx (as SO_2)	PM10	CO	VOC
C-311-36-17	23.9	73.0	19.7	51.9	11.9
C-311-37-21	23.9	73.0	19.7	51.9	11.2
C-311-38-21	50.5	73.0	63.2	51.9	11.2
C-311-39-19	50.5	73.0	63.2	51.9	11.2
C-311-40-18	23.9	73.0	63.2	49.1	11.2
C-311-41-15	23.9	73.0	61.8	51.9	11.9
C-311-42-18	50.5	20.1	63.2	51.9	4.2
C-311-43-16	50.5	20.1	63.2	51.9	4.2
C-311-45-15	50.5	20.1	63.2	51.9	4.2
C-311-52-16	50.5	20.1	7.0	51.9	11.2
C-311-53-17	50.5	20.1	7.0	51.9	11.2
C-311-84-16	50.5	20.1	9.5	66.5	12.0

PE1 – Annual Emissions Limits (lb/yr)					
Permit Unit	NOx (as NO_2)	SOx (as SO_2)	PM10	CO	VOC
C-311-36-17	7395	22620	6090	16095	3698
C-311-37-21	7783	23806	6409	16939	3662
C-311-38-21	7783	23806	20601	16939	3662
C-311-39-19	7783	23806	20601	16939	3662
C-311-40-18	7390	22604	19562	15215	3478
C-311-41-15	7395	22620	19575	16095	3480
C-311-42-18	7390	6216	19562	16084	1304
C-311-43-16	7390	6216	19562	16084	1304
C-311-45-15	7390	6216	19562	16084	1304
C-311-52-16	7783	6547	2289	16939	3662
C-311-53-17	7783	6547	2289	16939	3662
C-311-84-16	7390	6216	2934	16084	3717

2. Post-Project Potential to Emit (PE2)

C-311-36

Pollutant	Daily Post-Project Potential to Emit (PE2)											
	Emission Factors			Heat input			Hours per day			Daily PE2		
NO_X	0.0170	(lb-NO_X/MMBtu)	x	62.5	(MMBtu/hr)	x	24	(hr/day)	=	25.5	(lb-NO_X/day)
SO_X	0.05200	(lb-SO_X/MMBtu)	x	62.5	(MMBtu/hr)	x	24	(hr/day)	=	78.0	(lb-SO_X/day)
PM_{10}	0.0140	(lb-PM_{10}/MMBtu)	x	62.5	(MMBtu/hr)	x	24	(hr/day)	=	21.0	(lb-PM_{10}/day)
CO	0.0370	(lb-CO/MMBtu)	x	62.5	(MMBtu/hr)	x	24	(hr/day)	=	55.5	(lb-CO/day)
VOC	0.0085	(lb-VOC/MMBtu)	x	62.5	(MMBtu/hr)	x	24	(hr/day)	=	12.8	(lb-VOC/day)

Pollutant	Annual Post-Project Potential to Emit (PE2)							
	Emission Factors			Annual Max Heat input			Annual PE2	
NO_X	0.0170	(lb-NO_X/MMBtu)	x	435	(billion Btu/year)	=	7,395	(lb-NO_X/year)
SO_X	0.05200	(lb-SO_X/MMBtu)	x	435	(billion Btu/year)	=	22,620	(lb-SO_X/year)
PM_{10}	0.0140	(lb-PM_{10}/MMBtu)	x	435	(billion Btu/year)	=	6,090	(lb-PM_{10}/year)
CO	0.0370	(lb-CO/MMBtu)	x	435	(billion Btu/year)	=	16,095	(lb-CO/year)
VOC	0.0085	(lb-VOC/MMBtu)	x	435	(billion Btu/year)	=	3,698	(lb-VOC/year)

C-311-37

Pollutant	Daily Post-Project Potential to Emit (PE2)											
	Emission Factors			Heat input			Hours per day			Daily PE2		
NO_X	0.0170	(lb-NO_X/MMBtu)	x	62.5	(MMBtu/hr)	x	24	(hr/day)	=	25.5	(lb-NO_X/day)
SO_X	0.05200	(lb-SO_X/MMBtu)	x	62.5	(MMBtu/hr)	x	24	(hr/day)	=	78.0	(lb-SO_X/day)
PM_{10}	0.0140	(lb-PM_{10}/MMBtu)	x	62.5	(MMBtu/hr)	x	24	(hr/day)	=	21.0	(lb-PM_{10}/day)
CO	0.0370	(lb-CO/MMBtu)	x	62.5	(MMBtu/hr)	x	24	(hr/day)	=	55.5	(lb-CO/day)
VOC	0.0080	(lb-VOC/MMBtu)	x	62.5	(MMBtu/hr)	x	24	(hr/day)	=	12.0	(lb-VOC/day)

Pollutant	Annual Post-Project Potential to Emit (PE2)							
	Emission Factors			Annual Max Heat input			Annual PE2	
NO_X	0.0170	(lb-NO_X/MMBtu)	x	457.8	(billion Btu/year)	=	7,783	(lb-NO_X/year)
SO_X	0.05200	(lb-SO_X/MMBtu)	x	457.8	(billion Btu/year)	=	23,806	(lb-SO_X/year)
PM_{10}	0.0140	(lb-PM_{10}/MMBtu)	x	457.8	(billion Btu/year)	=	6,409	(lb-PM_{10}/year)
CO	0.0370	(lb-CO/MMBtu)	x	457.8	(billion Btu/year)	=	16,939	(lb-CO/year)
VOC	0.0080	(lb-VOC/MMBtu)	x	457.8	(billion Btu/year)	=	3,662	(lb-VOC/year)

C-311-38 and '-39

Pollutant	Daily Post-Project Potential to Emit (PE2)										
	Emission Factors			Heat input			Hours per day			Daily PE2	
NO_X	0.0170	(lb-NO_X/MMBtu)	x	62.5	(MMBtu/hr)	x	24	(hr/day)	=	see below	(lb-NO_X/day)
SO_X	0.05200	(lb-SO_X/MMBtu)	x	62.5	(MMBtu/hr)	x	24	(hr/day)	=	78.0	(lb-SO_X/day)
PM_{10}	0.0450	(lb-PM_{10}/MMBtu)	x	62.5	(MMBtu/hr)	x	24	(hr/day)	=	67.5	(lb-PM_{10}/day)
CO	0.0370	(lb-CO/MMBtu)	x	62.5	(MMBtu/hr)	x	24	(hr/day)	=	55.5	(lb-CO/day)
VOC	0.0080	(lb-VOC/MMBtu)	x	62.5	(MMBtu/hr)	x	24	(hr/day)	=	12.0	(lb-VOC/day)

Pollutant	Annual Post-Project Potential to Emit (PE2)						
	Emission Factors			Annual Max Heat input			Annual PE2
NO_X	0.0170	(lb-NO_X/MMBtu)	x	457.8	(billion Btu/year)	=	7,783 (lb-NO_X/year)
SO_X	0.05200	(lb-SO_X/MMBtu)	x	457.8	(billion Btu/year)	=	23,806 (lb-SO_X/year)
PM_{10}	0.0450	(lb-PM_{10}/MMBtu)	x	457.8	(billion Btu/year)	=	20,601 (lb-PM_{10}/year)
CO	0.0370	(lb-CO/MMBtu)	x	457.8	(billion Btu/year)	=	16,939 (lb-CO/year)
VOC	0.0080	(lb-VOC/MMBtu)	x	457.8	(billion Btu/year)	=	3,662 (lb-VOC/year)

*Daily NOx emissions limit = 0.036 lb/MMBtu x 1404 MMBtu/day = 50.5 lb/day

C-311-40

Pollutant	Daily Post-Project Potential to Emit (PE2)										
	Emission Factors			Heat input			Hours per day			Daily PE2	
NO_X	0.0170	(lb-NO_X/MMBtu)	x	62.5	(MMBtu/hr)	x	24	(hr/day)	=	25.5	(lb-NO_X/day)
SO_X	0.05200	(lb-SO_X/MMBtu)	x	62.5	(MMBtu/hr)	x	24	(hr/day)	=	78.0	(lb-SO_X/day)
PM_{10}	0.0450	(lb-PM_{10}/MMBtu)	x	62.5	(MMBtu/hr)	x	24	(hr/day)	=	67.5	(lb-PM_{10}/day)
CO	0.0350	(lb-CO/MMBtu)	x	62.5	(MMBtu/hr)	x	24	(hr/day)	=	52.5	(lb-CO/day)
VOC	0.0080	(lb-VOC/MMBtu)	x	62.5	(MMBtu/hr)	x	24	(hr/day)	=	12.0	(lb-VOC/day)

Pollutant	Annual Post-Project Potential to Emit (PE2)						
	Emission Factors			Annual Max Heat input			Annual PE2
NO_X	0.0170	(lb-NO_X/MMBtu)	x	434.7	(billion Btu/year)	=	7,390 (lb-NO_X/year)
SO_X	0.05200	(lb-SO_X/MMBtu)	x	434.7	(billion Btu/year)	=	22,604 (lb-SO_X/year)
PM_{10}	0.0450	(lb-PM_{10}/MMBtu)	x	434.7	(billion Btu/year)	=	19,562 (lb-PM_{10}/year)
CO	0.0350	(lb-CO/MMBtu)	x	434.7	(billion Btu/year)	=	15,215 (lb-CO/year)
VOC	0.0080	(lb-VOC/MMBtu)	x	434.7	(billion Btu/year)	=	3,478 (lb-VOC/year)

C-311-41

Pollutant	Daily Post-Project Potential to Emit (PE2)										
	Emission Factors			Heat input			Hours per day			Daily PE2	
NO_X	0.0170	(lb-NO_X/MMBtu)	x	62.5	(MMBtu/hr)	x	24	(hr/day)	=	25.5	(lb-NO_X/day)
SO_X	0.05200	(lb-SO_X/MMBtu)	x	62.5	(MMBtu/hr)	x	24	(hr/day)	=	78.0	(lb-SO_X/day)
PM_{10}	0.0440	(lb-PM_{10}/MMBtu)	x	62.5	(MMBtu/hr)	x	24	(hr/day)	=	66.0	(lb-PM_{10}/day)
CO	0.0370	(lb-CO/MMBtu)	x	62.5	(MMBtu/hr)	x	24	(hr/day)	=	55.5	(lb-CO/day)
VOC	0.0085	(lb-VOC/MMBtu)	x	62.5	(MMBtu/hr)	x	24	(hr/day)	=	12.8	(lb-VOC/day)

Pollutant	Annual Post-Project Potential to Emit (PE2)							
	Emission Factors			Annual Max Heat input			Annual PE2	
NO_X	0.0170	(lb-NO_X/MMBtu)	x	435	(billion Btu/year)	=	7,395	(lb-NO_X/year)
SO_X	0.05200	(lb-SO_X/MMBtu)	x	435	(billion Btu/year)	=	22,620	(lb-SO_X/year)
PM_{10}	0.0450	(lb-PM_{10}/MMBtu)	x	435	(billion Btu/year)	=	19,575	(lb-PM_{10}/year)
CO	0.0370	(lb-CO/MMBtu)	x	435	(billion Btu/year)	=	16,095	(lb-CO/year)
VOC	0.0080	(lb-VOC/MMBtu)	x	435	(billion Btu/year)	=	3,480	(lb-VOC/year)

C-311-42, '-43, and '-45

Pollutant	Daily Post-Project Potential to Emit (PE2)										
	Emission Factors			Heat input			Hours per day			Daily PE2	
NO_X	0.0170	(lb-NO_X/MMBtu)	x	62.5	(MMBtu/hr)	x	24	(hr/day)	=	see below	(lb-NO_X/day)
SO_X	0.01430	(lb-SO_X/MMBtu)	x	62.5	(MMBtu/hr)	x	24	(hr/day)	=	21.5	(lb-SO_X/day)
PM_{10}	0.0450	(lb-PM_{10}/MMBtu)	x	62.5	(MMBtu/hr)	x	24	(hr/day)	=	67.5	(lb-PM_{10}/day)
CO	0.0370	(lb-CO/MMBtu)	x	62.5	(MMBtu/hr)	x	24	(hr/day)	=	55.5	(lb-CO/day)
VOC	0.0030	(lb-VOC/MMBtu)	x	62.5	(MMBtu/hr)	x	24	(hr/day)	=	4.5	(lb-VOC/day)

Pollutant	Annual Post-Project Potential to Emit (PE2)							
	Emission Factors			Annual Max Heat input			Annual PE2	
NO_X	0.0170	(lb-NO_X/MMBtu)	x	434.7	(billion Btu/year)	=	7,390	(lb-NO_X/year)
SO_X	0.01430	(lb-SO_X/MMBtu)	x	434.7	(billion Btu/year)	=	6,216	(lb-SO_X/year)
PM_{10}	0.0450	(lb-PM_{10}/MMBtu)	x	434.7	(billion Btu/year)	=	19,562	(lb-PM_{10}/year)
CO	0.0370	(lb-CO/MMBtu)	x	434.7	(billion Btu/year)	=	16,084	(lb-CO/year)
VOC	0.0030	(lb-VOC/MMBtu)	x	434.7	(billion Btu/year)	=	1,304	(lb-VOC/year)

* Daily NOx emissions limit = 0.036 lb/MMBtu x 1404 MMBtu/day = 50.5 lb/day

C-311-52 and '-53

Pollutant	Daily Post-Project Potential to Emit (PE2)											
	Emission Factors			Heat input			Hours per day			Daily PE2		1
NO_X	0.0170	(lb-NO_X/MMBtu)	x	62.5	(MMBtu/hr)	x	24	(hr/day)	=	see below	(lb-NO_X/day)	
SO_X	0.01430	(lb-SO_X/MMBtu)	x	62.5	(MMBtu/hr)	x	24	(hr/day)	=	21.5	(lb-SO_X/day)	
PM_{10}	0.0050	(lb-PM_{10}/MMBtu)	x	62.5	(MMBtu/hr)	x	24	(hr/day)	=	7.5	(lb-PM_{10}/day)	
CO	0.0370	(lb-CO/MMBtu)	x	62.5	(MMBtu/hr)	x	24	(hr/day)	=	55.5	(lb-CO/day)	
VOC	0.0080	(lb-VOC/MMBtu)	x	62.5	(MMBtu/hr)	x	24	(hr/day)	=	12.0	(lb-VOC/day)	

Pollutant	Annual Post-Project Potential to Emit (PE2)							
	Emission Factors			Annual Max Heat input			Annual PI PE1	
NO_X	0.0170	(lb-NO_X/MMBtu)	x	457.8	(billion Btu/year)	=	7,783	(lb-NO_X/year)
SO_X	0.01430	(lb-SO_X/MMBtu)	x	457.8	(billion Btu/year)	=	6,547	(lb-SO_X/year)
PM_{10}	0.0050	(lb-PM_{10}/MMBtu)	x	457.8	(billion Btu/year)	=	2,289	(lb-PM_{10}/year)
CO	0.0370	(lb-CO/MMBtu)	x	457.8	(billion Btu/year)	=	16,939	(lb-CO/year)
VOC	0.0080	(lb-VOC/MMBtu)	x	457.8	(billion Btu/year)	=	3,662	(lb-VOC/year)

* Daily NOx emissions limit = 0.036 lb/MMBtu x 1404 MMBtu/day = 50.5 lb/day

C-311-84:

Pollutant	Daily Post-Project Potential to Emit (PE2)											
	Emission Factors			Heat input			Hours per day			Daily PE2		
NO_X	0.0170	(lb-NO_X/MMBtu)	x	62.5	(MMBtu/hr)	x	24	(hr/day)	=	see below	(lb-NO_X/day)	
SO_X	0.01430	(lb-SO_X/MMBtu)	x	62.5	(MMBtu/hr)	x	24	(hr/day)	=	21.5	(lb-SO_X/day)	
PM_{10}	0.0068	(lb-PM_{10}/MMBtu)	x	62.5	(MMBtu/hr)	x	24	(hr/day)	=	10.1	(lb-PM_{10}/day)	
CO	0.0370	(lb-CO/MMBtu)	x	62.5	(MMBtu/hr)	x	24	(hr/day)	=	55.5	(lb-CO/day)	
VOC	0.0086	(lb-VOC/MMBtu)	x	62.5	(MMBtu/hr)	x	24	(hr/day)	=	12.8	(lb-VOC/day)	

Pollutant	Annual Post-Project Potential to Emit (PE2)							
	Emission Factors			Annual Max Heat input			Annual PE2	
NO_X	0.0170	(lb-NO_X/MMBtu)	x	434.7	(billion Btu/year)	=	7,390	(lb-NO_X/year)
SO_X	0.01430	(lb-SO_X/MMBtu)	x	434.7	(billion Btu/year)	=	6,216	(lb-SO_X/year)
PM_{10}	0.0068	(lb-PM_{10}/MMBtu)	x	434.7	(billion Btu/year)	=	2,934	(lb-PM_{10}/year)
CO	0.0370	(lb-CO/MMBtu)	x	434.7	(billion Btu/year)	=	16,084	(lb-CO/year)
VOC	0.0086	(lb-VOC/MMBtu)	x	434.7	(billion Btu/year)	=	3,717	(lb-VOC/year)

*Daily NOx emissions limit = 0.036 lb/MMBtu x 1404 MMBtu/day = 50.5 lb/day

CO daily emissions limit = 66.5 lb/day

PE2 -Daily Emissions Limits (lb/day)					
Permit Unit	NOx (as NO_2)	SOx (as SO_2)	PM1 0	CO	VOC
C-311-36-20	25.5	78.0	21.0	55.5	12.8
C-311-37-25	25.5	78.0	21.0	55.5	12.0
C-311-38-24	50.5	78.0	67.5	55.5	12.0
C-311-39-22	50.5	78.0	67.5	55.5	12.0
C-311-40-21	25.5	78.0	67.5	52.5	12.0
C-311-41-18	25.5	78.0	66.0	55.5	12.8
C-311-42-20	50.5	21.5	67.5	55.5	4.5
C-311-43-18	50.5	21.5	67.5	55.5	4.5
C-311-45-18	50.5	21.5	67.5	55.5	4.5
C-311-52-19	50.5	21.5	7.5	55.5	12.0
C-311-53-20	50.5	21.5	7.5	55.5	12.0
C-311-84-18	50.5	21.5	10.1	66.5	12.8

There is no change in annual emissions.

PE2 – Annual Emissions Limits (lb/yr)					
Permit Unit	NOx (as NO_2)	SOx (as SO_2)	PM10	CO	VOC
C-311-36-20	7395	22620	6090	16095	3698
C-311-37-25	7783	23806	6409	16939	3662
C-311-38-24	7783	23806	20601	16939	3662
C-311-39-22	7783	23806	20601	16939	3662
C-311-40-21	7390	22604	19562	15215	3478
C-311-41-18	7395	22620	19575	16095	3480
C-311-42-20	7390	6216	19562	16084	1304
C-311-43-18	7390	6216	19562	16084	1304
C-311-45-18	7390	6216	19562	16084	1304
C-311-52-19	7783	6547	2289	16939	3662
C-311-53-20	7783	6547	2289	16939	3662
C-311-84-18	7390	6216	2934	16084	3717

Greenhouse Gas (GHG) Emissions

As there is no change in annual emissions no change in GHG emissions is expected.

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

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

Applicant has stated that facility emissions are already above the Offset and Major Source Thresholds for all criteria pollutant emissions; therefore, SSPE1 calculations are not necessary.

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

Applicant has stated that facility emissions are already above the Offset and Major Source Thresholds for all criteria pollutant emissions; therefore, SSPE2 calculations are not necessary.

5. Major Source Determination

Pursuant to Section 3.23 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.

Major Source Threshold (lb/year)					
	NO_X	SO_X	PM_{10}	CO	VOC
Major Source Threshold	20,000	140,000	140,000	200,000	20,000

This source is an existing Major Source for all criteria pollutant emissions and will remain a Major Source for all criteria pollutant emissions.

6. Baseline Emissions (BE)

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

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

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

otherwise,

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

Clean Emissions Unit, Located at a Major Source
Pursuant to Rule 2201, 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.

The emissions units are clean emissions units as they satisfy the following requirements of current BACT Guideline and BACT Guideline 1.2.1 3rd Quarter 2008:

BACT Guideline 1.2.1 3rd Quarter 2008

NO_X: 14 ppmvd @ 3% O_2*

Current BACT Requirement

SO_X: 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_2 scrubber and either achieving 95% by weight control of sulfur compounds or achieving an emission rate of 30 ppmvd SO_2 at stack O_2.**

PM_{10}: 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_2 scrubber and either achieving 95% by weight control of sulfur compounds or achieving an emission rate of 30 ppmvd SO_2 at stack O_2.**

CO: 50 ppmvd @ 3% O_2

VOC: Gaseous fuel

*The PTOs have the existing limit of 15 ppmv @ 3% O_2 but operate at less than 14 ppmv @ 3% O_2 per source test results. The permitted NOx emissions limit is lowered to 14 ppmv @ 3% O_2 in this project.

The steam generators are clean emissions units for SOx and PM10.ATCs will include a condition requiring 1 gr S/100 scf or 95 % control and representative laboratory analyses (**Attachment IV**) have shown that the combusted gas contains less than 1 grS/100scf.

7. SB 288 Major Modification

SB 288 Major Modification is defined in 40 CFR Part 51.165 (as in effect on December19, 2002) 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.*" Significant net emissions increase is defined in reference to a net emissions increase or the potential of a source to emit any of the following pollutants at a major stationary source locating in a severe ozone nonattainment area, a rate of emissions that would equal or exceed any of the following rates:

SB 288 Major Modification Thresholds (lb/year)	
POLLUTANT	THRESHOLD
VOC	50,000
NO_x	50,000
PM_{10}	30,000
SO_x	80,000

The applicant has provided actual fuel use for the years 2010 and 2011. Fuel use, actual emissions, proposed emissions and the resulting net emissions increase is included in **Attachment V** and summarized in the following table:

SB 288 Major Modification (lb/year)				
	NO_x	SO_x	PM_{10}	VOC
Net Project Increases	48,870	76,824	66,667	20,018
Threshold	50,000	80,000	30,000	50,000
SB 288 Major Mod?	No	No	Yes	No

Therefore, the project is a SB 288 Major Modification for PM_{10} only.

8. Federal Major Modification (please refer to detailed calculation by applicant in Attachment VI)

For existing emissions units, the increase in emissions is calculated as follows.

Emission Increase = PAE – BAE - UBC

Where: PAE = Projected Actual Emissions, and
BAE = Baseline Actual Emissions
UBC = Unused baseline capacity

NOx:

Assume BAE = 0 (worst case)

PAE: Projected emissions in any one future year based on PE (no calculation provided by applicant)

Projected annual hours of operation are calculated from PTO condition limiting annual heat input (e.g. 457,800 MMBtu/yr) and post project heat input rating (62.5 MMBtu/hr) as 457,800/62.5 = 7325 hr/yr.

Therefore PAE = 62.5 MMBtu/hr x 7325 hr/yr x 0.017 lb/MMbtu
= 7783 lb NOx/yr

Annual hours of operation during the baseline period are calculated from the annual heat input limit and pre-project heat input rating (legal limits)

457,800/58.5 = 7826 hr/yr

UBC* = 58.5 MMBtu/hr x 7826 hr/yr x 0.018 lb/MMBtu
= 8241 lb/yr

* Emissions that unit could have accommodated (legally and physically) based on the daily heat input limitation x 365 days/yr

Emissions increase = -458 lb/yr

As the emissions increase is less than zero, the project is not a Federal Major Modification for NOx.

VOC:

Assume BAE = 0 (worst case)

For VOC the calculation is identical except that the VOC emissions factor of 0.003 lb/MMBtu is used for both PAE and UBC as follows:.

PAE = 62.5 MMBtu/hr x 7325 hr/yr x 0.003 lb/MMbtu
= 1373 lb NOx/yr

UBC* = 58.5 MMBtu/hr x 7826 hr/yr x 0.003 lb/MMBtu
= 1373 lb/yr

* Emissions that unit could have accommodated based on the daily heat input limitation x 365 days/yr

Emissions increase = 0 lb/yr

As the emissions increase is less than zero, the project is not a Federal Major Modification for VOC.

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. There is no change in annual emissions of NOx, SOx, PM10, CO, and VOCs and therefore QNEC = 0.

VIII. Compliance

Rule 2201 New and Modified Stationary Source Review Rule

A. Best Available Control Technology (BACT)

1. BACT Applicability

BACT requirements are triggered on a pollutant-by-pollutant basis and on an emissions unit-by-emissions unit basis. Unless exempted pursuant to Section 4.2, BACT shall be required for the following actions:*:

a. Any new emissions unit with a potential to emit exceeding two pounds per day,
b. The relocation from one Stationary Source to another of an existing emissions unit with a potential to emit exceeding two pounds per day,
c. Modifications to an existing emissions unit with a valid Permit to Operate resulting in an AIPE exceeding two pounds per day, and/or
d. Any new or modified emissions unit, in a stationary source project, which results in an SB288 Major Modification or a Federal Major Modification, as defined by the rule.

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

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

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

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

As discussed in Section I above, there 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

AIPE = PE2 – HAPE

Where,
AIPE = Adjusted Increase in Permitted Emissions, (lb/day)
PE2 = Post-Project Potential to Emit, (lb/day)
HAPE = Historically Adjusted Potential to Emit, (lb/day)

HAPE = PE1 x (EF2/EF1)

Where,

PE1 = The emissions unit's Potential to Emit prior to modification or relocation, (lb/day)
EF2 = The emissions unit's permitted emission factor for the pollutant after modification or relocation. If EF2 is greater than EF1 then EF2/EF1 shall be set to 1
EF1 = The emissions unit's permitted emission factor for the pollutant before the modification or relocation

AIPE = PE2 – (PE1 * (EF2 / EF1))

EF2 = EF1 and therefore AIPE = PE2 – PE1
= Increase in Permitted Emissions (lb/day)

Permit Unit	NOx (as NO_2)	SOx (as SO_2)	PM10	CO	VOC
C-311-36**	1.6	**5.0**	1.3	**3.6**	0.9
C-311-37**	1.6	**5.0**	1.3	**3.6**	0.8
C-311-38**	0	**5.0**	**4.3**	**3.6**	0.8
C-311-39**	0	**5.0**	**4.3**	**3.6**	0.8
C-311-40**	1.6	**5.0**	**4.3**	**3.4**	0.8
C-311-41**	1.6	**5.0**	**4.2**	**3.6**	0.9
C-311-42	0	1.4	**4.3**	**3.6**	0.3
C-311-43	0	1.4	**4.3**	**3.6**	0.3
C-311-45	0	1.4	**4.3**	**3.6**	0.3
C-311-52	0	1.4	0.5	**3.6**	0.8
C-311-53	0	1.4	0.5	**3.6**	0.8
C-311-84	0	1.4	0.6	0	0.8

*bold > 2 lb/day
** units equipped with scrubber

NOx: BACT is not required as the AIPE is less than 2 lb/day
SOx: BACT is required for units '-36 through '-41 as the AIPE is greater than 2 lb/day
PM10: BACT is required for units '-38 through '-43, and '-45 as the AIPE is greater than 2 lb/day
CO: BACT is required for all emissions units except unit '-84 as the AIPE is greater than 2 lb/day and the C-311 SSPE exceeds 200,000 lb/yr
VOC: BACT is not required as the AIPE is less than 2 lb/day

d. SB 288/Federal Major Modification

As discussed in Section VII.C.7 above, this project constitutes a SB 288 Major Modification for PM_{10} emissions; therefore BACT for PM_{10} is required for all emissions units with an increase exceeding 0.5 lb/day in the project pursuant to District Rule 2201 Section 4.1.3 (all units except C-311-52 and '-53).

2. BACT Guideline

The current SOx, PM10, CO, and VOC requirements are based BACT Guideline 1.2.1 "Steam Generator (≥ 5 MMBtu/hr, Oilfield)" which has been rescinded because the NOx requirement is less stringent than Rule 4320.

Current BACT Requirement

SO_X: 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_2 scrubber and either achieving 95% by weight control of sulfur compounds or achieving an emission rate of 30 ppmvd SO_2 at stack O_2.

PM_{10}: 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_2 scrubber and either achieving 95% by weight control of sulfur compounds or achieving an emission rate of 30 ppmvd SO_2 at stack O_2.

CO: 50 ppmvd @ 3% O_2

VOC: Gaseous fuel

3. Top-Down BACT Analysis

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

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

SO_X: 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_2 scrubber and either achieving 95% by weight control of sulfur compounds or achieving an emission rate of 30 ppmvd SO_2 at stack O_2.

PM_{10}: 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_2 scrubber and either achieving 95% by weight control of sulfur compounds or achieving an emission rate of 30 ppmvd SO_2 at stack O_2.

CO: 50 ppmvd @ 3% O_2

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.

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

Offset Determination (lb/year)					
	NO_X	SO_X	PM_{10}	CO	VOC
Post Project SSPE (SSPE2)	>20,000	>54,750	>29,200	>200,000	>20,000
Offset Threshold	20,000	54,750	29,200	200,000	20,000
Offsets calculations required?	Yes	Yes	Yes	Yes	Yes

2. Quantity of Offsets Required

As seen above, the facility is an existing Major Source for NO_X, SO_X, PM10, CO, and VOCs and the SSPE2 is greater than the offset thresholds; 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 NO_X is calculated as follows for sources with an SSPE1 greater than the offset threshold levels before implementing the project being evaluated.

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

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

BE = Pre-project Potential to Emit for:

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

otherwise,

BE = Historic Actual Emissions (HAE)

As calculated in Section VII.C.6 above, the Baseline Emissions (BE) from these units are equal to the Pre-Project Potential to Emit (PE1) since the units are Clean Emissions Unit. Additionally, there is no increase in annual emissions and therefore offsets are not required.

C. Public Notification

1. Applicability

Public noticing is required for:
a. New Major Sources, Federal Major Modifications, and SB288 Major Modifications,
b. Any new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any one pollutant,
c. Any project which results in the offset thresholds being surpassed, and/or
d. Any project with an SSIPE of greater than 20,000 lb/year for any pollutant.

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

New Major Sources are new facilities, which are also Major Sources. Since this project is a SB 288 Major Modification for PM10, public noticing is required for this project for New Major Source, Federal Major Modifications, and SB288 Major Modifications purposes.

b. PE > 100 lb/day

Applications which include a new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any pollutant will trigger public noticing requirements. There are no new emissions units associated with this project; therefore public noticing is not required for this project for Potential to Emit Purposes.

c. Offset Threshold

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

Offset Threshold				
Pollutant	SSPE1 (lb/year)	SSPE2 (lb/year)	Offset Threshold	Public Notice Required?
NO_X	>20,000 lb/year	>20,000 lb/year	20,000 lb/year	No
SO_X	>54,750 lb/year	>54,750 lb/year	54,750 lb/year	No
PM_{10}	>29,200 lb/year	>29,200 lb/year	29,200 lb/year	No
CO	>200,000 lb/year	>200,000 lb/year	200,000 lb/year	No
VOC	>20,000 lb/year	>20,000 lb/year	20,000 lb/year	No

As detailed above, there were no thresholds surpassed with this project; therefore public noticing is not required for offset purposes.

d. SSIPE > 20,000 lb/year

Public notification is required for any permitting action that results in a Stationary Source Increase in Permitted Emissions (SSIPE) of more than 20,000 lb/year of any affected pollutant. According to District policy, the SSIPE is calculated as the Post Project Stationary Source Potential to Emit (SSPE2) minus the Pre-Project Stationary Source Potential to Emit (SSPE1), i.e. SSIPE = SSPE2 – SSPE1. The values for SSPE2 and SSPE1 are calculated according to Rule 2201, Sections 4.9 and 4.10, respectively. The SSIPE is compared to the SSIPE Public Notice thresholds in the following table:

Stationary Source Increase in Permitted Emissions [SSIPE] – Public Notice					
Pollutant	SSPE2 (lb/year)	SSPE1 (lb/year)	SSIPE (lb/year)	SSIPE Public Notice Threshold	Public Notice Required?
NO_x	>20,000 lb/year	>20,000 lb/year	0	20,000 lb/year	No
SO_x	>54,750 lb/year	>54,750 lb/year	0	20,000 lb/year	No
PM_{10}	>29,200 lb/year	>29,200 lb/year	0	20,000 lb/year	No
CO	>200,000 lb/year	>200,000 lb/year	0	20,000 lb/year	No
VOC	>20,000 lb/year	>20,000 lb/year	0	20,000 lb/year	No

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

2. Public Notice Action

As discussed above, this project will result in a SB288 Major Modification. Therefore, public notice is required for this project.

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.

Current and Proposed Rule 2201 (DEL) Conditions:

The NOx emissions limit has been lowered from 15 ppmv @ 3% O2 (0.018 lb/MMBtu) to 14 ppmv @ 3% O2 (0.017 lb/MMBtu).

The following condition is deleted (strikeout text) and replaced by the underlined condition:

'-36 through '-42

~~'-36 th9. Whenever well casing vapors and/or tank vapor recovery gas are being burned in this unit, the SO2 scrubber shall operate and shall reduce SO2 emissions by 95% by weight, or shall limit exhaust SO2 to less than or equal to 9 ppmv corrected to 3.0% oxygen. [District Rules 2201 and 4320] N~~

Fuel gas sulfur content shall not exceed 1 gr S/100 scf unless SOx is reduced by 95% or to 9 ppmv SOx @ 3% O2 in exhaust with scrubber. [District Rule 2201]

'-42, '-43, '-45 (underlined condition added to existing condition (in normal type)

Fuel gas shall not contain more than 5 grains of total sulfur per 100 standard cubic feet. [District Rule 4320] Y

Fuel gas sulfur content shall not exceed 1 gr S/100 scf unless SOx is reduced by 95% or to 9 ppmv SOx @ 3% O2 in exhaust with scrubber. [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*, District Rule 4306, *Boilers, Steam Generators and Process Heaters, Phase 3, and District Rule 4320 Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters Greater than 5.0 MMBtu/hr*. Source testing requirements, in accordance with District Rules 4305, 4306, and 4320 will be discussed in Section VIII, District Rule4320 of this evaluation.

2. Monitoring

As required by *District Rule 4305, Boilers, Steam Generators and Process Heaters, Phase 2, District Rule 4306, Boilers, Steam Generators and Process Heaters, Phase 3, and District Rule 4320 Advanced Emission Reduction Options for Boilers, Steam*

Generators, and Process Heaters Greater than 5.0 MMBtu/hr, this unit is subject to monitoring requirements. Monitoring requirements, in accordance with District Rules 4305, 4306, and 4320 will be discussed in Section VIII, District Rule 4320 of this evaluation.

3. Recordkeeping

As required by *District Rule 4305, Boilers, Steam Generators and Process Heaters, Phase 2, District Rule 4306, Boilers, Steam Generators and Process Heaters, Phase 3, and District Rule 4320 Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters Greater than 5.0 MMBtu/hr*, this unit is subject to recordkeeping requirements. Recordkeeping requirements, in accordance with District Rules 4305, 4306, and 4320 will be discussed in Section VIII, District Rule 4320 of this evaluation.

4. Reporting

No reporting is required to demonstrate compliance with Rule 2201.

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:

In accordance with Rule 2520, 3.20, these modifications:

1. Do not violate requirements of any applicable federally enforceable local or federal requirement;
2. Do not relax monitoring, reporting, or recordkeeping requirements in the permit and are not significant changes in existing monitoring permit terms or conditions;
3. Do not require or change a case-by-case determination of an emission limitation or other standard, or a source-specific determination for temporary sources of ambient impacts, or a visibility or increment analysis;
4. Do not seek to establish or change a permit term or condition for which there is no corresponding underlying applicable requirement and that the source has assumed to avoid an applicable requirement to which the source would otherwise be subject. Such terms and conditions include:
    a. A federally enforceable emission cap assumed to avoid classification as a modification under any provisions of Title I of the Federal Clean Air Act; and
    b. An alternative emissions limit approved pursuant to regulations promulgated under section 112(i)(5) of the Federal Clean Air Act; and
5. Are not Title I modifications as defined in District Rule 2520 or modifications as defined in section 111 or 112 of the Federal Clean Air Act; and
6. Do not seek to consolidate overlapping applicable requirements.

As discussed above, the facility has applied for a Certificate of Conformity (COC). The facility may construct/operate under the ATC upon submittal of the Title V administrative amendment application. The Title V Compliance Certification form is included in **Attachment VIII**. Continued compliance with 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).

The subject steam generators have a rating of 62.5 MMBtu/hr and are fired on natural/TEOR 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.

District Rule 4101 Visible Emissions

District Rule 4101, Section 5.0, indicates that 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 dark or darker than Ringlemann 1 or equivalent to 20% opacity.
The subject steam generators combust natural gas or treated waste gas only and therefore compliance is expected.

District Rule 4102 Nuisance

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

California Health & Safety Code 41700 (Health Risk Assessment)

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

Since the applicant is proposing an increase in hourly emissions (fuel usage) with this project, a Health Risk Assessment (HRA) is necessary. However, a 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 IX)**, the total facility prioritization score including this project was greater than one. Therefore, a health risk assessment was required to determine the short-term acute and long-term chronic exposure from this project.

The results of the HRA showed that the Acute Hazard Risk was below 1.0. The Chronic Hazard and Maximum Cancer Risk were not calculated as there was no increase in annual emissions.

HRA Summary		
Unit	Cancer Risk	T-BACT Required
C-311-36-20, C-311-37-25, C-311-38-24, C-311-39-22, C-311-40-21, C-311-41-18, C-311-42-20, C-311-43-18, C-311-45-18, C-311-52-19, C-311-53-20, and C-311-84-18	not applicable	No

*The project initially included 27 steam generators but was revised to a subset of 12 steam generators. Therefore, the result is conservatively high.

The project is approved without TBACT. All the ATCs must include the following condition:

{1898} The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102] N

Rule 4201 Particulate Matter Concentration

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

F-Factor for NG: 8,578 dscf/MMBtu at 60 °F
PM_{10} Emission Factor: 0.045 lb-PM_{10}/MMBtu (worst case)
Percentage of PM as PM_{10} in Exhaust: 100%
Exhaust Oxygen (O_2) Concentration: 3%

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

$$GL = \left(\frac{0.045\ lb-PM}{MMBtu} \times \frac{7{,}000\ grain}{lb-PM} \right) / \left(\frac{8{,}578\ ft^3}{MMBtu} \times\ 1.17 \right)$$

$$GL = 0.03\ \ grain/dscf < 0.1\ grain/dscf$$

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

District Rule 4301 Fuel Burning Equipment

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

District Rule 4301 Limits			
Pollutant	**NO_2**	**Total PM**	**SO_2**
C-311-39 (lb/hr) – worst case	62.5 x 0.018 =1.125	62.5 x 0.045 = 2.81	62.5 x 0.052 = 3.25
Rule Limit (lb/hr)	140	10	200

The above table indicates compliance with the maximum lb/hr emissions in this rule; therefore, continued compliance is expected.

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

The subject unit(s) is subject to Rule 4305, *Boilers, Steam Generators and Process Heaters – Phase 2.*

In addition, the unit(s) is also subject to District Rule 4320.
Since emissions limits of 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.

Therefore, compliance with District Rule 4305 requirements is expected and no further discussion is required.

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

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.

Therefore, compliance with District Rule 4306 requirements is expected and no further discussion is required.

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

Section 5.2 NOx and CO Emission Limits

The units are do not comply with the NOx limits in Table 2 for oil field steam generators greater than 20 MMBtu/hr. However the units are in compliance as they are either DEUs or emissions fee units subject to Section 5.1.2.

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_2 emissions by at least 95% by weight; or limit exhaust SO_2 to less than or equal to 9 ppmv corrected to 3.0% O2 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.

The units are in compliance with either item 2 or 3 above.

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.

The base documents and proposed ATCs include conditions for startup and shutdown.

Section 5.7, Monitoring Provisions

No change to alternate monitoring is proposed.

5.7.6 Monitoring SOx Emissions

The units are currently operating in compliance with these requirements. No proposed changes to these requirements are proposed.

Section 5.8, Compliance Determination

The units currently operate in compliance with the Compliance Determination requirements of Section 5.8. No proposed changes to these requirements are proposed.

Section 6.1 Recordkeeping

No proposed changes to recordkeeping requirements are proposed.

Section 6.2 Test Methods

No proposed changes to test methods are proposed.

Section 6.3 Compliance Testing

No proposed changes to compliance testing are proposed.

Conclusion

Compliance with District Rule 4320 requirements is expected.

District Rule 4801 Sulfur Compounds

A person shall not discharge into the atmosphere sulfur compounds, which would exist as a liquid or gas at standard conditions, exceeding in concentration at the point of discharge: 0.2 % by volume calculated as SO_2, on a dry basis averaged over 15 consecutive minutes.

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

Volume $SO_2 = \frac{n\,RT}{P}$

With:

N = moles SO_2
T (Standard Temperature) = 60°F = 520°R
P (Standard Pressure) = 14.7 psi
R (Universal Gas Constant) = $\frac{10.73\,\text{psi}\cdot\text{ft}^3}{\text{lb}\cdot\text{mol}\cdot{}^\circ\text{R}}$

$$\frac{0.052\,lb-SOx}{MMBtu}\times\frac{MMBtu}{8{,}578\,dscf}\times\frac{1\,lb\cdot mol}{64\,lb}\times\frac{10.73\,psi\cdot ft^3}{lb\cdot mol\cdot{}^\circ R}\times\frac{520{}^\circ R}{14.7\,psi}\times\frac{1{,}000{,}000\cdot parts}{million}=36\frac{parts}{million}$$

$SulfurConcentration = 36\frac{parts}{million}$ < 2,000 ppmv (or 0.2%)

Compliance has been demonstrated using the highest SOx emissions factor. Therefore, continued compliance with District Rule 4801 requirements is expected.

California Health & Safety Code 42301.6 (School Notice)

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

California Environmental Quality Act (CEQA)

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; and

- Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

Greenhouse Gas (GHG) Significance Determination

It is determined that no other agency has or will prepare an environmental review document for the project. Thus the District is the Lead Agency for this project. The District's engineering evaluation (this document) demonstrates that the project would not result in an increase in project specific greenhouse gas emissions. The District therefore concludes that the project would have a less than cumulatively significant impact on global climate change.

District CEQA Findings

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

IX. Recommendation

Compliance with all applicable rules and regulations is expected. Compliance with all applicable rules and regulations is expected. Pending a successful School Noticing period, issue Authorities to Construct C-311-36-20, C-311-37-25, C-311-38-24, C-311-39-22, C-311-40-21, C-311-41-18, C-311-42-20, C-311-43-18, C-311-45-18, C-311-52-19, C-311-53-20, and C-311-84-18 subject to the permit conditions on the attached draft Authority to Construct in **Attachment X.**

X. Billing Information

Annual Permit Fees			
Permit Number	Fee Schedule	Fee Description	Annual Fee
All permit units in Project	3020-02-H	62.5 MMBtu/hr	$1030.00

Attachments

I: Base Document ATCs and Current PTOs
II: Source Test Data
III: Emissions Profiles
IV: Representative Gas Analysis
V: SB288 Major Modification Calculation
VI: Federal Major Modification Calculation
VII: BACT Analysis
VIII: Title V Compliance Certification Form
IX: HRA Summary
X: Draft ATCs

ATTACHMENT I
Base Document ATCs and Current PTOs

San Joaquin Valley
Air Pollution Control District

PERMIT UNIT: C-311-36-13 **EXPIRATION DATE:** 12/31/2016

SECTION: 25 **TOWNSHIP:** 20S **RANGE:** 14E

EQUIPMENT DESCRIPTION:
58.5 MMBTU/HR STRUTHERS THERMOFLOOD MODEL OH-50-ND-16XAM NATURAL GAS/LPG/WELL CASING GAS/TANK VAPOR RECOVERY GAS-FIRED STEAM GENERATOR (SG #25-15) WITH A NORTH AMERICAN MODEL MAGNA-FLAME GLE LOW NOX BURNER SERVED BY THE 25D NEPTUNE AIRPOL CAUSTIC SCRUBBER WHEN FIRING WELL CASING AND/OR TANK VAPOR RECOVERY GAS FROM SECTIONS 25D AND 6C ONLY

PERMIT UNIT REQUIREMENTS

1. This unit shall be fueled with natural gas, LPG, or a blend of natural gas and well casing and tank vapor recovery (TVR) gas. [District NSR Rule] 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. 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. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
5. Total LPG, casing gas, waste gas, and natural gas consumption shall not exceed 435,000 MMBtu/year. [District NSR Rule] Federally Enforceable Through Title V Permit
6. The permittee shall maintain and operate a non-resettable, totalizing mass or volumetric flow meter in the fuel line to the steam generator. [District Rule 2201] Federally Enforceable Through Title V Permit
7. The caustic scrubber shall be operated to control SOx emissions when ever the steam generator is fueled with well casing and/or TVR gas. [District NSR Rule] Federally Enforceable Through Title V Permit
8. Scrubber liquor pH shall be maintained between 6.5 and 8.0. [District NSR Rule] Federally Enforceable Through Title V Permit
9. Tray packing flowrate shall be operated at 700 to 840 gallons/minute. [District NSR Rule] Federally Enforceable Through Title V Permit
10. Quench flowrate shall be operated at 145 to 185 gallons/minute. [District NSR Rule] Federally Enforceable Through Title V Permit
11. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, each fuel source shall be tested weekly for sulfur content and higher heating value. If compliance with the fuel sulfur content limit and sulfur emission limits has been demonstrated for 8 consecutive weeks for a fuel source, then the fuel testing frequency shall be semi-annually. If a semi-annual fuel content source test fails to show compliance, weekly testing shall resume. [District Rule 2520] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

12. When complying with SOx emission limits by testing of stack emissions, testing shall be performed not less than once every 12 months using EPA Method 6; or ARB Method 100; or, for units using gaseous fuel scrubbed for sulfur pre-combustion, the sulfur content of the gaseous fuel being fired in the unit shall be determined using ASTM D 1072, D 3031, D 4084, D 3246 or a grab sample analysis by GC-FPD/TCD or double GC for H2S and mercaptans performed in the laboratory and EPA Method 19 to calculated emissions. Gaseous fuel fired units demonstrating compliance on two consecutive annual source tests shall be tested not less than once every thirty-six months, however annual source testing shall resume if any test fails to show compliance. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

13. If the unit is fired on noncertified gaseous fuel and compliance with SOx emission limits is achieved through fuel sulfur content limitations, then the sulfur content of the gaseous fuel being fired in the unit shall be determined using ASTM D 1072, D 3031, D 4084, D 3246 or grab sample analysis by GC-FPD/TCD or double GC for H2S and mercaptans performed in the laboratory. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

14. If fuel analysis is used to demonstrate compliance with the conditions of this permit, the fuel higher heating value for each fuel shall be certified by third party fuel supplier or determined by: D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District Rules 2520, 4305, and 4351] Federally Enforceable Through Title V Permit

15. Except during start-up and shutdown periods, emissions from the steam generator shall not exceed any of the following limits: 15 ppmvd NOx @ 3% O2 or 0.018 lb-NOx/MMBtu, 0.052 lb-SOx/MMBtu, 0.014 lb-PM10/MMBtu, 50 ppmvd CO @ 3% O2 or 0.037 lb-CO/MMBtu, or 0.0085 lb-VOC/MMBtu. [District Rules 2201, 4301, 4305, and 4306] Federally Enforceable Through Title V Permit

16. During start-up and shutdown periods emissions from the steam generator shall not exceed either of the following limits: 0.1 lb-NOx/MMBtu or 0.084 lb-CO/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit

17. Duration of start-up or shutdown shall not exceed two hours each per occurrence. During start-up or shutdown, the emissions control system shall be in operation, and emissions shall be minimized insofar as technologically possible. the operator shall maintain daily records of the duration of start-up and shutdown periods. [District Rule 2201] Federally Enforceable Through Title V Permit

18. 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] Federally Enforceable Through Title V Permit

19. Maximum emissions from the steam generator, including start-up and shutdown, shall not exceed any of the following limits: 50.5 lb-NOx/day, 7,830 lb-NOx/year, 49.1 lb-CO/day, or 16,095 lb-CO/year. [District Rule 2201] Federally Enforceable Through Title V Permit

20. 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

21. 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 and 4306] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

22. 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

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

24. 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

25. 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

26. 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

27. 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

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. 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

30. CO emissions for source test purposes shall be determined using EPA Method 10, 10B, or ARB Method 100. [District Rule 2520, 9.3.2 and 4305] Federally Enforceable Through Title V Permit

31. 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

32. 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

33. All required source testing shall conform to the compliance testing procedures described in District Rule 1081 (Amended December 16, 1993). [District Rule 1081, and County Rules 108 (Kings), 108.1 (Fresno, Merced, San Joaquin, Tulare, Kern, and Stanislaus), and 110 (Madera)] Federally Enforceable Through Title V Permit

34. Copies of all gas purchase contracts, supplier certifications, and test results to determine compliance with the conditions of this permit shall be maintained. The operator shall record daily amount and type(s) of fuel(s) combusted, fuel source, and all dates on which unit is fired on any noncertified fuel and record specific type of noncertified fuel used. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

35. Permittee shall record natural gas, propane, casing gas, and waste gas consumption. [District Rule 1070 and 2520, 9.4.2] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

36. Permittee shall measure and record the BTU content of the gas burned at the time of NOx testing, except for natural gas purchased from a PUC regulated utility. [District NSR Rule and 4801] Federally Enforceable Through Title V Permit

37. Permittee shall maintain with the permit a current listing of all TEOR and TVR systems providing vapor to this steam generator and shall make such listing readily available for District inspection upon request [District NSR Rule] Federally Enforceable Through Title V Permit

38. Permittee shall maintain daily records of volume of fuel gas burned, TEOR/TVR gas incinerated, and permit number(s) of systems providing gas for incineration. [District NSR Rule] Federally Enforceable Through Title V Permit

39. All records shall be maintained and retained on-site for a period of at least 5 years and shall be made available for District inspection upon request. [District Rules 1070, 4305, and 4306] Federally Enforceable Through Title V Permit

40. Pursuant to Rule 4320, beginning in 2010 the operator shall pay an annual emission fee to the District for NOx emissions from this unit for the previous calendar year. Payments are due by July 1 of each year. Payments shall continue annually until either the unit is permanently removed from service in the District or the operator demonstrates compliance with the applicable NOx emission limit listed in Rule 4320. [District Rule 4320] Federally Enforceable Through Title V Permit

41. On and after July 1, 2010, the permittee shall submit an analysis showing the fuel's sulfur content at least once every year. Valid purchase contracts, supplier certifications, tariff sheets, or transportation contacts may be used to satisfy this requirement, provided they establish the fuel parameters mentioned above. [District Rule 4320] Federally Enforceable Through Title V Permit

42. Permittee shall maintain records of annual heat input (MMBtu) for this unit on a calendar year basis. Such 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 and Rule 4320] Federally Enforceable Through Title V Permit

43. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following requirements of SJVUAPCD Rules 4201 (Amended December 17, 1992), and 4301 (Amended December 17, 1992). A permit shield is granted from these requirements. [District Rule 2520] Federally Enforceable Through Title V Permit

44. Compliance with permit conditions in the Title V permit shall be deemed compliance with the requirements of County Rules 108 (Kings), 108.1 (Fresno, Merced, San Joaquin, Tulare, Kern, and Stanislaus), and 110 (Madera), 402 (Madera), 404 (Fresno, Kern, Tulare, Kings, Stanislaus, Merced, and San Joaquin), 405 (Madera), 408 (Fresno, Kern, Tulare, Kings, Stanislaus, Merced, and San Joaquin), 407.2 (Kern, Tulare, Kings, Stanislaus, and San Joaquin), and 408.2 (Merced). A permit shield is granted from these requirements. [District Rule 2520] Federally Enforceable Through Title V Permit

45. The requirements of 40 CFR 72.6(b) and 40 CFR 60.40c do not apply to this source. A permit shield is granted from this requirement. [District Rule 2520] Federally Enforceable Through Title V Permit

San Joaquin Valley
Air Pollution Control District

PERMIT UNIT: C-311-37-17 **EXPIRATION DATE:** 12/31/2016

SECTION: 25 **TOWNSHIP:** 20S **RANGE:** 14E

EQUIPMENT DESCRIPTION:
62.5 MMBTU/HR STRUTHERS THERMOFLOOD MODEL OH-50-ND-16XAM STEAM GENERATOR (#25-16) WITH A NORTH AMERICAN MODEL GLE LOW NOX BURNER WITH FLUE GAS RECIRCULATION (FGR) SERVED BY THE 25D NEPTUNE AIRPOL CAUSTIC SCRUBBER WHEN FIRING WELL CASING AND/OR TANK VAPOR RECOVERY GAS

PERMIT UNIT REQUIREMENTS

1. This unit shall be fueled with natural gas, LPG, or a blend of natural gas and well casing and tank vapor recovery (TVR) gas. [District NSR Rule] 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. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rules 4201, 3.1 and 4301, 5.1and 5.2] Federally Enforceable Through Title V Permit
4. Total gas consumption shall not exceed 1,404 MMBtu/day nor 457,800 MMBtu/year. [District NSR Rule] Federally Enforceable Through Title V Permit
5. The permittee shall install and maintain a non-resettable, totalizing mass or volumetric flow meter in each fuel line to the boiler. [District NSR Rule] Federally Enforceable Through Title V Permit
6. The caustic scrubber shall be operated to control SOx emissions when ever the steam generator is fueled with well casing and/or TVR gas. [District NSR Rule] Federally Enforceable Through Title V Permit
7. Scrubber liquor pH shall be maintained between 6.5 and 8.0. [District NSR Rule] Federally Enforceable Through Title V Permit
8. Tray packing flowrate shall be operated at 700 to 840 gallons/minute. [District NSR Rule] Federally Enforceable Through Title V Permit
9. Quench flowrate shall be operated at 145 to 185 gallons/minute. [District NSR Rule] Federally Enforceable Through Title V Permit
10. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, each fuel source shall be tested weekly for sulfur content and higher heating value. If compliance with the fuel sulfur content limit and sulfur emission limits has been demonstrated for 8 consecutive weeks for a fuel source, then the fuel testing frequency shall be semi-annually. If a semi-annual fuel content source test fails to show compliance, weekly testing shall resume. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

11. When complying with SOx emission limits by testing of stack emissions, testing shall be performed not less than once every 12 months using EPA Method 6; or ARB Method 100; or, for units using gaseous fuel scrubbed for sulfur pre-combustion, the sulfur content of the gaseous fuel being fired in the unit shall be determined using ASTM D 1072, D 3031, D 4084, D 3246 or a grab sample analysis by GC-FPD/TCD or double GC for H2S and mercaptans performed in the laboratory and EPA Method 19 to calculated emissions. Gaseous fuel fired units demonstrating compliance on two consecutive annual source tests shall be tested not less than once every thirty-six months, however annual source testing shall resume if any test fails to show compliance. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

12. If the unit is fired on noncertified gaseous fuel and compliance with SOx emission limits is achieved through fuel sulfur content limitations, then the sulfur content of the gaseous fuel being fired in the unit shall be determined using ASTM D 1072, D 3031, D 4084, D 3246 or grab sample analysis by GC-FPD/TCD or double GC for H2S and mercaptans performed in the laboratory. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

13. If fuel analysis is used to demonstrate compliance with the conditions of this permit, the fuel higher heating value for each fuel shall be certified by third party fuel supplier or determined by: D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District Rule 2520, 9.3.2; 4305, 6.2.1, 4306, 6.2.1, and 4351, 6.2.1] Federally Enforceable Through Title V Permit

14. Except during start-up and shutdown periods, emissions from the steam generator shall not exceed any of the following limits: 15 ppmvd NOx @ 3% O2 or 0.018 lb-NOx/MMBtu, 0.052 lb-SOx/MMBtu, 0.014 lb-PM10/MMBtu, 50 ppmvd CO @ 3% O2 or 0.037 lb-CO/MMBtu, or 0.008 lb-VOC/MMBtu. [District Rules 2201, 4301, 4305, and 4306] Federally Enforceable Through Title V Permit

15. During start-up and shutdown periods emissions from the steam generator shall not exceed either of the following limits: 0.1 lb-NOx/MMBtu or 0.084 lb-CO/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit

16. Duration of start-up or shutdown shall not exceed two hours each per occurrence. During start-up or shutdown, the emissions control system shall be in operation, and emissions shall be minimized insofar as technologically possible. the operator shall maintain daily records of the duration of start-up and shutdown periods. [District Rule 2201] Federally Enforceable Through Title V Permit

17. 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

18. Maximum emissions from the steam generator, including start-up and shutdown, shall not exceed any of the following limits: 50.5 lb-NOx/day, 8,240 lb-NOx/year, 85.6 lb-CO/day, or 16,939 lb-CO/year. [District Rule 2201] Federally Enforceable Through Title V Permit

19. 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, 5.4.2 and 4306, 5.4.2] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

20. 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, 5.4.2 and 4306, 5.4.2] 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, 5.4.2 and 4306, 5.4.2] Federally Enforceable Through Title V Permit

22. The permittee shall maintain records of: (1) the date and time of NOx, CO, and O2 measurements, (2) the O2 concentration in percent and the measured NOx and CO concentrations corrected to 3% O2, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 6.1 and 4306, 6.1] Federally Enforceable Through Title V Permit

23. 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, 5.5.2 and 4306, 5.5.2] Federally Enforceable Through Title V Permit

24. 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, 6.3.1 and 4306, 6.3.1] Federally Enforceable Through Title V Permit

25. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 5.5.1 and 4306, 5.5.1] Federally Enforceable Through Title V Permit

26. 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

27. 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, 6.2 and 4306, 6.2] Federally Enforceable Through Title V Permit

28. CO emissions for source test purposes shall be determined using EPA Method 10, 10B, or ARB Method 100. [District Rule 2520, 9.3.2 and 4305] Federally Enforceable Through Title V Permit

29. Stack gas oxygen (O2) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305, 6.2 and 4306, 6.2] Federally Enforceable Through Title V Permit

30. 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, 5.5.5 and 4306, 5.5.5] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

31. 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

32. Sampling facilities for source testing shall be provided in accordance with the provisions of rule 1081 (Source Sampling). [District Rule 1081] Federally Enforceable Through Title V Permit

33. Natural gas sulfur content and higher heating value (hhv) shall be certified by a third party fuel supplier of each fuel source or natural gas shall be tested for sulfur content and higher heating value (hhv) monthly. Waste gas shall be tested for sulfur content and higher heating value (hhv) not less than monthly. [District NSR Rule] Federally Enforceable Through Title V Permit

34. All required source testing shall conform to the compliance testing procedures described in District Rule 1081 (Amended December 16, 1993). [District Rule 1081] Federally Enforceable Through Title V Permit

35. Copies of all gas purchase contracts, supplier certifications, and test results to determine compliance with the conditions of this permit shall be maintained. The operator shall record daily amount and type(s) of fuel(s) combusted, fuel source, and all dates on which unit is fired on any noncertified fuel and record specific type of noncertified fuel used. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

36. Permittee shall record daily total gas consumption. Records shall be retained for at least five years and made available for District inspection upon request. [District Rule 1070 and 2520, 9.5.2] Federally Enforceable Through Title V Permit

37. Daily records of the tray packing flowrate and the quench flowrate shall be maintained, retained on the premises for a period of at least five years, and made available for District inspection upon request. [District Rule 1070 and 2520, 9.4.2] Federally Enforceable Through Title V Permit

38. Permittee shall measure and record the BTU content of the gas burned at the time of NOx source testing, except for natural gas purchased from a PUC regulated utility. [District NSR Rule and 4801] Federally Enforceable Through Title V Permit

39. Permittee shall maintain records of higher heating value (hhv), in MMBtu/scf, for each gaseous fuel used in this operation. [District NSR Rule] Federally Enforceable Through Title V Permit

40. Permittee shall maintain with the permit a current listing of all TEOR and TVR systems providing vapor to this steam generator and shall make such listing readily available for District inspection upon request [District NSR Rule] Federally Enforceable Through Title V Permit

41. Permittee shall maintain daily records of volume of fuel gas burned, TEOR/TVR gas incinerated, and permit number(s) of systems providing gas for incineration. [District NSR Rule] Federally Enforceable Through Title V Permit

42. 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

43. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following requirements of SJVUAPCD Rules 4201 (Amended December 17, 1992), and 4301 (Amended December 17, 1992). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

44. Compliance with permit conditions in the Title V permit shall be deemed compliance with the requirements of County Rules 108 (Kings), 108.1 (Fresno, Merced, San Joaquin, Tulare, Kern, and Stanislaus), and 110 (Madera), 402 (Madera), 404 (Fresno, Kern, Tulare, Kings, Stanislaus, Merced, and San Joaquin), 405 (Madera), 408 (Fresno, Kern, Tulare, Kings, Stanislaus, Merced, and San Joaquin), 407.2 (Kern, Tulare, Kings, Stanislaus, and San Joaquin), and 408.2 (Merced). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

45. The requirements of 40 CFR 72.6(b) and 40 CFR 60.40c do not apply to this source. A permit shield is granted from this requirement. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

46. Pursuant to Rule 4320, beginning in 2010 the operator shall pay an annual emission fee to the District for NOx emissions from this unit for the previous calendar year. Payments are due by July 1 of each year. Payments shall continue annually until either the unit is permanently removed from service in the District or the operator demonstrates compliance with the applicable NOx emission limit listed in Rule 4320. [District Rule 4320] Federally Enforceable Through Title V Permit

47. On and after July 1, 2010, the permittee shall submit an analysis showing the fuel's sulfur content at least once every year. Valid purchase contracts, supplier certifications, tariff sheets, or transportation contacts may be used to satisfy this requirement, provided they establish the fuel parameters mentioned above. [District Rule 4320] Federally Enforceable Through Title V Permit

48. Permittee shall maintain records of annual heat input (MMBtu) for this unit on a calendar year basis. Such 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 and Rule 4320] Federally Enforceable Through Title V Permit

San Joaquin Valley
Air Pollution Control District

PERMIT UNIT: C-311-38-18 **EXPIRATION DATE:** 12/31/2016

SECTION: 25 **TOWNSHIP:** 20S **RANGE:** 14E

EQUIPMENT DESCRIPTION:
58.5 MMBTU/HR SG 25-17 STRUTHERS THERMOFLOOD STEAM GENERATOR, MODEL OH-50-ND-16XAM, WITH A NORTH AMERICAN GLE LOW-NOX BURNER (OR DISTRICT APPROVED EQUIVALENT) AND FLUE GAS RECIRCULATION SERVED BY THE 25D NEPTUNE AIRPOL CAUSTIC SCRUBBER WHEN FIRING WELL CASING AND/OR TANK VAPOR RECOVERY GAS

PERMIT UNIT REQUIREMENTS

1. This unit shall be fueled with natural gas, LPG, or a blend of natural gas and well casing and tank vapor recovery (TVR) gas. [District NSR Rule] Federally Enforceable Through Title V Permit
2. Total gas consumption of this unit shall not exceed either of the following limits: 1,404 MMBtu/day or 457,800 MMBtu/year. [District NSR Rule] Federally Enforceable Through Title V Permit
3. The permittee shall maintain a non-resettable, totalizing mass or volumetric flow meter in each fuel line to the boiler. [District NSR Rule] Federally Enforceable Through Title V Permit
4. The caustic scrubber shall be operated to control SOx emissions when ever the steam generator is fueled with well casing and/or TVR gas. [District NSR Rule] Federally Enforceable Through Title V Permit
5. Scrubber liquor pH shall be maintained between 6.5 and 8.0. [District NSR Rule] Federally Enforceable Through Title V Permit
6. Tray packing flowrate shall be operated at 700 to 840 gallons/minute. [District NSR Rule] Federally Enforceable Through Title V Permit
7. Quench flowrate shall be operated at 145 to 185 gallons/minute. [District NSR Rule] Federally Enforceable Through Title V Permit
8. Particulate matter emissions shall not exceed 0.1 grain/dscf, 0.1 grain/dscf calculated to 12% CO2, nor 10 lb/hr. [District Rules 4201, 3.1 and 4301, 5.1 and 5.2.3] Federally Enforceable Through Title V Permit
9. Sulfur compound emissions shall not exceed 0.2% by volume, 2000 ppmv, on a dry basis averaged over 15 consecutive minutes. [County Rules 404 (Madera), 406 (Fresno), and 407 (Kings, Merced, San Joaquin, Tulare, Kern, and Stanislaus)] Federally Enforceable Through Title V Permit
10. Emissions of sulfur compounds from this unit shall not exceed 200 lb/hr, calculated as SO2. Compliance with this requirement may be demonstrated by firing the unit only on PUC or FERC regulated natural gas or by testing the sulfur content of each fuel and determining the maximum hourly emissions of sulfur compounds by multiplying the sulfur content of each fuel in lb/MMBtu by the maximum heat input rating of the unit; or by source testing in combination with fuel analysis. [District Rules 2520, 9.4.2 and 4301, 5.2.1] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

11. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, each fuel source shall be tested weekly for sulfur content and higher heating value. If compliance with the fuel sulfur content limit and sulfur emission limits has been demonstrated for 8 consecutive weeks for a fuel source, then the fuel testing frequency shall be semi-annually. If a semi-annual fuel content source test fails to show compliance, weekly testing shall resume. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

12. When complying with SOx emission limits by testing of stack emissions, testing shall be performed not less than once every 12 months using EPA Method 6; or ARB Method 100; or, for units using gaseous fuel scrubbed for sulfur pre-combustion, the sulfur content of the gaseous fuel being fired in the unit shall be determined using ASTM D 1072, D 3031, D 4084, D 3246 or a grab sample analysis by GC-FPD/TCD or double GC for H2S and mercaptans performed in the laboratory and EPA Method 19 to calculated emissions. Gaseous fuel fired units demonstrating compliance on two consecutive annual source tests shall be tested not less than once every thirty-six months, however annual source testing shall resume if any test fails to show compliance. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

13. If the unit is fired on noncertified gaseous fuel and compliance with SOx emission limits is achieved through fuel sulfur content limitations, then the sulfur content of the gaseous fuel being fired in the unit shall be determined using ASTM D 1072, D 3031, D 4084, D 3246 or grab sample analysis by GC-FPD/TCD or double GC for H2S and mercaptans performed in the laboratory. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

14. If fuel analysis is used to demonstrate compliance with the conditions of this permit, the fuel higher heating value for each fuel shall be certified by third party fuel supplier or determined by: D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District Rule 2520, 9.4.2; 4305, 6.2.1; and 4351, 6.2.1] Federally Enforceable Through Title V Permit

15. Nitrogen oxide (NOx) emissions shall not exceed 140 lb/hr, calculated as NO2. [District Rules 4301, 5.2.2, 5.3, and 5.5 and 2520, 9.4.2] Federally Enforceable Through Title V Permit

16. Emissions from the steam generator shall not exceed any of the following limits: 0.052 lb-SOx/MMBtu, 0.045 lb-PM10/MMBtu, or 0.008 lb-VOC/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit

17. Except during start-up and shutdown periods emissions from the steam generator shall not exceed either of the following limits: 15 ppmvd NOx @ 3% O2, equivalent to 0.0182 lb-NOx/MMBtu or 50 ppmvd CO @ 3% O2, equivalent to 0.037 lb-CO/MMBtu. [District Rules 2201, 4301, 5.2, 4305, 5.1, and 4306, 5.1] Federally Enforceable Through Title V Permit

18. During start-up and shutdown periods emissions from the steam generator shall not exceed either of the following limits: 0.1 lb-NOx/MMBtu or 0.084 lb-CO/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit

19. 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

20. 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

21. Maximum emissions from the steam generator, including start-up and shutdown, shall not exceed any of the following limits: 50.5 lb-NOx/day, 8,332 lb-NOx/yr, 51.9 lb-CO/day, or 16,939 lb-CO/yr. [District Rule 2201] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

22. 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, 6.3.1, and 4306, 6.3.1] Federally Enforceable Through Title V Permit
23. NOx, and CO emissions shall be measured with source testing conducted by independent testing laboratory and shall be witnessed or authorized by the District [District Rule 2520, 9.4.2] 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 2520, 9.3.2, 4305, 5.5.5 and 4306, 5.5.5] Federally Enforceable Through Title V Permit
25. All required source testing shall conform to the compliance testing procedures described in District Rule 1081 (Amended December 16, 1993). [District Rule 1081] Federally Enforceable Through Title V Permit
26. The District must be notified 30 days prior to any compliance source test, and a source test plan must be submitted for approval 15 days prior to testing. The source test plan shall indicate which test method shall be used to demonstrate compliance. [District Rule 1081] Federally Enforceable Through Title V Permit
27. The results of each source test shall be submitted to the District within 60 days after the source test. [District Rule 1081] Federally Enforceable Through Title V Permit
28. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 5.5.1 and 4306, 5.5.1] Federally Enforceable Through Title V Permit
29. 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 2520, 9.3.2, 4305, 6.2 and 4306, 6.2] Federally Enforceable Through Title V Permit
30. CO emissions for source test purposes shall be determined using EPA Method 10, 10B, or ARB Method 100. [District Rule 2520, 9.3.2 and 4305] Federally Enforceable Through Title V Permit
31. Stack gas oxygen (O2) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 2520, 9.3.2, 4305, 6.2 and 4306, 6.2] Federally Enforceable Through Title V Permit
32. Stack gas moisture content shall be determined using EPA Method 4. [District NSR Rule] Federally Enforceable Through Title V Permit
33. 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 2520, 9.3.2, 4305 and 4306] Federally Enforceable Through Title V Permit
34. 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 2520, 9.3.2, 4305 and 4306] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

35. 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 Rule 2520, 9.4.2 and 4305] Federally Enforceable Through Title V Permit

36. The permittee shall maintain records of: (1) the date and time of NOx, CO, and O2 measurements, (2) the O2 concentration in percent and the measured NOx and CO concentrations corrected to 3% O2, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 2520, 9.3.2, 4305 and 4306] Federally Enforceable Through Title V Permit

37. Concentration measurements shall not be taken until the sample acquisition probe has been exposed to the stack gas for at least 150% of the response time. Measurements shall be taken in triplicate. [District Rule 2520, 9.4.2 and 4305] Federally Enforceable Through Title V Permit

38. If water vapor is not removed prior to measurement, the absolute humidity in the gas stream must be determined so that the gas concentrations may be reported on a dry basis. [District Rule 2520, 9.4.2 and 4305] Federally Enforceable Through Title V Permit

39. If water vapor creates an interference with the measurement of any component, then the water vapor must be removed from the gas stream prior to concentration measurements. [District Rule 2520, 9.4.2 and 4305] Federally Enforceable Through Title V Permit

40. Natural gas sulfur content and higher heating value (hhv) shall be certified by a third party fuel supplier of each fuel source or natural gas shall be tested for sulfur content and higher heating value (hhv) monthly. Waste gas shall be tested for sulfur content and higher heating value (hhv) not less than monthly. [District NSR Rule] Federally Enforceable Through Title V Permit

41. Copies of all gas purchase contracts, supplier certifications, and test results to determine compliance with the conditions of this permit shall be maintained. The operator shall record daily amount and type(s) of fuel(s) combusted, fuel source, and all dates on which unit is fired on any noncertified fuel and record specific type of noncertified fuel used. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

42. Permittee shall maintain records of daily total gas consumption. [District Rule 1070 and 2520, 9.5.2] Federally Enforceable Through Title V Permit

43. Permittee shall maintain daily records of the tray packing flowrate and the quench flowrate. [District Rule 1070 and 2520, 9.5.2] Federally Enforceable Through Title V Permit

44. Permittee shall measure and record the BTU content of the gas burned at the time of NOx source testing, except for natural gas purchased from a PUC regulated utility. [District NSR Rule and 4801] Federally Enforceable Through Title V Permit

45. Permittee shall maintain records of higher heating value (hhv), in MMBtu/scf, for each gaseous fuel used in this operation. [District NSR Rule] Federally Enforceable Through Title V Permit

46. Permittee shall maintain with the permit a current listing of all TEOR and TVR systems providing vapor to this steam generator. [District NSR Rule] Federally Enforceable Through Title V Permit

47. Permittee shall maintain daily records of volume of fuel gas burned, TEOR/TVR gas incinerated, and permit number(s) of systems providing gas for incineration. [District NSR Rule] Federally Enforceable Through Title V Permit

48. 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, 2520, 9.4.2, 4305, 6.1, and 4306, 6.1] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

49. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following requirements of SJVUAPCD Rules 4201 (Amended December 17, 1992), and 4301 (Amended December 17, 1992). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

50. The requirements of 40 CFR 72.6(b) and 40 CFR 60.40c do not apply to this source. A permit shield is granted from this requirement. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

51. Pursuant to Rule 4320, beginning in 2010 the operator shall pay an annual emission fee to the District for NOx emissions from this unit for the previous calendar year. Payments are due by July 1 of each year. Payments shall continue annually until either the unit is permanently removed from service in the District or the operator demonstrates compliance with the applicable NOx emission limit listed in Rule 4320. [District Rule 4320] Federally Enforceable Through Title V Permit

52. On and after July 1, 2010, the permittee shall submit an analysis showing the fuel's sulfur content at least once every year. Valid purchase contracts, supplier certifications, tariff sheets, or transportation contacts may be used to satisfy this requirement, provided they establish the fuel parameters mentioned above. [District Rule 4320] Federally Enforceable Through Title V Permit

53. Permittee shall maintain records of annual heat input (MMBtu) for this unit on a calendar year basis. Such 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 and Rule 4320] Federally Enforceable Through Title V Permit

San Joaquin Valley
Air Pollution Control District

PERMIT UNIT: C-311-39-17 **EXPIRATION DATE:** 12/31/2016

SECTION: 25 **TOWNSHIP:** 20S **RANGE:** 14E

EQUIPMENT DESCRIPTION:
58.5 MMBTU/HR STRUTHERS THERMOFLOOD STEAM GENERATOR #25-18, MODEL OH-50-ND-16XAM, EQUIPPED WITH A NORTH AMERICAN GAS AND OIL BURNER AND FLUE GAS RECIRCULATION SERVED BY THE 25D NEPTUNE AIRPOL CAUSTIC SCRUBBER WHEN FIRING WELL CASING AND/OR TANK VAPOR RECOVERY GAS.

PERMIT UNIT REQUIREMENTS

1. This unit shall be fueled with natural gas, LPG, or a blend of natural gas and well casing and tank vapor recovery (TVR) gas. [District NSR Rule] Federally Enforceable Through Title V Permit
2. Total gas consumption shall not exceed 1,404 MMBtu/day nor 457,800 MMBtu/year. [District NSR Rule] Federally Enforceable Through Title V Permit
3. The permittee shall install and maintain a non-resettable, totalizing mass or volumetric flow meter in each fuel line to the boiler. [District NSR Rule] Federally Enforceable Through Title V Permit
4. The caustic scrubber shall be operated to control SOx emissions when ever the steam generator is fueled with well casing and/or TVR gas. [District NSR Rule] Federally Enforceable Through Title V Permit
5. Scrubber liquor pH shall be maintained between 6.5 and 8.0. [District NSR Rule] Federally Enforceable Through Title V Permit
6. Tray packing flowrate shall be operated at 700 to 840 gallons/minute. [District NSR Rule] Federally Enforceable Through Title V Permit
7. Quench flowrate shall be operated at 145 to 185 gallons/minute. [District NSR Rule] Federally Enforceable Through Title V Permit
8. Particulate matter emissions shall not exceed 0.1 grain/dscf, 0.1 grain/dscf calculated to 12% CO2, nor 10 lb/hr. [District Rules 4201, 3.1 and 4301, 5.1 and 5.2.3] Federally Enforceable Through Title V Permit
9. Nitrogen oxide (NOx) emissions shall not exceed 140 lb/hr, calculated as NO2. [District Rules 4301, 5.2.2 and 5.3, and 2520, 9.3.2] Federally Enforceable Through Title V Permit
10. Emissions from this unit shall not exceed any of the following limits: 0.0520 lb-SOx/MMBtu, 0.045 lb-PM10/MMBtu, or 0.008 lb-VOC/MMBtu. [District NSR Rule]
11. Except during startup and shutdown, emissions from this unit shall not exceed any of the following limits: 15 ppmvd NOx @ 3% O2 or 0.018 lb-NOx/MMBtu, or 50 ppmvd CO @ 3% O2 or 0.037 lb-CO/MMBtu. [District NSR Rule and District Rules 4305 and 4306]
12. During startup and shutdown, emission rates from the unit shall not exceed any of the following limits: 5.85 lb-NOx/hr, 3.04 lb-SOx/hr, 2.63 lb-PM10/hr, 4.91 lb-CO/hr, or 0.47 lb-VOC/hr. [District NSR Rule] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

13. Duration of startup and shutdown shall not exceed two hours each per occurrence and, combined, shall not exceed 4 hours per day. During startup 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 startup and shutdown periods. [District Rule 4306, 5.3.1] Federally Enforceable Through Title V Permit

14. Startup 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

15. Source testing to measure natural gas-combustion NOx and CO emissions from this unit shall be conducted at least once every twelve (12) months. 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, 6.3.1 and 4306, 6.3.1] Federally Enforceable Through Title V Permit

16. 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

17. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 5.5.1 and 4306, 5.5.1] Federally Enforceable Through Title V Permit

18. NOx, and CO emissions shall be measured with source testing conducted by independent testing laboratory and shall be witnessed or authorized by the District [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

19. All required source testing shall conform to the compliance testing procedures described in District Rule 1081 (Amended December 16, 1993). [District Rule 1081] Federally Enforceable Through Title V Permit

20. Sampling facilities for source testing shall be provided in accordance with the provisions of rule 1081 (Source Sampling). [District Rule 1081] Federally Enforceable Through Title V Permit

21. 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, 5.5.2 and 4306, 5.5.2] 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, 5.5.5 and 4306, 5.5.5] 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, 6.2 and 4306, 6.2] Federally Enforceable Through Title V Permit

25. CO emissions for source test purposes shall be determined using EPA Method 10, 10B, or ARB Method 100. [District Rule 2520, 9.3.2 and 4305] 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, 6.2.4] Federally Enforceable Through Title V Permit

27. 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, 5.4.2 and 4306, 5.4.2] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

28. 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 and 4306, 5.4.2] Federally Enforceable Through Title V Permit

29. 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, 5.5.4] Federally Enforceable Through Title V Permit

30. The permittee shall maintain records of: (1) the date and time of NOx, CO, and O2 measurements, (2) the O2 concentration in percent and the measured NOx and CO concentrations corrected to 3% O2, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305 and 4306, 6.1] Federally Enforceable Through Title V Permit

31. Emissions of sulfur compounds from this unit shall not exceed 200 lb/hr, calculated as SO2. Compliance with this requirement may be demonstrated by firing the unit only on PUC or FERC regulated natural gas or by testing the sulfur content of each fuel and determining the maximum hourly emissions of sulfur compounds by multiplying the sulfur content of each fuel in lb/MMBtu by the maximum heat input rating of the unit; or by source testing in combination with fuel analysis. [District Rules 2520, 9.3.2 and 4301, 5.2.1] Federally Enforceable Through Title V Permit

32. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, each fuel source shall be tested weekly for sulfur content and higher heating value. If compliance with the fuel sulfur content limit and sulfur emission limits has been demonstrated for 8 consecutive weeks for a fuel source, then the fuel testing frequency shall be semi-annually. If a semi-annual fuel content source test fails to show compliance, weekly testing shall resume. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

33. When complying with SOx emission limits by testing of stack emissions, testing shall be performed not less than once every 12 months using EPA Method 6; or ARB Method 100; or, for units using gaseous fuel scrubbed for sulfur pre-combustion, the sulfur content of the gaseous fuel being fired in the unit shall be determined using ASTM D 1072, D 3031, D 4084, D 3246 or a grab sample analysis by GC-FPD/TCD or double GC for H2S and mercaptans performed in the laboratory and EPA Method 19 to calculated emissions. Gaseous fuel fired units demonstrating compliance on two consecutive annual source tests shall be tested not less than once every thirty-six months, however annual source testing shall resume if any test fails to show compliance. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

34. If the unit is fired on noncertified gaseous fuel and compliance with SOx emission limits is achieved through fuel sulfur content limitations, then the sulfur content of the gaseous fuel being fired in the unit shall be determined using ASTM D 1072, D 3031, D 4084, D 3246 or grab sample analysis by GC-FPD/TCD or double GC for H2S and mercaptans performed in the laboratory. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

35. If fuel analysis is used to demonstrate compliance with the conditions of this permit, the fuel higher heating value for each fuel shall be certified by third party fuel supplier or determined by: D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District Rules 2520, 9.3.2, 4305, 6.2.1, 4306, 6.2.1, and 4351, 6.2.1] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

36. Stack gas moisture content shall be determined using EPA Method 4. [District NSR Rule] Federally Enforceable Through Title V Permit

37. Natural gas sulfur content and higher heating value (hhv) shall be certified by a third party fuel supplier of each fuel source or natural gas shall be tested for sulfur content and higher heating value (hhv) monthly. Waste gas shall be tested for sulfur content and higher heating value (hhv) not less than monthly. [District NSR Rule] Federally Enforceable Through Title V Permit

38. Annual test results to the District from unit(s) representing a group of units may be used to measure NOx emissions of this permit for that group, provided the selection of the representative unit(s) is approved by the APCO prior to testing. Should any of the representative units exceed the required NOx emission limits of this permit, each of the units in the group shall demonstrate compliance by emissions testing within 90 days of the failed test. [District Rules 2520, 9.3.2, 4306, 6.3.2, and 4305, 6.3.2] Federally Enforceable Through Title V Permit

39. The following conditions must be met for representative unit(s) to be used to test for NOx limits for a group of units: 1) all units are initially source tested and emissions from each unit in group are less than 90% of the permitted value and vary 25% or less from the average of all runs, 2) all units in group are similar in terms of rated heat input (rating not to exceed 100 MMBtu/hr), make and series, operation conditions, and control method, and 3) the group is owned by a single owner and located at a single stationary source. [District Rules 2520, 9.3.2, 4306, 6.3.2, and 4305, 6.3.2] Federally Enforceable Through Title V Permit

40. All units in a group for which representative units are source for NOx emissions shall have received the same maintenance and tune-up procedures as the representative unit(s). Records shall be maintained for the each unit of the group including all preventative and corrective maintenance work done. [District Rules 2520, 9.3.2, 4306, 6.3.2, and 4305, 6.3.2] Federally Enforceable Through Title V Permit

41. All units in a group for which representative units are source tested for NOx emissions for this permit shall be fired on the same fuel type during the entire compliance period. If a unit switches for any time to an alternate fuel type (e.g. from natural gas to oil) then that unit shall not be considered part of the group and shall be required to undergo a source test for all fuel types used, within one year of the switch. [District Rules 2520, 9.3.2, 4306, and 4305, 6.3.2] Federally Enforceable Through Title V Permit

42. The number of representative units source tested for NOx emissions shall be at least 30% of the total number of units in the group. The units included in the 30% shall be rotated, so that in 3 years, all units in the entire group will have been tested at least once. [District Rules 2520, 9.3.2, 4305, 6.3.2, and 4306, 6.3.2] Federally Enforceable Through Title V Permit

43. Copies of all gas purchase contracts, supplier certifications, and test results to determine compliance with the conditions of this permit shall be maintained. The operator shall record daily amount and type(s) of fuel(s) combusted, fuel source, and all dates on which unit is fired on any noncertified fuel and record specific type of noncertified fuel used. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

44. Permittee shall record daily total gas consumption. [District Rules 1070 and 2520, 9.4.2] Federally Enforceable Through Title V Permit

45. Daily records of the tray packing flowrate and the quench flowrate shall be maintained, retained on the premises for a period of at least five years, and made available for District inspection upon request. [District Rules 1070 and 2520, 9.4.2] Federally Enforceable Through Title V Permit

46. Permittee shall measure and record the BTU content of the gas burned at the time of NOx source testing, except for natural gas purchased from a PUC regulated utility. [District NSR Rule and District Rule 4801] Federally Enforceable Through Title V Permit

47. Permittee shall maintain records of higher heating value (hhv), in MMBtu/scf, for each gaseous fuel used in this operation. [District NSR Rule] Federally Enforceable Through Title V Permit

48. Permittee shall maintain with the permit a current listing of all TEOR and TVR systems providing vapor to this steam generator and shall make such listing readily available for District inspection upon request [District NSR Rule] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

49. Permittee shall maintain daily records of volume of fuel gas burned, TEOR/TVR gas incinerated, and permit number(s) of systems providing gas for incineration. [District NSR Rule] Federally Enforceable Through Title V Permit

50. 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

51. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following requirements of SJVUAPCD Rules 4201 (Amended December 17, 1992), and 4301 (Amended December 17, 1992). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

52. The requirements of 40 CFR 72.6(b) and 40 CFR 60.40c do not apply to this source. A permit shield is granted from this requirement. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

53. Pursuant to Rule 4320, beginning in 2010 the operator shall pay an annual emission fee to the District for NOx emissions from this unit for the previous calendar year. Payments are due by July 1 of each year. Payments shall continue annually until either the unit is permanently removed from service in the District or the operator demonstrates compliance with the applicable NOx emission limit listed in Rule 4320. [District Rule 4320] Federally Enforceable Through Title V Permit

54. On and after July 1, 2010, the permittee shall submit an analysis showing the fuel's sulfur content at least once every year. Valid purchase contracts, supplier certifications, tariff sheets, or transportation contacts may be used to satisfy this requirement, provided they establish the fuel parameters mentioned above. [District Rule 4320] Federally Enforceable Through Title V Permit

55. Permittee shall maintain records of annual heat input (MMBtu) for this unit on a calendar year basis. Such 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 and Rule 4320] Federally Enforceable Through Title V Permit

San Joaquin Valley
Air Pollution Control District

PERMIT UNIT: C-311-40-16 **EXPIRATION DATE:** 12/31/2016

SECTION: 25 **TOWNSHIP:** 20S **RANGE:** 14E

EQUIPMENT DESCRIPTION:
58.5 MMBTU/HR NATURAL GAS, LPG OR PROCESS GAS FIRED STRUTHERS THERMOFLOOD STEAM GENERATOR, MODEL OH-50-ND-16XAM, WITH A NORTH AMERICAN GLE BURNER, FLUE GAS RECIRCULATION SYSTEM, AN OXYGEN CONTROLLER, SERVED BY THE NEPTUNE AIRPOL CAUSTIC SCRUBBER WHEN FIRING WELL CASING AND/OR TANK VAPOR RECOVERY GAS (COMMON TO C-311-37) (SG-25-19)

PERMIT UNIT REQUIREMENTS

1. This unit shall be fueled with natural gas, LPG, or a blend of natural gas and well casing and tank vapor recovery (TVR) gas. [District NSR Rule] Federally Enforceable Through Title V Permit
2. Fuel consumption shall not exceed 434,700 MMBtu/year. [District NSR Rule] 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 NSR Rule] Federally Enforceable Through Title V Permit
4. The permittee shall maintain a non-resettable, totalizing mass or volumetric flow meter in each fuel line to the steam generator. [District NSR Rule] Federally Enforceable Through Title V Permit
5. The caustic scrubber shall be operated to control SOx emissions when ever the steam generator is fueled with well casing and/or TVR gas. [District NSR Rule]
6. Particulate matter emissions shall not exceed 0.1 grain/dscf, 0.1 grain/dscf calculated to 12% CO2, nor 10 lb/hr. [District Rules 4201, 3.1 and 4301, 5.1 and 5.2.3] Federally Enforceable Through Title V Permit
7. Nitrogen oxide (NOx) emissions shall not exceed 140 lb/hr, calculated as NO2. [District Rules 4301, 5.2.2, 5.3, and 5.5 and 2520, 9.3.2] Federally Enforceable Through Title V Permit
8. Emissions from this unit shall not exceed any of the following limits: 0.052 lb-SOx/MMBtu, 0.045 lb-PM10/MMBtu, or 0.0055 lb-VOC/MMBtu. [District NSR Rule] Federally Enforceable Through Title V Permit
9. Except during startup and shutdown, emissions from this unit shall not exceed any of the following limits: 15 ppmvd NOx @ 3% O2 or 0.018 lb-NOx/MMBtu, or 50 ppmvd CO @ 3% O2 or 0.037 lb-CO/MMBtu. [District NSR Rule and District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
10. During startup and shutdown, emission rates from the unit shall not exceed any of the following limits: 5.85 lb-NOx/hr, 3.04 lb-SOx/hr, 2.63 lb-PM10/hr, 4.91 lb-CO/hr, or 0.32 lb-VOC/hr. [District NSR Rule] Federally Enforceable Through Title V Permit
11. Duration of startup and shutdown shall not exceed two hours each per occurrence and, combined, shall not exceed 4 hours per day. During startup 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 startup and shutdown periods. [District Rule 4306, 5.3.1] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

12. Startup 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

13. 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, 6.3.1 and 4306, 6.3.1] Federally Enforceable Through Title V Permit

14. 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

15. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305,5.5.1 and 4306, 5.5.1] Federally Enforceable Through Title V Permit

16. All required source testing shall conform to the compliance testing procedures described in District Rule 1081 (Amended December 16, 1993). [District Rule 1081] 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, 5.5.2 and 4306, 5.5.2] Federally Enforceable Through Title V Permit

18. 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, 5.5.5 and 4306, 5.5.5] 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. 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, 6.2 and 4306, 6.2] Federally Enforceable Through Title V Permit

21. CO emissions for source test purposes shall be determined using EPA Method 10, 10B, or ARB Method 100. [District Rule 2520, 9.3.2 and 4305] Federally Enforceable Through Title V Permit

22. Stack gas oxygen (O2) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305, 6.2 and 4306, 6.2] Federally Enforceable Through Title V Permit

23. 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, 5.4.2 and 4306, 5.4.2] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

24. 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, 5.4.2 and 4306, 5.4.2] Federally Enforceable Through Title V Permit

25. 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, 5.4.2 and 4306, 5.4.2 and 5.5.4] Federally Enforceable Through Title V Permit

26. The permittee shall maintain records of: (1) the date and time of NOx, CO, and O2 measurements, (2) the O2 concentration in percent and the measured NOx and CO concentrations corrected to 3% O2, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 6.1 and 4306, 6.1] Federally Enforceable Through Title V Permit

27. Emissions of sulfur compounds from this unit shall not exceed 200 lb/hr, calculated as SO2. Compliance with this requirement may be demonstrated by firing the unit only on PUC or FERC regulated natural gas or by testing the sulfur content of each fuel and determining the maximum hourly emissions of sulfur compounds by multiplying the sulfur content of each fuel in lb/MMBtu by the maximum heat input rating of the unit; or by source testing in combination with fuel analysis. [District Rules 2520, 9.3.2 and 4301, 5.2.1] Federally Enforceable Through Title V Permit

28. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, each fuel source shall be tested weekly for sulfur content and higher heating value. If compliance with the fuel sulfur content limit and sulfur emission limits has been demonstrated for 8 consecutive weeks for a fuel source, then the fuel testing frequency shall be semi-annually. If a semi-annual fuel content source test fails to show compliance, weekly testing shall resume. [District Rule 2520, 9.3.2 and District NSR Rule] Federally Enforceable Through Title V Permit

29. When complying with SOx emission limits by testing of stack emissions, testing shall be performed not less than once every 12 months using EPA Method 6; or ARB Method 100; or, for units using gaseous fuel scrubbed for sulfur pre-combustion, the sulfur content of the gaseous fuel being fired in the unit shall be determined using ASTM D 1072, D 3031, D 4084, D 3246 or a grab sample analysis by GC-FPD/TCD or double GC for H2S and mercaptans performed in the laboratory and EPA Method 19 to calculated emissions. Gaseous fuel fired units demonstrating compliance on two consecutive annual source tests shall be tested not less than once every thirty-six months, however annual source testing shall resume if any test fails to show compliance. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

30. If the unit is fired on noncertified gaseous fuel and compliance with SOx emission limits is achieved through fuel sulfur content limitations, then the sulfur content of the gaseous fuel being fired in the unit shall be determined using ASTM D 1072, D 3031, D 4084, D 3246 or grab sample analysis by GC-FPD/TCD or double GC for H2S and mercaptans performed in the laboratory. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

31. If fuel analysis is used to demonstrate compliance with the conditions of this permit, the fuel higher heating value for each fuel shall be certified by third party fuel supplier or determined by: D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District Rules 2520, 9.3.2; 4305, 6.2.1; and 4351, 6.2.1] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

32. Annual test results to the District from unit(s) representing a group of units may be used to measure NOx emissions of this permit for that group, provided the selection of the representative unit(s) is approved by the APCO prior to testing. Should any of the representative units exceed the required NOx emission limits of this permit, each of the units in the group shall demonstrate compliance by emissions testing within 90 days of the failed test. [District Rules 2520, 9.3.2, 4306, 6.3.2, and 4305, 6.3.2] Federally Enforceable Through Title V Permit

33. The following conditions must be met for representative unit(s) to be used to test for NOx limits for a group of units: 1) all units are initially source tested and emissions from each unit in group are less than 90% of the permitted value and vary 25% or less from the average of all runs, 2) all units in group are similar in terms of rated heat input (rating not to exceed 100 MMBtu/hr), make and series, operation conditions, and control method, and 3) the group is owned by a single owner and located at a single stationary source. [District Rules 2520, 9.3.2, 4306, 6.3.2, and 4305, 6.3.2] Federally Enforceable Through Title V Permit

34. All units in a group for which representative units are source for NOx emissions shall have received the same maintenance and tune-up procedures as the representative unit(s). Records shall be maintained for the each unit of the group including all preventative and corrective maintenance work done. [District Rules 2520, 9.3.2, 4306, 6.3.2, and 4305, 6.3.2] Federally Enforceable Through Title V Permit

35. All units in a group for which representative units are source tested for NOx emissions for this permit shall be fired on the same fuel type during the entire compliance period. If a unit switches for any time to an alternate fuel type (e.g. from natural gas to oil) then that unit shall not be considered part of the group and shall be required to undergo a source test for all fuel types used, within one year of the switch. [District Rules 2520, 9.3.2, 4306, 6.3.2, and 4305, 6.3.2] Federally Enforceable Through Title V Permit

36. The number of representative units source tested for NOx emissions shall be at least 30% of the total number of units in the group. The units included in the 30% shall be rotated, so that in 3 years, all units in the entire group will have been tested at least once. [District Rule 2520, 9.3.2, 4305, 6.3.2, and 4306, 6.3.2] Federally Enforceable Through Title V Permit

37. Copies of all gas purchase contracts, supplier certifications, and test results (including fuel hhv) to determine compliance with the conditions of this permit shall be maintained. The operator shall record daily amount and type(s) of fuel(s) combusted, fuel source, and all dates on which unit is fired on any noncertified fuel and record specific type of noncertified fuel used. [District Rule 2520, 9.3.2 and District NSR Rule] Federally Enforceable Through Title V Permit

38. 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

39. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following requirements of SJVUAPCD Rules 4201 (Amended December 17, 1992), and 4301 (Amended December 17, 1992). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

40. This unit commenced construction, modification, or reconstruction prior to June 19, 1984. This unit has not been used to produce electricity for sale in 1985 or on or after November 15, 1990. Therefore, the requirements of 40 CFR 72.6(b) and 40 CFR 60.40c do not apply to this source. A permit shield is granted from this requirement. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

41. Pursuant to Rule 4320, beginning in 2010 the operator shall pay an annual emission fee to the District for NOx emissions from this unit for the previous calendar year. Payments are due by July 1 of each year. Payments shall continue annually until either the unit is permanently removed from service in the District or the operator demonstrates compliance with the applicable NOx emission limit listed in Rule 4320. [District Rule 4320] Federally Enforceable Through Title V Permit

42. On and after July 1, 2010, the permittee shall submit an analysis showing the fuel's sulfur content at least once every year. Valid purchase contracts, supplier certifications, tariff sheets, or transportation contacts may be used to satisfy this requirement, provided they establish the fuel parameters mentioned above. [District Rule 4320] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

43. Permittee shall maintain records of annual heat input (MMBtu) for this unit on a calendar year basis. Such 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 and Rule 4320] Federally Enforceable Through Title V Permit

San Joaquin Valley
Air Pollution Control District

PERMIT UNIT: C-311-41-13 **EXPIRATION DATE:** 12/31/2016

SECTION: 25 **TOWNSHIP:** 20S **RANGE:** 14E

EQUIPMENT DESCRIPTION:
58.5 MMBTU/HR SG 25-20 STRUTHERS THERMOFLOOD STEAM GENERATOR, MODEL OH-50-ND-16XAM, WITH A NORTH AMERICAN GLE BURNER AND FLUE GAS RECIRCULATION SYSTEM, SERVED BY THE NEPTUNE AIRPOL CAUSTIC SCRUBBER WHEN FIRING WELL CASING AND/OR TANK VAPOR RECOVERY GAS

PERMIT UNIT REQUIREMENTS

1. Total LPG, casing gas, waste gas, and natural gas consumption shall not exceed 435,000 MMBtu/year. [District NSR Rule] Federally Enforceable Through Title V Permit
2. The caustic scrubber shall be operated to control SOx emissions when ever the steam generator is fueled with well casing and/or TVR gas. [District NSR Rule]
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 NSR Rule] Federally Enforceable Through Title V Permit
4. Nitrogen oxide (NOx) emissions shall not exceed 140 lb/hr, calculated as NO2. [District Rules 4301, 5.2.2, 5.3, and 5.5 and 2520, 9.3.2] Federally Enforceable Through Title V Permit
5. Emissions from this unit shall not exceed any of the following limits: 0.052 lb-SOx/MMBtu, 0.044 lb-PM10/MMBtu, or 0.0085 lb-VOC/MMBtu. [District NSR Rule] Federally Enforceable Through Title V Permit
6. Except during startup and shutdown, emissions from this unit shall not exceed any of the following limits: 15 ppmvd NOx @ 3% O2 or 0.018 lb-NOx/MMBtu, or 50 ppmvd CO @ 3% O2 or 0.037 lb-CO/MMBtu. [District NSR Rule and District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
7. During startup and shutdown, emission rates from the unit shall not exceed any of the following limits: 5.85 lb-NOx/hr, 3.04 lb-SOx/hr, 2.57 lb-PM10/hr, 4.91 lb-CO/hr, or 0.50 lb-VOC/hr. [District NSR Rule] Federally Enforceable Through Title V Permit
8. Duration of startup and shutdown shall not exceed two hours each per occurrence and, combined, shall not exceed 4 hours per day. During startup 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 startup and shutdown periods. [District Rule 4306, 5.3.1] Federally Enforceable Through Title V Permit
9. Startup 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
10. 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 2520, 9.3.2, 4305 and 4306] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

11. NOx, and CO emissions shall be measured with source testing conducted by independent testing laboratory and shall be witnessed or authorized by the District. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
12. 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
13. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305 and 4306, 5.5.1] Federally Enforceable Through Title V Permit
14. All required source testing shall conform to the compliance testing procedures described in District Rule 1081 (Amended December 16, 1993). [District Rule 1081] 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, 5.5.2] 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 and 4306, 5.5.5] 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. 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, 6.2.2] Federally Enforceable Through Title V Permit
19. CO emissions for source test purposes shall be determined using EPA Method 10, 10B, or ARB Method 100. [District Rule 2520, 9.3.2 and 4305] Federally Enforceable Through Title V Permit
20. Stack gas oxygen (O2) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305 and 4306, 6.2.4] Federally Enforceable Through Title V Permit
21. The permittee shall monitor and record the stack concentration of NOx, CO, and O2 at least once every month (in which a source test is not performed) using a portable 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, 5.4.2] Federally Enforceable Through Title V Permit
22. 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 and 4306, 5.4.2] Federally Enforceable Through Title V Permit
23. 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, 5.5.5] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

24. The permittee shall maintain records of: (1) the date and time of NOx, CO, and O2 measurements, (2) the O2 concentration in percent and the measured NOx and CO concentrations corrected to 3% O2, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, and 4306, 6.1] Federally Enforceable Through Title V Permit

25. Particulate matter emissions shall not exceed 0.1 grain/dscf, 0.1 grain/dscf calculated to 12% CO2, nor 10 lb/hr. [District Rules 4201, 3.1 and 4301, 5.1 and 5.2.3] Federally Enforceable Through Title V Permit

26. Emissions of sulfur compounds from this unit shall not exceed 200 lb/hr, calculated as SO2. Compliance with this requirement may be demonstrated by firing the unit only on PUC or FERC regulated natural gas or by testing the sulfur content of each fuel and determining the maximum hourly emissions of sulfur compounds by multiplying the sulfur content of each fuel in lb/MMBtu by the maximum heat input rating of the unit; or by source testing in combination with fuel analysis. [District Rules 2520, 9.3.2 and 4301, 5.2.1] Federally Enforceable Through Title V Permit

27. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, each fuel source shall be tested weekly for sulfur content and higher heating value. If compliance with the fuel sulfur content limit and sulfur emission limits has been demonstrated for 8 consecutive weeks for a fuel source, then the fuel testing frequency shall be semi-annually. If a semi-annual fuel content source test fails to show compliance, weekly testing shall resume. [District Rule 2520, 9.3.2 and District NSR Rule] Federally Enforceable Through Title V Permit

28. When complying with SOx emission limits by testing of stack emissions, testing shall be performed not less than once every 12 months using EPA Method 6; or ARB Method 100; or, for units using gaseous fuel scrubbed for sulfur pre-combustion, the sulfur content of the gaseous fuel being fired in the unit shall be determined using ASTM D 1072, D 3031, D 4084, D 3246 or a grab sample analysis by GC-FPD/TCD or double GC for H2S and mercaptans performed in the laboratory and EPA Method 19 to calculated emissions. Gaseous fuel fired units demonstrating compliance on two consecutive annual source tests shall be tested not less than once every thirty-six months, however annual source testing shall resume if any test fails to show compliance. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

29. If the unit is fired on noncertified gaseous fuel and compliance with SOx emission limits is achieved through fuel sulfur content limitations, then the sulfur content of the gaseous fuel being fired in the unit shall be determined using ASTM D 1072, D 3031, D 4084, D 3246 or grab sample analysis by GC-FPD/TCD or double GC for H2S and mercaptans performed in the laboratory. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

30. If fuel analysis is used to demonstrate compliance with the conditions of this permit, the fuel higher heating value for each fuel shall be certified by third party fuel supplier or determined by: D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District Rules 2520, 9.3.2; 4305, 6.2.1; 4306; and 4351, 6.2.1] Federally Enforceable Through Title V Permit

31. Annual test results to the District from unit(s) representing a group of units may be used to measure NOx emissions of this permit for that group, provided the selection of the representative unit(s) is approved by the APCO prior to testing. Should any of the representative units exceed the required NOx emission limits of this permit, each of the units in the group shall demonstrate compliance by emissions testing within 90 days of the failed test. [District Rules 2520, 9.3.2, 4306, and 4305, 6.3.2] Federally Enforceable Through Title V Permit

32. The following conditions must be met for representative unit(s) to be used to test for NOx limits for a group of units: 1) all units are initially source tested and emissions from each unit in group are less than 90% of the permitted value and vary 25% or less from the average of all runs, 2) all units in group are similar in terms of rated heat input (rating not to exceed 100 MMBtu/hr), make and series, operation conditions, and control method, and 3) the group is owned by a single owner and located at a single stationary source. [District Rules 2520, 9.3.2, 4306, and 4305, 6.3.2] Federally Enforceable Through Title V Permit

33. All units in a group for which representative units are source for NOx emissions shall have received the same maintenance and tune-up procedures as the representative unit(s). Records shall be maintained for the each unit of the group including all preventative and corrective maintenance work done. [District Rules 2520, 9.3.2, 4306, and 4305, 6.3.2] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

34. All units in a group for which representative units are source tested for NOx emissions for this permit shall be fired on the same fuel type during the entire compliance period. If a unit switches for any time to an alternate fuel type (e.g. from natural gas to oil) then that unit shall not be considered part of the group and shall be required to undergo a source test for all fuel types used, within one year of the switch. [District Rules 2520, 9.3.2, 4306, and 4305, 6.3.2] Federally Enforceable Through Title V Permit

35. The number of representative units source tested for NOx emissions shall be at least 30% of the total number of units in the group. The units included in the 30% shall be rotated, so that in 3 years, all units in the entire group will have been tested at least once. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

36. Copies of all gas purchase contracts, supplier certifications, and test results (including fuel hhv) to determine compliance with the conditions of this permit shall be maintained. The operator shall record daily amount and type(s) of fuel(s) combusted, fuel source, and all dates on which unit is fired on any noncertified fuel and record specific type of noncertified fuel used. [District Rule 2520, 9.3.2 and District NSR Rule] Federally Enforceable Through Title V Permit

37. Permittee shall record natural gas, propane, casing gas and waste gas consumption. [District Rules 1070 and 2520, 9.3.2] Federally Enforceable Through Title V Permit

38. Permittee shall measure and record the BTU content of the gas burned at the time of NOx testing, except for natural gas purchased from a PUC regulated utility. [District NSR Rule and District Rule 4801] Federally Enforceable Through Title V Permit

39. Permittee shall maintain with the permit a current listing of all TEOR and TVR systems providing vapor to this steam generator and shall make such listing readily available for District inspection upon request. [District NSR Rule] Federally Enforceable Through Title V Permit

40. Permittee shall maintain daily records of volume of fuel gas burned, TEOR/TVR gas incinerated, and permit number(s) of systems providing gas for incineration. [District NSR Rule] Federally Enforceable Through Title V Permit

41. 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

42. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following requirements of SJVUAPCD Rules 4201 (Amended December 17, 1992), and 4301 (Amended December 17, 1992). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

43. The requirements of 40 CFR 72.6(b) and 40 CFR 60.40c do not apply to this source. A permit shield is granted from this requirement. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

44. Pursuant to Rule 4320, beginning in 2010 the operator shall pay an annual emission fee to the District for NOx emissions from this unit for the previous calendar year. Payments are due by July 1 of each year. Payments shall continue annually until either the unit is permanently removed from service in the District or the operator demonstrates compliance with the applicable NOx emission limit listed in Rule 4320. [District Rule 4320] Federally Enforceable Through Title V Permit

45. On and after July 1, 2010, the permittee shall submit an analysis showing the fuel's sulfur content at least once every year. Valid purchase contracts, supplier certifications, tariff sheets, or transportation contacts may be used to satisfy this requirement, provided they establish the fuel parameters mentioned above. [District Rule 4320] Federally Enforceable Through Title V Permit

46. Permittee shall maintain records of annual heat input (MMBtu) for this unit on a calendar year basis. Such 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 and Rule 4320] Federally Enforceable Through Title V Permit

San Joaquin Valley
Air Pollution Control District

PERMIT UNIT: C-311-42-18 **EXPIRATION DATE:** 12/31/2016

SECTION: 25 **TOWNSHIP:** 20S **RANGE:** 14E

EQUIPMENT DESCRIPTION:
58.5 MMBTU/HR SG 25-21 STRUTHERS THERMOFLOOD STEAM GENERATOR, MODEL OH-50-ND-16XAM, WITH A NORTH AMERICAN GLE LOW NOX BURNER AND FLUE GAS RECIRCULATION SYSTEM

PERMIT UNIT REQUIREMENTS

1. This unit shall be fired exclusively on PUC-quality natural gas or LPG. [District Rule 2201] Federally Enforceable Through Title V Permit
2. Fuel gas shall not contain more than 5 grains of total sulfur per 100 standard cubic feet. [District Rule 4320] Federally Enforceable Through Title V Permit
3. Total fuel consumption shall not exceed the following limits: 1,404 MMBtu/day nor 434,700 MMBtu/year. [District Rule 2201] Federally Enforceable Through Title V Permit
4. The permittee shall maintain a non-resettable, totalizing mass or volumetric flow meter in each fuel line to the steam generator. [District Rule 2201] Federally Enforceable Through Title V Permit
5. Emissions from the steam generator shall not exceed any of the following limits: 0.0143 lb-SOx/MMBtu, 0.045 lb-PM10/MMBtu, or 0.003 lb-VOC/MMBtu. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
6. Except during start-up and shutdown periods emissions from the steam generator shall not exceed any of the following limits: 15 ppmvd NOx @ 3% O2 or 0.018 lb-NOx/MMBtu or 50 ppmvd CO @ 3% O2 or 0.037 lb-CO/MMBtu. [District Rule 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
7. During start-up and shutdown periods emissions from the steam generator shall not exceed either of the following limits: 0.1 lb-NOx/MMBtu or 0.084 lb-CO/MMBtu. [District Rule 2201] 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: 50.5 lb-NOx/day, 7,825 lb-NOx/yr, 51.9 lb-CO/day, and 16,084 lb-CO/yr. [District Rule 2201, 4305, 4306, and 4320] 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 2201, 4305, 4306, and 4320] 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 Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

11. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, each fuel source shall be tested weekly for sulfur content and higher heating value. If compliance with the fuel sulfur content limit and sulfur emission limits has been demonstrated for 8 consecutive weeks for a fuel source, then the fuel testing frequency shall be semi-annually. If a semi-annual fuel content source test fails to show compliance, weekly testing shall resume. [District Rules 2520, 9.3.2 and 4320] Federally Enforceable Through Title V Permit

12. When complying with SOx emission limits by testing of stack emissions, testing shall be performed not less than once every 12 months using EPA Method 6; or ARB Method 100; or, for units using gaseous fuel scrubbed for sulfur pre-combustion, the sulfur content of the gaseous fuel being fired in the unit shall be determined using ASTM D 1072, D 3031, D 4084, D 3246 or a grab sample analysis by GC-FPD/TCD or double GC for H2S and mercaptans performed in the laboratory and EPA Method 19 to calculated emissions. Gaseous fuel fired units demonstrating compliance on two consecutive annual source tests shall be tested not less than once every thirty-six months, however annual source testing shall resume if any test fails to show compliance. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

13. If the unit is fired on noncertified gaseous fuel and compliance with SOx emission limits is achieved through fuel sulfur content limitations, then the sulfur content of the gaseous fuel being fired in the unit shall be determined using ASTM D 1072, D 3031, D 4084, D 3246 or grab sample analysis by GC-FPD/TCD or double GC for H2S and mercaptans performed in the laboratory. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

14. If fuel analysis is used to demonstrate compliance with the conditions of this permit, the fuel higher heating value for each fuel shall be certified by third party fuel supplier or determined by: D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District Rule 2520, 9.3.2; 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

15. Source testing to measure natural gas-combustion NOx and CO emissions from this unit shall be conducted at least once every twelve (12) months. 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

16. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit

17. The following test methods shall be used: NOx (ppmv) - EPA Method 7E or ARB Method 100, NOx (lb/MMBtu) - EPA Method 19, CO (ppmv) - EPA Method 10 or 10B or ARB Method 100, Stack Gas Oxygen - EPA Method 3 or 3A or ARB Method 100, Stack Gas Velocity (ft/min) - EPA Method 2, Stack Gas Moisture Content (%) - EPA Method 4, SOx (lb/MMBtu) - ARB Method 100 or EPA Method 6, 6C or fuel gas sulfur content analysis and EPA Method 19, Fuel Gas Sulfur Content - EPA Method 11 or 15, ASTM D3246 or double GC for H2S and mercaptans performed in a laboratory, fuel gas hhv - ASTM D1826 or D1945 in conjunction with ASTM D3588. [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 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

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

20. If either the NOx or CO concentrations corrected to 3% O2, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4305, 4306, and 4320] 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 NOx, CO, and O2 measurements, (2) the O2 concentration in percent and the measured NOx and CO concentrations corrected to 3% O2, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

23. 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

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 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

26. Permittee shall maintain records of higher heating value (hhv), in MMBtu/scf, for each gaseous fuel used in this operation. [District Rule 2201] Federally Enforceable Through Title V Permit

27. Copies of all , gas purchase contracts, supplier certifications, and test results to determine compliance with the conditions of this permit shall be maintained. The operator shall record daily amount and type(s) of fuel(s) combusted, fuel source, and all dates on which unit is fired on any noncertified fuel and record specific type of noncertified fuel used. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

28. 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

29. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following requirements: SJVUAPCD Rules 4201 (Amended December 17, 1992), and 4301 (Amended December 17, 1992). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

30. Compliance with permit conditions in the Title V permit shall be deemed compliance with the requirements of County Rules 108 (Kings), 108.1 (Fresno, Merced, San Joaquin, Tulare, Kern, and Stanislaus), and 110 (Madera), 402 (Madera), 404 (Fresno, Kern, Tulare, Kings, Stanislaus, Merced, and San Joaquin), 405 (Madera), 408 (Fresno, Kern, Tulare, Kings, Stanislaus, Merced, and San Joaquin), 407.2 (Kern, Tulare, Kings, Stanislaus, and San Joaquin), and 408.2 (Merced). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

31. The requirements of 40 CFR 72.6(b) and 40 CFR 60.40c do not apply to this source. A permit shield is granted from this requirement. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

32. Pursuant to Rule 4320, beginning in 2010 the operator shall pay an annual emission fee to the District for NOx emissions from this unit for the previous calendar year. Payments are due by July 1 of each year. Payments shall continue annually until either the unit is permanently removed from service in the District or the operator demonstrates compliance with the applicable NOx emission limit listed in Rule 4320. [District Rule 4320] Federally Enforceable Through Title V Permit

33. Permittee shall maintain records of annual heat input (MMBtu) for this unit on a calendar year basis. Such 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 and Rule 4320] Federally Enforceable Through Title V Permit

San Joaquin Valley
Air Pollution Control District

PERMIT UNIT: C-311-43-16 **EXPIRATION DATE:** 12/31/2016

SECTION: 25 **TOWNSHIP:** 20S **RANGE:** 14E

EQUIPMENT DESCRIPTION:
58.5 MMBTU/HR SG 25-22 STRUTHERS THERMOFLOOD STEAM GENERATOR, MODEL OH-50-ND-16AXM, WITH A NORTH AMERICAN GLE LOW-NOX BURNER AND A FLUE GAS RECIRCULATION (FGR) SYSTEM

PERMIT UNIT REQUIREMENTS

1. This unit shall be fired exclusively on PUC-quality natural gas or LPG. [District Rule 2201] Federally Enforceable Through Title V Permit
2. Fuel gas shall not contain more than 5 grains of total sulfur per 100 standard cubic feet. [District Rule 4320] Federally Enforceable Through Title V Permit
3. Total fuel consumption shall not exceed 1,404 MMBtu/day nor 434,700 MMBtu/year. [District Rule 2201] Federally Enforceable Through Title V Permit
4. The permittee shall maintain a non-resettable, totalizing mass or volumetric flow meter in each fuel line to the steam generator. [District Rule 2201] Federally Enforceable Through Title V Permit
5. Emissions of sulfur compounds from this unit shall not exceed 200 lb/hr, calculated as SO2. Compliance with this requirement may be demonstrated by firing the unit only on PUC or FERC regulated natural gas or by testing the sulfur content of each fuel and determining the maximum hourly emissions of sulfur compounds by multiplying the sulfur content of each fuel in lb/MMBtu by the maximum heat input rating of the unit; or by source testing in combination with fuel analysis. [District Rules 2520, 9.4.2 and 4301, 5.2.1] Federally Enforceable Through Title V Permit
6. Emissions from the steam generator shall not exceed any of the following limits: 0.0143 lb-SOx/MMBtu, 0.045 lb-PM10/MMBtu, or 0.003 lb-VOC/MMBtu. [District Rules 2201 and 4320] 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: 15 ppmvd NOx @ 3% O2 or 0.018 lb-NOx/MMBtu or 50 ppmvd CO @ 3% O2 or 0.037 lb-CO/MMBtu. [District Rule 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
8. During start-up and shutdown periods emissions from the steam generator shall not exceed either of the following limits: 0.1 lb-NOx/MMBtu or 0.084 lb-CO/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit
9. Maximum emissions from the steam generator, including start-up and shutdown, shall not exceed any of the following limits: 50.5 lb-NOx/day, 7,825 lb-NOx/yr, 51.9 lb-CO/day, and 16,084 lb-CO/yr. [District Rule 2201, 4305, 4306, and 4320] 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 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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 Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

12. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, each fuel source shall be tested weekly for sulfur content and higher heating value. If compliance with the fuel sulfur content limit and sulfur emission limits has been demonstrated for 8 consecutive weeks for a fuel source, then the fuel testing frequency shall be semi-annually. If a semi-annual fuel content source test fails to show compliance, weekly testing shall resume. [District Rules 2520, 9.3.2 and 4320] Federally Enforceable Through Title V Permit

13. When complying with SOx emission limits by testing of stack emissions, testing shall be performed not less than once every 12 months using EPA Method 6; or ARB Method 100; or, for units using gaseous fuel scrubbed for sulfur pre-combustion, the sulfur content of the gaseous fuel being fired in the unit shall be determined using ASTM D 1072, D 3246, D 4084, or a grab sample analysis by GC-FPD/TCD or double GC for H2S and mercaptans performed in the laboratory and EPA Method 19 to calculated emissions. Gaseous fuel fired units demonstrating compliance on two consecutive annual source tests shall be tested not less than once every thirty-six months, however annual source testing shall resume if any test fails to show compliance. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

14. If the unit is fired on noncertified gaseous fuel and compliance with SOx emission limits is achieved through fuel sulfur content limitations, then the sulfur content of the gaseous fuel being fired in the unit shall be determined using ASTM D 1072, D 3246, D 4084, or grab sample analysis by GC-FPD/TCD or double GC for H2S and mercaptans performed in the laboratory. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

15. If fuel analysis is used to demonstrate compliance with the conditions of this permit, the fuel higher heating value for each fuel shall be certified by third party fuel supplier or determined by: D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District Rule 2520, 9.3.2; 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

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, 4306, and 4320] 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. The following test methods shall be used: NOx (ppmv) - EPA Method 7E or ARB Method 100, NOx (lb/MMBtu) - EPA Method 19, CO (ppmv) - EPA Method 10 or 10B or ARB Method 100, Stack Gas Oxygen - EPA Method 3 or 3A or ARB Method 100, Stack Gas Velocity (ft/min) - EPA Method 2, Stack Gas Moisture Content (%) - EPA Method 4, SOx (lb/MMBtu) - ARB Method 100 or EPA Method 6, 6C or fuel gas sulfur content analysis and EPA Method 19, Fuel Gas Sulfur Content - EPA Method 11 or 15, ASTM D3246 or double GC for H2S and mercaptans performed in a laboratory, fuel gas hhv - ASTM D1826 or D1945 in conjunction with ASTM D3588. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

19. 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

20. 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

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

22. 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

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

24. 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

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 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

27. Permittee shall maintain records of higher heating value (hhv), in MMBtu/scf, for each gaseous fuel used in this operation. [District Rule 2201] Federally Enforceable Through Title V Permit

28. Copies of all , gas purchase contracts, supplier certifications, and test results to determine compliance with the conditions of this permit shall be maintained. The operator shall record daily amount and type(s) of fuel(s) combusted, fuel source, and all dates on which unit is fired on any noncertified fuel and record specific type of noncertified fuel used. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

29. 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

30. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following requirements: SJVUAPCD Rules 4201 (Amended December 17, 1992), and 4301 (Amended December 17, 1992). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

31. Compliance with permit conditions in the Title V permit shall be deemed compliance with the requirements of County Rules 108 (Kings), 108.1 (Fresno, Merced, San Joaquin, Tulare, Kern, and Stanislaus), and 110 (Madera), 402 (Madera), 404 (Fresno, Kern, Tulare, Kings, Stanislaus, Merced, and San Joaquin), 405 (Madera), 408 (Fresno, Kern, Tulare, Kings, Stanislaus, Merced, and San Joaquin), 407.2 (Kern, Tulare, Kings, Stanislaus, and San Joaquin), and 408.2 (Merced). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

32. The requirements of 40 CFR 72.6(b) and 40 CFR 60.40c do not apply to this source. A permit shield is granted from this requirement. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

33. Pursuant to Rule 4320, beginning in 2010 the operator shall pay an annual emission fee to the District for NOx emissions from this unit for the previous calendar year. Payments are due by July 1 of each year. Payments shall continue annually until either the unit is permanently removed from service in the District or the operator demonstrates compliance with the applicable NOx emission limit listed in Rule 4320. [District Rule 4320] Federally Enforceable Through Title V Permit

34. Permittee shall maintain records of annual heat input (MMBtu) for this unit on a calendar year basis. Such 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 and Rule 4320] Federally Enforceable Through Title V Permit

San Joaquin Valley
Air Pollution Control District

PERMIT UNIT: C-311-45-15 **EXPIRATION DATE:** 12/31/2016

SECTION: 25 **TOWNSHIP:** 20S **RANGE:** 14E

EQUIPMENT DESCRIPTION:
58.5 MMBTU/HR SG 25-24 STRUTHERS THERMOFLOOD STEAM GENERATOR, MODEL OH-50-ND-16AXM, WITH A NORTH AMERICAN GLE LOW NOX BURNER AND FLUE GAS RECIRCULATION SYSTEM

PERMIT UNIT REQUIREMENTS

1. This unit shall be fired exclusively on PUC-quality natural gas or LPG. [District Rule 2201] Federally Enforceable Through Title V Permit
2. Fuel gas shall not contain more than 5 grains of total sulfur per 100 standard cubic feet. [District Rule 4320] Federally Enforceable Through Title V Permit
3. Total fuel consumption shall not exceed the following limits: 1,404 MMBtu/day nor 434,700 MMBtu/year. [District Rule 2201] Federally Enforceable Through Title V Permit
4. The permittee shall maintain a non-resettable, totalizing mass or volumetric flow meter in each fuel line to the steam generator. [District Rule 2201] Federally Enforceable Through Title V Permit
5. Emissions from the steam generator shall not exceed any of the following limits: 0.0143 lb-SOx/MMBtu, 0.045 lb-PM10/MMBtu, or 0.003 lb-VOC/MMBtu. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
6. Except during start-up and shutdown periods emissions from the steam generator shall not exceed any of the following limits: 15 ppmvd NOx @ 3% O2 or 0.018 lb-NOx/MMBtu or 50 ppmvd CO @ 3% O2 or 0.037 lb-CO/MMBtu. [District Rule 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
7. During start-up and shutdown periods emissions from the steam generator shall not exceed either of the following limits: 0.1 lb-NOx/MMBtu or 0.084 lb-CO/MMBtu. [District Rule 2201] 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: 50.5 lb-NOx/day, 7,825 lb-NOx/yr, 51.9 lb-CO/day, and 16,084 lb-CO/yr. [District Rule 2201, 4305, 4306, and 4320] 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 2201, 4305, 4306, and 4320] 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 Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

11. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, each fuel source shall be tested weekly for sulfur content and higher heating value. If compliance with the fuel sulfur content limit and sulfur emission limits has been demonstrated for 8 consecutive weeks for a fuel source, then the fuel testing frequency shall be semi-annually. If a semi-annual fuel content source test fails to show compliance, weekly testing shall resume. [District Rules 2520, 9.3.2 and 4320] Federally Enforceable Through Title V Permit

12. When complying with SOx emission limits by testing of stack emissions, testing shall be performed not less than once every 12 months using EPA Method 6; or ARB Method 100; or, for units using gaseous fuel scrubbed for sulfur pre-combustion, the sulfur content of the gaseous fuel being fired in the unit shall be determined using ASTM D 1072, D 3031, D 4084, D 3246 or a grab sample analysis by GC-FPD/TCD or double GC for H2S and mercaptans performed in the laboratory and EPA Method 19 to calculated emissions. Gaseous fuel fired units demonstrating compliance on two consecutive annual source tests shall be tested not less than once every thirty-six months, however annual source testing shall resume if any test fails to show compliance. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

13. If the unit is fired on noncertified gaseous fuel and compliance with SOx emission limits is achieved through fuel sulfur content limitations, then the sulfur content of the gaseous fuel being fired in the unit shall be determined using ASTM D 1072, D 3031, D 4084, D 3246 or grab sample analysis by GC-FPD/TCD or double GC for H2S and mercaptans performed in the laboratory. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

14. If fuel analysis is used to demonstrate compliance with the conditions of this permit, the fuel higher heating value for each fuel shall be certified by third party fuel supplier or determined by: D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District Rule 2520, 9.3.2; 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

15. Source testing to measure natural gas-combustion NOx and CO emissions from this unit shall be conducted at least once every twelve (12) months. 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

16. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit

17. The following test methods shall be used: NOx (ppmv) - EPA Method 7E or ARB Method 100, NOx (lb/MMBtu) - EPA Method 19, CO (ppmv) - EPA Method 10 or 10B or ARB Method 100, Stack Gas Oxygen - EPA Method 3 or 3A or ARB Method 100, Stack Gas Velocity (ft/min) - EPA Method 2, Stack Gas Moisture Content (%) - EPA Method 4, SOx (lb/MMBtu) - ARB Method 100 or EPA Method 6, 6C or fuel gas sulfur content analysis and EPA Method 19, Fuel Gas Sulfur Content - EPA Method 11 or 15, ASTM D3246 or double GC for H2S and mercaptans performed in a laboratory, fuel gas hhv - ASTM D1826 or D1945 in conjunction with ASTM D3588. [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 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

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

20. If either the NOx or CO concentrations corrected to 3% O2, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4305, 4306, and 4320] 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 NOx, CO, and O2 measurements, (2) the O2 concentration in percent and the measured NOx and CO concentrations corrected to 3% O2, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

23. 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

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 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

26. Permittee shall maintain records of higher heating value (hhv), in MMBtu/scf, for each gaseous fuel used in this operation. [District Rule 2201] Federally Enforceable Through Title V Permit

27. Copies of all , gas purchase contracts, supplier certifications, and test results to determine compliance with the conditions of this permit shall be maintained. The operator shall record daily amount and type(s) of fuel(s) combusted, fuel source, and all dates on which unit is fired on any noncertified fuel and record specific type of noncertified fuel used. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

28. 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

29. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following requirements: SJVUAPCD Rules 4201 (Amended December 17, 1992), and 4301 (Amended December 17, 1992). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

30. Compliance with permit conditions in the Title V permit shall be deemed compliance with the requirements of County Rules 108 (Kings), 108.1 (Fresno, Merced, San Joaquin, Tulare, Kern, and Stanislaus), and 110 (Madera), 402 (Madera), 404 (Fresno, Kern, Tulare, Kings, Stanislaus, Merced, and San Joaquin), 405 (Madera), 408 (Fresno, Kern, Tulare, Kings, Stanislaus, Merced, and San Joaquin), 407.2 (Kern, Tulare, Kings, Stanislaus, and San Joaquin), and 408.2 (Merced). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

31. The requirements of 40 CFR 72.6(b) and 40 CFR 60.40c do not apply to this source. A permit shield is granted from this requirement. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

32. Pursuant to Rule 4320, beginning in 2010 the operator shall pay an annual emission fee to the District for NOx emissions from this unit for the previous calendar year. Payments are due by July 1 of each year. Payments shall continue annually until either the unit is permanently removed from service in the District or the operator demonstrates compliance with the applicable NOx emission limit listed in Rule 4320. [District Rule 4320] Federally Enforceable Through Title V Permit

33. Permittee shall maintain records of annual heat input (MMBtu) for this unit on a calendar year basis. Such 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 and Rule 4320] Federally Enforceable Through Title V Permit

San Joaquin Valley
Air Pollution Control District

PERMIT UNIT: C-311-52-16 **EXPIRATION DATE:** 12/31/2016

SECTION: 6 **TOWNSHIP:** 20S **RANGE:** 15E

EQUIPMENT DESCRIPTION:
58.5 MMBTU/HR SG STRUTHERS THERMOFLOOD STEAM GENERATOR #6-32, MODEL 0H-50-ND-16XAM, EQUIPPED WITH A NORTH AMERICAN GLE LOW-NOX BURNER, FLUE GAS RECIRCULATION SYSTEM, AND AN OXYGEN CONTROLLER

PERMIT UNIT REQUIREMENTS

1. This unit shall be fired exclusively on PUC-quality natural gas. [District Rule 2201] Federally Enforceable Through Title V Permit
2. Fuel gas shall not contain more than 5 grains of total sulfur per 100 standard cubic feet. [District Rule 4320] Federally Enforceable Through Title V Permit
3. Total fuel consumption of this unit shall not exceed the following limits: 1,404 MMBtu/day nor 457,800 MMBtu/year. [District Rule 2201] Federally Enforceable Through Title V Permit
4. The permittee shall maintain a non-resettable, totalizing mass or volumetric flow meter in the fuel line to the steam generator. [District Rule 2201] Federally Enforceable Through Title V Permit
5. Sulfur compound emissions shall not exceed 0.2% by volume, 2000 ppmv, on a dry basis averaged over 15 consecutive minutes. [District Rule 4801] Federally Enforceable Through Title V Permit
6. Emissions of sulfur compounds from this unit shall not exceed 200 lb/hr, calculated as SO2. Compliance with this requirement may be demonstrated by firing the unit only on PUC or FERC regulated natural gas or by testing the sulfur content of each fuel and determining the maximum hourly emissions of sulfur compounds by multiplying the sulfur content of each fuel in lb/MMBtu by the maximum heat input rating of the unit; or by source testing in combination with fuel analysis. [District Rules 2520, 9.4.2 and 4301, 5.2.1] Federally Enforceable Through Title V Permit
7. Emissions from the steam generator shall not exceed any of the following limits: 0.0143 lb-SOx/MMBtu, 0.005 lb-PM10/MMBtu, or 0.008 lb-VOC/MMBtu. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
8. Except during start-up and shutdown periods emissions from the steam generator shall not exceed any of the following limits: 15 ppmvd NOx @ 3% O2 or 0.018 lb-NOx/MMBtu or 50 ppmvd CO @ 3% O2 or 0.037 lb-CO/MMBtu. [District Rule 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
9. During start-up and shutdown periods emissions from the steam generator shall not exceed either of the following limits: 0.1 lb-NOx/MMBtu or 0.084 lb-CO/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Maximum emissions from the steam generator, including start-up and shutdown, shall not exceed any of the following limits: 50.5 lb-NOx/day, 8,240 lb-NOx/yr, 51.9 lb-CO/day, and 16,939 lb-CO/yr. [District Rule 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

11. 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 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

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

13. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, each fuel source shall be tested weekly for sulfur content and higher heating value. If compliance with the fuel sulfur content limit and sulfur emission limits has been demonstrated for 8 consecutive weeks for a fuel source, then the fuel testing frequency shall be semi-annually. If a semi-annual fuel content source test fails to show compliance, weekly testing shall resume. [District Rules 2520, 9.4.2 and 4320] Federally Enforceable Through Title V Permit

14. When complying with SOx emission limits by testing of stack emissions, testing shall be performed not less than once every 12 months using EPA Method 6; or ARB Method 100; or, for units using gaseous fuel scrubbed for sulfur pre-combustion, the sulfur content of the gaseous fuel being fired in the unit shall be determined using ASTM D 1072, D 3031, D 4084, D 3246 or a grab sample analysis by GC-FPD/TCD or double GC for H2S and mercaptans performed in the laboratory and EPA Method 19 to calculated emissions. Gaseous fuel fired units demonstrating compliance on two consecutive annual source tests shall be tested not less than once every thirty-six months, however annual source testing shall resume if any test fails to show compliance. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

15. If the unit is fired on noncertified gaseous fuel and compliance with SOx emission limits is achieved through fuel sulfur content limitations, then the sulfur content of the gaseous fuel being fired in the unit shall be determined using ASTM D 1072, D 3031, D 4084, D 3246 or grab sample analysis by GC-FPD/TCD or double GC for H2S and mercaptans performed in the laboratory. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

16. If fuel analysis is used to demonstrate compliance with the conditions of this permit, the fuel higher heating value for each fuel shall be certified by third party fuel supplier or determined by: D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District Rule 2520, 9.4.2; 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

17. 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

18. NOx, and CO emissions shall be measured with source testing conducted by independent testing laboratory and shall be witnessed or authorized by the District [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

19. All required source testing shall conform to the compliance testing procedures described in District Rule 1081 (Amended December 16, 1993). [District Rule 1081] Federally Enforceable Through Title V Permit

20. The District must be notified 30 days prior to any compliance source test, and a source test plan must be submitted for approval 15 days prior to testing. The source test plan shall indicate which test method shall be used to demonstrate compliance. [District Rule 1081] Federally Enforceable Through Title V Permit

21. The results of each source test shall be submitted to the District within 60 days after completion of the test. [District Rule 1081] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

22. The following test methods shall be used: NOx (ppmv) - EPA Method 7E or ARB Method 100, NOx (lb/MMBtu) - EPA Method 19, CO (ppmv) - EPA Method 10 or 10B or ARB Method 100, Stack Gas Oxygen - EPA Method 3 or 3A or ARB Method 100, Stack Gas Velocity (ft/min) - EPA Method 2, Stack Gas Moisture Content (%) - EPA Method 4, SOx (lb/MMBtu) - ARB Method 100 or EPA Method 6, 6C or fuel gas sulfur content analysis and EPA Method 19, Fuel Gas Sulfur Content - EPA Method 11 or 15, ASTM D3246 or double GC for H2S and mercaptans performed in a laboratory, fuel gas hhv - ASTM D1826 or D1945 in conjunction with ASTM D3588. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

23. Sampling facilities for source testing shall be provided in accordance with the provisions of rule 1081 (Source Sampling). [District Rule 1081] Federally Enforceable Through Title V Permit

24. 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

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

26. 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

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

28. Natural gas sulfur content and higher heating value (hhv) shall be certified by a third party fuel supplier of each fuel source or natural gas shall be tested for sulfur content and higher heating value (hhv) monthly. [District Rule 2201] Federally Enforceable Through Title V Permit

29. 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

30. 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

31. 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

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

32. Permittee shall maintain records of higher heating value (hhv), in MMBtu/scf, for each gaseous fuel used in this operation. [District Rule 2201] Federally Enforceable Through Title V Permit

33. Copies of all , gas purchase contracts, supplier certifications, and test results to determine compliance with the conditions of this permit shall be maintained. The operator shall record daily amount and type(s) of fuel(s) combusted, fuel source, and all dates on which unit is fired on any noncertified fuel and record specific type of noncertified fuel used. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

34. 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

35. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following requirements: SJVUAPCD Rules 1081 (Amended December 16, 1993), 4201 (Amended December 17, 1992), and 4301 (Amended December 17, 1992). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

36. Compliance with permit conditions in the Title V permit shall be deemed compliance with the requirements of County Rules 108 (Kings), 108.1 (Fresno, Merced, San Joaquin, Tulare, Kern, and Stanislaus), and 110 (Madera), 402 (Madera), 404 (Fresno, Kern, Tulare, Kings, Stanislaus, Merced, and San Joaquin), 405 (Madera), 408 (Fresno, Kern, Tulare, Kings, Stanislaus, Merced, and San Joaquin), 407.2 (Kern, Tulare, Kings, Stanislaus, and San Joaquin), and 408.2 (Merced). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

37. The requirements of 40 CFR 72.6(b) and 40 CFR 60.40c do not apply to this source. A permit shield is granted from this requirement. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

38. Pursuant to Rule 4320, beginning in 2010 the operator shall pay an annual emission fee to the District for NOx emissions from this unit for the previous calendar year. Payments are due by July 1 of each year. Payments shall continue annually until either the unit is permanently removed from service in the District or the operator demonstrates compliance with the applicable NOx emission limit listed in Rule 4320. [District Rule 4320] Federally Enforceable Through Title V Permit

39. Permittee shall maintain records of annual heat input (MMBtu) for this unit on a calendar year basis. Such 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 and Rule 4320] Federally Enforceable Through Title V Permit

San Joaquin Valley
Air Pollution Control District

PERMIT UNIT: C-311-53-17 **EXPIRATION DATE:** 12/31/2016

SECTION: 6C **TOWNSHIP:** 20S **RANGE:** 15E

EQUIPMENT DESCRIPTION:
58.5 MMBTU/HR STRUTHERS THERMOFLOOD STEAM GENERATOR #6-33, MODEL OH-50-ND-16XAM, EQUIPPED WITH A NORTH AMERICAN GLE LOW-NOX BURNER (OR DISTRICT APPROVED EQUIVALENT), FLUE GAS RECIRCULATION SYSTEM, AND AN OXYGEN CONTROLLER

PERMIT UNIT REQUIREMENTS

1. This unit shall be fired exclusively with natural gas. [District Rule 2201] Federally Enforceable Through Title V Permit
2. Fuel gas shall not contain more than 5 grains of total sulfur per 100 standard cubic feet. [District Rule 4320] Federally Enforceable Through Title V Permit
3. Total fuel consumption of this unit shall not exceed the following limits: 1,404 MMBtu/day nor 457,800 MMBtu/year. [District Rule 2201] Federally Enforceable Through Title V Permit
4. The permittee shall maintain a non-resettable, totalizing mass or volumetric flow meter in the fuel line to the steam generator. [District Rule 2201] Federally Enforceable Through Title V Permit
5. Sulfur compound emissions shall not exceed 0.2% by volume, 2000 ppmv, on a dry basis averaged over 15 consecutive minutes. [District Rule 4801] Federally Enforceable Through Title V Permit
6. Emissions of sulfur compounds from this unit shall not exceed 200 lb/hr, calculated as SO2. Compliance with this requirement may be demonstrated by firing the unit only on PUC or FERC regulated natural gas or by testing the sulfur content of each fuel and determining the maximum hourly emissions of sulfur compounds by multiplying the sulfur content of each fuel in lb/MMBtu by the maximum heat input rating of the unit; or by source testing in combination with fuel analysis. [District Rules 2520, 9.4.2 and 4301, 5.2.1] Federally Enforceable Through Title V Permit
7. Emissions from the steam generator shall not exceed any of the following limits: 0.0143 lb-SOx/MMBtu, 0.005 lb-PM10/MMBtu, or 0.008 lb-VOC/MMBtu. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
8. Except during start-up and shutdown periods emissions from the steam generator shall not exceed any of the following limits: 15 ppmvd NOx @ 3% O2 or 0.018 lb-NOx/MMBtu or 50 ppmvd CO @ 3% O2 or 0.037 lb-CO/MMBtu. [District Rule 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
9. During start-up and shutdown periods emissions from the steam generator shall not exceed either of the following limits: 0.1 lb-NOx/MMBtu or 0.084 lb-CO/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Maximum emissions from the steam generator, including start-up and shutdown, shall not exceed any of the following limits: 50.5 lb-NOx/day, 8,240 lb-NOx/yr, 51.9 lb-CO/day, and 16,939 lb-CO/yr. [District Rule 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

11. 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 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

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

13. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, each fuel source shall be tested weekly for sulfur content and higher heating value. If compliance with the fuel sulfur content limit and sulfur emission limits has been demonstrated for 8 consecutive weeks for a fuel source, then the fuel testing frequency shall be semi-annually. If a semi-annual fuel content source test fails to show compliance, weekly testing shall resume. [District Rules 2520, 9.4.2 and 4320] Federally Enforceable Through Title V Permit

14. When complying with SOx emission limits by testing of stack emissions, testing shall be performed not less than once every 12 months using EPA Method 6; or ARB Method 100; or, for units using gaseous fuel scrubbed for sulfur pre-combustion, the sulfur content of the gaseous fuel being fired in the unit shall be determined using ASTM D 1072, D 3031, D 4084, D 3246 or a grab sample analysis by GC-FPD/TCD or double GC for H2S and mercaptans performed in the laboratory and EPA Method 19 to calculated emissions. Gaseous fuel fired units demonstrating compliance on two consecutive annual source tests shall be tested not less than once every thirty-six months, however annual source testing shall resume if any test fails to show compliance. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

15. If the unit is fired on noncertified gaseous fuel and compliance with SOx emission limits is achieved through fuel sulfur content limitations, then the sulfur content of the gaseous fuel being fired in the unit shall be determined using ASTM D 1072, D 3031, D 4084, D 3246 or grab sample analysis by GC-FPD/TCD or double GC for H2S and mercaptans performed in the laboratory. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

16. If fuel analysis is used to demonstrate compliance with the conditions of this permit, the fuel higher heating value for each fuel shall be certified by third party fuel supplier or determined by: D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District Rule 2520, 9.4.2; 4305, 6.2.1; and 4351, 6.2.1] Federally Enforceable Through Title V Permit

17. 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, 6.3.1, 4306, 6.3.1, and 4320] Federally Enforceable Through Title V Permit

18. NOx, and CO emissions shall be measured with source testing conducted by independent testing laboratory and shall be witnessed or authorized by the District [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

19. All required source testing shall conform to the compliance testing procedures described in District Rule 1081 (Amended December 16, 1993). [District Rule 1081] Federally Enforceable Through Title V Permit

20. The District must be notified 30 days prior to any compliance source test, and a source test plan must be submitted for approval 15 days prior to testing. The source test plan shall indicate which test method shall be used to demonstrate compliance. [District Rule 1081] Federally Enforceable Through Title V Permit

21. The results of each source test shall be submitted to the District within 60 days after completion of the test. [District Rule 1081] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

22. The following test methods shall be used: NOx (ppmv) - EPA Method 7E or ARB Method 100, NOx (lb/MMBtu) - EPA Method 19, CO (ppmv) - EPA Method 10 or 10B or ARB Method 100, Stack Gas Oxygen - EPA Method 3 or 3A or ARB Method 100, Stack Gas Velocity (ft/min) - EPA Method 2, Stack Gas Moisture Content (%) - EPA Method 4, SOx (lb/MMBtu) - ARB Method 100 or EPA Method 6, 6C or fuel gas sulfur content analysis and EPA Method 19, Fuel Gas Sulfur Content - EPA Method 11 or 15, ASTM D3246 or double GC for H2S and mercaptans performed in a laboratory, fuel gas hhv - ASTM D1826 or D1945 in conjunction with ASTM D3588. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

23. Sampling facilities for source testing shall be provided in accordance with the provisions of rule 1081 (Source Sampling). [District Rule 1081] Federally Enforceable Through Title V Permit

24. 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

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

26. 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

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

28. Natural gas sulfur content and higher heating value (hhv) shall be certified by a third party fuel supplier of each fuel source or natural gas shall be tested for sulfur content and higher heating value (hhv) monthly. [District Rule 2201] Federally Enforceable Through Title V Permit

29. 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

30. 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

31. 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

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

32. Permittee shall maintain records of higher heating value (hhv), in MMBtu/scf, for each gaseous fuel used in this operation. [District Rule 2201] Federally Enforceable Through Title V Permit

33. Copies of all , gas purchase contracts, supplier certifications, and test results to determine compliance with the conditions of this permit shall be maintained. The operator shall record daily amount and type(s) of fuel(s) combusted, fuel source, and all dates on which unit is fired on any noncertified fuel and record specific type of noncertified fuel used. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

34. All records shall be maintained and retaincd 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

35. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following requirements: SJVUAPCD Rules 1081 (Amended December 16, 1993), 4201 (Amended December 17, 1992), and 4301 (Amended December 17, 1992). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

36. Compliance with permit conditions in the Title V permit shall be deemed compliance with the requirements of County Rules 108 (Kings), 108.1 (Fresno, Merced, San Joaquin, Tulare, Kern, and Stanislaus), and 110 (Madera), 402 (Madera), 404 (Fresno, Kern, Tulare, Kings, Stanislaus, Merced, and San Joaquin), 405 (Madera), 408 (Fresno, Kern, Tulare, Kings, Stanislaus, Merced, and San Joaquin), 407.2 (Kern, Tulare, Kings, Stanislaus, and San Joaquin), and 408.2 (Merced). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

37. The requirements of 40 CFR 72.6(b) and 40 CFR 60.40c do not apply to this source. A permit shield is granted from this requirement. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

38. Pursuant to Rule 4320, beginning in 2010 the operator shall pay an annual emission fee to the District for NOx emissions from this unit for the previous calendar year. Payments are due by July 1 of each year. Payments shall continue annually until either the unit is permanently removed from service in the District or the operator demonstrates compliance with the applicable NOx emission limit listed in Rule 4320. [District Rule 4320] Federally Enforceable Through Title V Permit

39. Permittee shall maintain records of annual heat input (MMBtu) for this unit on a calendar year basis. Such 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 and Rule 4320] Federally Enforceable Through Title V Permit

San Joaquin Valley
Air Pollution Control District

PERMIT UNIT: C-311-84-10 **EXPIRATION DATE:** 12/31/2016

SECTION: 6C **TOWNSHIP:** 20S **RANGE:** 15E

EQUIPMENT DESCRIPTION:
58.5 MMBTU/HR STRUTHERS THERMOFLOOD (SG 6-37) MODELOH5O-ND-16XAM NATURAL GAS/LPG/TEOR GAS (COMMON TO C-311-37, SG 25-19) FIRED STEAM GENERATOR WITH A NORTH AMERICAN MODEL MAGNA FLAME GLE LOW NOX BURNER AND FLUE GAS RECIRCULATION

PERMIT UNIT REQUIREMENTS

1. This unit shall be fired exclusively with natural gas, LPG, or TEOR gas. [District NSR Rule] Federally Enforceable Through Title V Permit
2. Total fuel consumption shall not exceed 1,404 MMBtu/day nor 434,700 MMBtu/year. [District NSR Rule] Federally Enforceable Through Title V Permit
3. The permittee shall install and maintain a non-resettable, totalizing mass or volumetric flow meter in each fuel line to the boiler. [District NSR Rule] 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 NSR Rule] Federally Enforceable Through Title V Permit
5. Particulate matter emissions shall not exceed 0.1 grain/dscf, 0.1 grain/dscf calculated to 12% CO2, nor 10 lb/hr. [District Rules 4201, 3.1 and 4301, 5.1 and 5.2.3] Federally Enforceable Through Title V Permit
6. Emissions of sulfur compounds from this unit shall not exceed 200 lb/hr, calculated as SO2. Compliance with this requirement may be demonstrated by firing the unit only on PUC or FERC regulated natural gas or by testing the sulfur content of each fuel and determining the maximum hourly emissions of sulfur compounds by multiplying the sulfur content of each fuel in lb/MMBtu by the maximum heat input rating of the unit; or by source testing in combination with fuel analysis. [District Rules 2520, 9.4.2 and 4301, 5.2.1] Federally Enforceable Through Title V Permit
7. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, each fuel source shall be tested weekly for sulfur content and higher heating value. If compliance with the fuel sulfur content limit and sulfur emission limits has been demonstrated for 8 consecutive weeks for a fuel source, then the fuel testing frequency shall be semi-annually. If a semi-annual fuel content source test fails to show compliance, weekly testing shall resume. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
8. When complying with SOx emission limits by testing of stack emissions, testing shall be performed not less than once every 12 months using EPA Method 6; or ARB Method 100; or, for units using gaseous fuel scrubbed for sulfur pre-combustion, the sulfur content of the gaseous fuel being fired in the unit shall be determined using ASTM D 1072, D 3031, D 4084, D 3246 or a grab sample analysis by GC-FPD/TCD or double GC for H2S and mercaptans performed in the laboratory and EPA Method 19 to calculated emissions. Gaseous fuel fired units demonstrating compliance on two consecutive annual source tests shall be tested not less than once every thirty-six months, however annual source testing shall resume if any test fails to show compliance. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

9. If the unit is fired on noncertified gaseous fuel and compliance with SOx emission limits is achieved through fuel sulfur content limitations, then the sulfur content of the gaseous fuel being fired in the unit shall be determined using ASTM D 1072, D 3031, D 4084, D 3246 or grab sample analysis by GC-FPD/TCD or double GC for H2S and mercaptans performed in the laboratory. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

10. Nitrogen oxide (NOx) emissions shall not exceed 140 lb/hr, calculated as NO2. [District Rules 4301, 5.2.2, 5.3, and 5.5 and 2520, 9.4.2] Federally Enforceable Through Title V Permit

11. Except during start-up and shutdown, emissions from this steam generator shall not exceed any of the following limits: 15 ppmvd NOx @ 3% O2 or 0.018 lb-NOx/MMBtu, 0.043 lb-SOx/MMBtu, 0.00675 lb-PM10/MMBtu, 50 ppmvd CO @ 3% O2 or 0.037 lb-CO/MMBtu, or 0.00855 lb-VOC/MMBtu. [District NSR Rule and District Rule 4306, 5.1] Federally Enforceable Through Title V Permit

12. During start-up and shutdown, emissions from this steam generator shall not exceed any of the following limits: 0.1 lb-NOx/MMBtu, 0.043 lb-SOx/MMBtu, 0.00675 lb-PM10/MMBtu, 0.084 lb-CO/MMBtu, or 0.00855 lb-VOC/MMBtu. [District NSR Rule and District Rule 4306, 5.1] Federally Enforceable Through Title V Permit

13. Maximum emissions from this steam generator, including start-up and shutdown operation, shall not exceed any of the following limits: 50.5 lb-NOx in any one day, 7,825 lb-NOx in any calendar year, 66.4 lb-CO in any one day, or 16,084 lb-CO in any calendar year. [District NSR Rule] Federally Enforceable Through Title V Permit

14. Start-up is defined as that 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 that 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, 3.22, 3.25] Federally Enforceable Through Title V Permit

15. The duration of each start-up or each shutdown shall not exceed two hours per occurrence. The emission control system shall be in operation and emissions shall be minimized insofar as technologically feasible during start-up or shutdown. The operator shall maintain daily records of the number and duration of start-up and shutdown periods. [District Rule 4306, 5.3] Federally Enforceable Through Title V Permit

16. 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, 6.3] Federally Enforceable Through Title V Permit

17. All required source testing shall conform to the compliance testing procedures described in District Rule 1081 (Amended December 16, 1993). [District Rule 1081] Federally Enforceable Through Title V Permit

18. NOx, and CO emissions shall be measured with source testing conducted by independent testing laboratory and shall be witnessed or authorized by the District [District Rule 2520, 9.4.2] 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, 5.5.1 and 4306, 5.5.1] Federally Enforceable Through Title V Permit

20. 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, 5.5.2 and 4306, 5.5.2] 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, 5.5.5 and 4306, 5.5.5] 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

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

23. The results of each source test shall be submitted to the District within 60 days after completion of the test. [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, 6.2] Federally Enforceable Through Title V Permit

25. CO emissions for source test purposes shall be determined using EPA Method 10, 10B, or ARB Method 100. [District Rule 2520, 9.3.2 and 4305] 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, 6.2] Federally Enforceable Through Title V Permit

27. If fuel analysis is used to demonstrate compliance with the conditions of this permit, the fuel higher heating value for each fuel shall be certified by third party fuel supplier or determined by: D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District Rule 2520, 9.4.2; 4305, 6.2.1; and 4351, 6.2.1] Federally Enforceable Through Title V Permit

28. 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, 5.4 and 4306, 5.4] Federally Enforceable Through Title V Permit

29. 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, 5.4 and 4306, 5.4] 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, 5.4 and 4306, 5.4] Federally Enforceable Through Title V Permit

31. The permittee shall maintain records of: (1) the date and time of NOx, CO, and O2 measurements, (2) the O2 concentration in percent and the measured NOx and CO concentrations corrected to 3% O2, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 5.4 and 4306, 5.4] Federally Enforceable Through Title V Permit

32. Natural gas or LPG sulfur content and higher heating value (hhv) shall be certified by a third party fuel supplier of each fuel source; or natural gas or LPG shall be tested for sulfur content and higher heating value (hhv) monthly. Casing gas shall be tested for sulfur content and higher heating value (hhv) not less than monthly. [District NSR Rule] Federally Enforceable Through Title V Permit

33. Permittee shall record daily natural gas, casing gas, and propane consumption. Records shall be provided to the District upon request. [District NSR Rule] Federally Enforceable Through Title V Permit

34. Permittee shall maintain records of higher heating value (hhv), in MMBtu/scf, for each gaseous fuel used in this operation. [District NSR Rule] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

35. Copies of all gas purchase contracts, supplier certifications, and test results to determine compliance with the conditions of this permit shall be maintained. The operator shall record daily amount and type(s) of fuel(s) combusted, fuel source, and all dates on which unit is fired on any noncertified fuel and record specific type of noncertified fuel used. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

36. 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, 6.1; and 4306, 6.1] Federally Enforceable Through Title V Permit

37. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following requirements of District Rules 1081 (Amended December 16, 1993), 4201 (Amended December 17, 1992), and 4301 (Amended December 17, 1992). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

38. The requirements of 40 CFR 72.6(b) and 40 CFR 60.40c do not apply to this source. A permit shield is granted from this requirement. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

39. Pursuant to Rule 4320, beginning in 2010 the operator shall pay an annual emission fee to the District for NOx emissions from this unit for the previous calendar year. Payments are due by July 1 of each year. Payments shall continue annually until either the unit is permanently removed from service in the District or the operator demonstrates compliance with the applicable NOx emission limit listed in Rule 4320. [District Rule 4320] Federally Enforceable Through Title V Permit

40. On and after July 1, 2010, the permittee shall submit an analysis showing the fuel's sulfur content at least once every year. Valid purchase contracts, supplier certifications, tariff sheets, or transportation contacts may be used to satisfy this requirement, provided they establish the fuel parameters mentioned above. [District Rule 4320] Federally Enforceable Through Title V Permit

41. Permittee shall maintain records of annual heat input (MMBtu) for this unit on a calendar year basis. Such 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 and Rule 4320] Federally Enforceable Through Title V Permit

ATTACHMENT II
Source Test Data

AEROS ENVIRONMENTAL, INC.

Summary Of Results

Chevron U.S.A., Inc.
Coalinga
Steam Generator 25-21

Project 104-6857
March 9, 2010
ATC No. C-311-42-14

Pollutant	ppm	ppm @ 3% O_2	lb/hr	lb/MMBtu	Permit Limits
NOx	10.8	10.3	0.62	0.0124	
	10.7	10.2	0.61	0.0123	
	10.6	10.1	0.60	0.0122	
Mean	**10.7**	**10.2**	**0.61**	**0.0123**	**15 ppm @ 3% O_2**
CO	0.0	0.0	0.00	0.0000	
	0.0	0.0	0.00	0.0000	
	0.0	0.0	0.00	0.0000	
Mean	**0.0**	**0.0**	**0.00**	**0.0000**	**50 ppm @ 3% O_2**
Fuel Sulfur (SOx as SO_2)	As H_2S in Fuel Gas			As SO_2 in Stack Exhaust	
	<1			**<0.0001**	**0.052 lb/MMBtu**

Comments:

AEROS ENVIRONMENTAL, INC.

Summary Of Results

Chevron U.S.A., Inc.
Coalinga
Steam Generator 25-20

Project 104-6857
March 9, 2010
Permit No. C-311-41-14

Pollutant	ppm	ppm @ 3% O_2	lb/hr	lb/MMBtu	Permit Limits
NOx	11.2	11.1	0.56	0.0135	
	11.4	11.3	0.57	0.0138	
	11.2	11.1	0.57	0.0136	
Mean	**11.3**	**11.2**	**0.57**	**0.0136**	**15 ppm @ 3% O_2**
CO	0.0	0.0	0.00	0.0000	
	0.0	0.0	0.00	0.0000	
	0.0	0.0	0.00	0.0000	
Mean	**0.0**	**0.0**	**0.00**	**0.0000**	**50 ppm @ 3% O_2**

Comments:

AEROS ENVIRONMENTAL, INC.

Summary Of Results

Chevron U.S.A., Inc.
Coalinga
Steam Generator 13-14

Project 104-6879
March 30, 2010
Permit No. C-311-30-15

Pollutant	ppm	ppm @ 3% O_2	lb/hr	lb/MMBtu	Permit Limits
NOx	11.3	10.8	0.56	0.0132	
	11.1	10.6	0.54	0.0130	
	11.5	11.1	0.57	0.0135	
Mean	**11.3**	**10.8**	**0.56**	**0.0132**	**15 ppm @ 3% O_2**
CO	0.0	0.0	0.00	0.0000	
	0.7	0.7	0.02	0.0005	
	0.0	0.0	0.00	0.0000	
Mean	**0.2**	**0.2**	**0.01**	**0.0002**	**50 ppm @ 3% O_2**
Fuel Sulfur (SOx as SO_2)				As SO_2 in Stack Exhaust 0.0634	**0.14 lb/MMBtu**

Comments:

AEROS ENVIRONMENTAL, INC.

Summary Of Results

Chevron U.S.A., Inc.
Coalinga
Steam Generator 13-11

Project 104-6879
March 30, 2010
Permit No. C-311-27-13

Pollutant	ppm	ppm @ 3% O_2	lb/hr	lb/MMBtu	Permit Limits
	8.2	8.4	0.46	0.0101	
NOx	8.4	8.6	0.47	0.0103	
	8.5	8.7	0.48	0.0105	
Mean	**8.4**	**8.6**	**0.47**	**0.0103**	**15 ppm @ 3% O_2**
	0.0	0.0	0.00	0.0000	
CO	0.0	0.0	0.00	0.0000	
	0.0	0.0	0.00	0.0000	
Mean	**0.0**	**0.0**	**0.00**	**0.0000**	**50 ppm @ 3% O_2**
Fuel Sulfur (SOx as SO_2)	As H_2S in Fuel Gas <1			As SO_2 in Stack Exhaust <0.0001	0.001 lb/MMBtu

Comments:

AEROS ENVIRONMENTAL, INC.

Summary Of Results

Chevron U.S.A., Inc.
Coalinga
Steam Generator 6-33

Project 104-6759
February 10, 2010
ATC No. C-311-53-15

Pollutant	ppm	ppm @ 3% O_2	lb/hr	lb/MMBtu	Permit Limits
	10.2	10.1	0.65	0.0122	
NOx	10.0	9.9	0.65	0.0119	
	9.6	9.6	0.59	0.0116	
Mean	**9.9**	**9.9**	**0.63**	**0.0119**	**15 ppm @ 3% O_2**
	0.0	0.0	0.00	0.0000	
CO	0.0	0.0	0.00	0.0000	
	0.0	0.0	0.00	0.0000	
Mean	**0.0**	**0.0**	**0.00**	**0.0000**	**50 ppm @ 3% O_2**
Fuel Sulfur (SOx as SO_2)	As H_2S in Fuel Gas **<1**			As SO_2 in Stack Exhaust **<0.0001**	**0.140 lb/MMBtu**

Comments:

AEROS ENVIRONMENTAL, INC.

Summary Of Results

Chevron U.S.A., Inc.
Coalinga
Steam Generator 6-32

Project 104-6759
February 10, 2010
ATC No. C-311-52-14

Pollutant	ppm	ppm @ 3% O_2	lb/hr	lb/MMBtu	Permit Limits
	8.6	8.6	0.46	0.0104	
NOx	8.3	8.3	0.44	0.0100	
	8.2	8.3	0.44	0.0099	
Mean	**8.4**	**8.4**	**0.45**	**0.0101**	**15 ppm @ 3% O_2**
	0.0	0.0	0.00	0.0000	
CO	0.0	0.0	0.00	0.0000	
	0.0	0.0	0.00	0.0000	
Mean	**0.0**	**0.0**	**0.00**	**0.0000**	**50 ppm @ 3% O_2**
Fuel Sulfur (SOx as SO_2)	As H_2S in Fuel Gas <1			As SO_2 in Stack Exhaust **<0.0001**	**0.140 lb/MMBtu**

Comments:

ATTACHMENT III
Emissions Profiles

Application Emissions

Permit #: C-311-36-20 Last Updated
Facility: CHEVRON USA INC 04/24/2012 EDGEHILR

Equipment Pre-Baselined: NO

	NOX	SOX	PM10	CO	VOC
Potential to Emit (lb/Yr):	7395.0	22620.0	6090.0	16095.0	3698.0
Daily Emis. Limit (lb/Day)	25.5	78.0	21.0	55.5	12.8
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	0.0	0.0	0.0	0.0	0.0
Q2:	0.0	0.0	0.0	0.0	0.0
Q3:	0.0	0.0	0.0	0.0	0.0
Q4:	0.0	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:					

Application Emissions

Permit #: C-311-37-25	**Last Updated**	
Facility: CHEVRON USA INC	04/24/2012	EDGEHILR

Equipment Pre-Baselined: NO

	NOX	SOX	PM10	CO	VOC
Potential to Emit (lb/Yr):	7783.0	23806.0	6409.0	16939.0	3662.0
Daily Emis. Limit (lb/Day)	25.5	78.0	21.0	55.5	12.0
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	0.0	0.0	0.0	0.0	0.0
Q2:	0.0	0.0	0.0	0.0	0.0
Q3:	0.0	0.0	0.0	0.0	0.0
Q4:	0.0	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:					

Application Emissions

Permit #: C-311-38-24	Last Updated	
Facility: CHEVRON USA INC	04/24/2012	EDGEHILR

Equipment Pre-Baselined: NO

	NOX	SOX	PM10	CO	VOC
Potential to Emit (lb/Yr):	7783.0	23806.0	20601.0	16939.0	3662.0
Daily Emis. Limit (lb/Day)	50.5	78.0	67.5	55.5	12.0
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	0.0	0.0	0.0	0.0	0.0
Q2:	0.0	0.0	0.0	0.0	0.0
Q3:	0.0	0.0	0.0	0.0	0.0
Q4:	0.0	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:					

Application Emissions

Permit #: C-311-39-22 **Last Updated**
Facility: CHEVRON USA INC 04/24/2012 EDGEHILR

Equipment Pre-Baselined: NO

	NOX	SOX	PM10	CO	VOC
Potential to Emit (lb/Yr):	7783.0	23806.0	20601.0	16939.0	3662.0
Daily Emis. Limit (lb/Day)	50.5	78.0	67.5	55.5	12.0
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	0.0	0.0	0.0	0.0	0.0
Q2:	0.0	0.0	0.0	0.0	0.0
Q3:	0.0	0.0	0.0	0.0	0.0
Q4:	0.0	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:					

Application Emissions

Permit #: C-311-40-21 **Last Updated**
Facility: CHEVRON USA INC 04/24/2012 EDGEHILR

Equipment Pre-Baselined: NO

	NOX	SOX	PM10	CO	VOC
Potential to Emit (lb/Yr):	7390.0	22604.0	19562.0	15215.0	3478.0
Daily Emis. Limit (lb/Day)	25.5	78.0	67.5	52.5	12.0
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	0.0	0.0	0.0	0.0	0.0
Q2:	0.0	0.0	0.0	0.0	0.0
Q3:	0.0	0.0	0.0	0.0	0.0
Q4:	0.0	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:					

Application Emissions

Permit #: C-311-41-18	**Last Updated**	
Facility: CHEVRON USA INC	04/24/2012	EDGEHILR

Equipment Pre-Baselined: NO

	NOX	SOX	PM10	CO	VOC
Potential to Emit (lb/Yr):	7395.0	22620.0	19575.0	16095.0	3480.0
Daily Emis. Limit (lb/Day)	25.5	78.0	66.0	55.5	12.8
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	0.0	0.0	0.0	0.0	0.0
Q2:	0.0	0.0	0.0	0.0	0.0
Q3:	0.0	0.0	0.0	0.0	0.0
Q4:	0.0	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:					

Application Emissions

Permit #: C-311-43-18 **Last Updated**
Facility: CHEVRON USA INC 04/24/2012 EDGEHILR

Equipment Pre-Baselined: NO

	NOX	SOX	PM10	CO	VOC
Potential to Emit (lb/Yr):	7390.0	6216.0	19562.0	16084.0	1304.0
Daily Emis. Limit (lb/Day)	50.5	21.5	67.5	55.5	4.5
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	0.0	0.0	0.0	0.0	0.0
Q2:	0.0	0.0	0.0	0.0	0.0
Q3:	0.0	0.0	0.0	0.0	0.0
Q4:	0.0	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:					

Application Emissions

Permit #: C-311-42-20 **Last Updated**
Facility: CHEVRON USA INC 04/24/2012 EDGEHILR

Equipment Pre-Baselined: NO

	NOX	SOX	PM10	CO	VOC
Potential to Emit (lb/Yr):	7390.0	6216.0	19562.0	16084.0	1304.0
Daily Emis. Limit (lb/Day)	50.5	21.5	67.5	55.5	4.5
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	0.0	0.0	0.0	0.0	0.0
Q2:	0.0	0.0	0.0	0.0	0.0
Q3:	0.0	0.0	0.0	0.0	0.0
Q4:	0.0	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:					

Application Emissions

Permit #: C-311-45-18 **Last Updated**
Facility: CHEVRON USA INC 04/24/2012 EDGEHILR

Equipment Pre-Baselined: NO

	NOX	SOX	PM10	CO	VOC
Potential to Emit (lb/Yr):	7390.0	6216.0	19562.0	16084.0	1394.0
Daily Emis. Limit (lb/Day)	50.5	21.5	67.5	55.5	4.5
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	0.0	0.0	0.0	0.0	0.0
Q2:	0.0	0.0	0.0	0.0	0.0
Q3:	0.0	0.0	0.0	0.0	0.0
Q4:	0.0	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:					

Application Emissions

Permit #: C-311-52-19 **Last Updated**
Facility: CHEVRON USA INC 04/24/2012 EDGEHILR

Equipment Pre-Baselined: NO

	NOX	SOX	PM10	CO	VOC
Potential to Emit (lb/Yr):	7783.0	6547.0	2289.0	16939.0	3662.0
Daily Emis. Limit (lb/Day)	50.5	21.5	7.5	55.5	12.0
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	0.0	0.0	0.0	0.0	0.0
Q2:	0.0	0.0	0.0	0.0	0.0
Q3:	0.0	0.0	0.0	0.0	0.0
Q4:	0.0	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:					

Application Emissions

Permit #: C-311-53-20 **Last Updated**
Facility: CHEVRON USA INC 04/24/2012 EDGEHILR

Equipment Pre-Baselined: NO

	NOX	SOX	PM10	CO	VOC
Potential to Emit (lb/Yr):	7783.0	6547.0	2289.0	16939.0	3662.0
Daily Emis. Limit (lb/Day)	50.5	21.5	7.5	55.5	12.0
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	0.0	0.0	0.0	0.0	0.0
Q2:	0.0	0.0	0.0	0.0	0.0
Q3:	0.0	0.0	0.0	0.0	0.0
Q4:	0.0	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:					

Application Emissions

Permit #: C-311-84-18 **Last Updated**
Facility: CHEVRON USA INC 04/24/2012 EDGEHILR

Equipment Pre-Baselined: NO

	NOX	SOX	PM10	CO	VOC
Potential to Emit (lb/Yr):	7390.0	6216.0	2934.0	16084.0	3717.0
Daily Emis. Limit (lb/Day)	50.5	21.5	10.1	66.5	12.8
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	0.0	0.0	0.0	0.0	0.0
Q2:	0.0	0.0	0.0	0.0	0.0
Q3:	0.0	0.0	0.0	0.0	0.0
Q4:	0.0	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:					

ATTACHMENT IV
Representative Gas Analysis

ZALCO LABORATORIES, INC.
Analytical & Consulting Services

4309 Armour Avenue
Bakersfield, California 93308

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

Chevron Exploration & Production - Bksd	Project: SJ Sulfa Treat	Work Order No.: 1107022
1546 China Grade Loop	Project #:	Reported: 07/07/2011
Bakersfield, CA 93308	Attention: Mark Schnaidt	Received: 07/05/2011 10:40

Lab Sample ID: 1107022-03	Collected By: Jeremiah Johnson
Client Sample ID: SJ Sulfa Treat Outlet Gas	Date Collected: 7/5/2011 9:15:00AM

Analyte	Results	PQL	Units	Flag	Method	Date Prepared	Date Analyzed	Init.
Total Sulfur/Hydrogen Sulfide by ASTM D3246								
Hydrogen sulfide	24.9	1.00	ppm		ASTM D 3246/M	7/5/11	7/5/11	JAH
Sulfur	1.54	0.06	gr/100 scf		ASTM D3246	7/5/11	7/5/11	JAH

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

ZALCO LABORATORIES, INC.
Analytical & Consulting Services

4309 Armour Avenue
Bakersfield, California 93308

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

Chevron Exploration & Production - Bksd	Project: SJ Sulfa Treat	Work Order No.: 1107022
1546 China Grade Loop	Project #:	Reported: 07/07/2011
Bakersfield, CA 93308	Attention: Mark Schnaldt	Received: 07/05/2011 10:40

Lab Sample ID: 1107022-02	Collected By: Jeremiah Johnson
Client Sample ID: SJ Sulfa Treat- Middle Gas	Date Collected: 7/5/2011 9:13:00AM

Analyte	Results	PQL	Units	Flag	Method	Date Prepared	Date Analyzed	Init.
Total Sulfur/Hydrogen Sulfide by ASTM D1945/M								
Hydrogen sulfide	330	100	ppm		ASTM D 1945/M	7/6/11	7/6/11	LTB
Sulfur	20	6.0	gr/100 scf		ASTM D1945/M	7/6/11	7/6/11	LTB

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

ZALCO LABORATORIES, INC.
Analytical & Consulting Services

4309 Armour Avenue
Bakersfield, California 93308

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

Chevron Exploration & Production - Bksd	Project: SJ Sulfa Treat	Work Order No.: 1107022
1546 China Grade Loop	Project #:	Reported: 07/07/2011
Bakersfield, CA 93308	Attention: Mark Schnaidt	Received: 07/05/2011 10:40

Lab Sample ID: 1107022-01	Collected By: Jeremiah Johnson
Client Sample ID: SJ Sulfa Treat- Inlet Gas	Date Collected: 7/5/2011 9:11:00AM

Analyte	Results	PQL	Units	Flag	Method	Date Prepared	Date Analyzed	Init.
Total Sulfur/Hydrogen Sulfide by ASTM D1945/M								
Hydrogen sulfide	530	100	ppm		ASTM D 1945/M	7/6/11	7/6/11	LTB
Sulfur	33	6.0	gr/100 scf		ASTM D1945/M	7/6/11	7/6/11	LTB

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

ZALCO LABORATORIES, INC.
Analytical & Consulting Services

4309 Armour Avenue
Bakersfield, California 93308

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

July 7, 2011

Mark Schnaidt
Chevron Exploration & Production - Bksd
1546 China Grade Loop
Bakersfield, CA 93308

TEL: (661) 392-2484
FAX: (661) 391-4393

Project ID:
RE: 1107022

Dear Mark Schnaidt:

Zalco Laboratories, Inc. received 3 samples on 7/5/2011 for the analyses presented in the following report.

We appreciate your business and look forward to serving you in the future. Please feel free to call our office if you have any questions regarding these test results.

Sincerely,

Kerrie Vaughan
Project Manager
CC:Sulfa Treat Gases Group

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

S-1131-598

Sulfur Removal Testing

ZALCO LABORATORIES, INC.
4309 Armour Avenue, Bakersfield, CA 93308 (661) 395-0539 FAX (661) 395-3069 www.zalcolabs.com
1103 East Clark Avenue, Suite F-5, Santa Maria, CA 93455 (805) 938-5341 FAX (805) 938-5892

Chevron Texaco Exploration & Production
1546 China Grade Loop
Bakersfield, CA 93308

Laboratory No: 1107013-08
Date Received: 07/01/11
Date Analyzed: 07/01/11
Purchase Order: 0015005886

Attention: Chevron Texaco Exploration & Production
Note:
Sample Description: MOJAVE NATURAL FLOWMETER TF503
Sampled By: R. Ogletree

TOTAL SULFUR ANALYSIS, ASTM D3246; GPA-B16/D4810

Constituent:	Result	Units
Hydrogen Sulfide	< 1.0	ppm
Total Sulfur	< 0.06	grs S/100 SCF

Chromatographic Analysis, ASTM D-1945-03; ASTM D-3588-98; GPA 2145-94; GPA 2261-00

Constituent:	Mole %	Weight %	GPM	GPM Fractions	CHONS%
					Carbon, C
Oxygen	0.436	0.82			71.28
Nitrogen	1.959	3.22			
					Hydrogen, H
Carbon Dioxide	0.724	1.87			23.33
Carbon Monoxide	0.000	0.00			
Hydrogen Sulfide	0.000	0.00			Oxygen, O
Methane	94.064	88.46			2.18
Ethane	2.266	4.00			
Propane	0.375	0.97	0.10	(C3...C3) = 0.10	Nitrogen, N
IsoButane	0.117	0.40	0.04		3.22
n-Butane	0.001	0.00	0.00	(C3....C4) = 0.14	
IsoPentane	0.017	0.07	0.01		Sulfur, S
n-Pentane	0.012	0.05	0.00	(C3....C5) = 0.15	0.00
Hexanes	0.029	0.15	0.01	(C3....C6+) = 0.16	
Totals:	100.00	100.00	0.16	0.58	100.00

Flammable Gases:		96.881	
Gas Properties calculated @ STP:	degrees F.	60	
Measurement Base Pressure @ STP:	psia	14.696	H/C Ratio: 0.33

Gas State	Dry Btu / Cu. Ft	Btu / lb	Saturated Btu / Cu. Ft
Gross, Ideal Gas	1005.95	22378.43	988.44
Net, Ideal Gas	906.66	20169.35	890.88
Gross, Real Gas	**1008.06**		990.52
Net, Real Gas	908.56		892.75

Relative Gas Density; [Air=1] Ideal:	0.5890
Specific Gravity, [Air=1] Real gas:	0.5899
Real Gas Density, Lb/Cu.Ft.:	0.0450
Specific Volume, Cu.Ft./Lb:	22.1992
Relative Liquid Density @ 60F/60F:	0.3163
Compressibility, 'z':	0.9979
Fuel kg per kg-mole Molecular wt avg	17.058

GPM: Gallons per 1000 cubic feet

ZALCO LABORATORIES, INC.
4309 Armour Avenue, Bakersfield, CA 93308 (661) 395-0539 FAX (661) 395-3069 www.zalcolabs.com
1103 East Clark Avenue, Suite F-5, Santa Maria, CA 93455 (805) 938-5341 FAX (805) 938-5892

Chevron Texaco Exploration & Production
1546 China Grade Loop
Bakersfield, CA 93308

Laboratory No: 1106026-08
Date Received: 06/02/11
Date Analyzed: 06/02/11
Purchase Order: 0015005886

Attention: Chevron Texaco Exploration & Production
Note:
Sample Description: MOJAVE NATURAL FLOWMETER TF503
Sampled By: R. Ogletree

TOTAL SULFUR ANALYSIS, ASTM D3246, GPA-B16/D4810

Constituent:	Result	Units
Hydrogen Sulfide, Total H2S	< 1.0	ppm
Total Sulfur	< 0.06	grs S/100 SCF

Chromatographic Analysis, ASTM D1945-03, ASTM D3588-98, GPA 2145-94, GPA 2261-00

Constituent:	Mole %	Weight %	GPM	GPM Fractions		CHONS wt%
						Carbon, C
Oxygen	0.382	0.72				71.667%
Nitrogen	1.689	2.80				Hydrogen, H
						23.531%
Carbon Dioxide	0.679	1.76				Oxygen, O
Carbon Monoxide	0.000	0.00				2.006%
Hydrogen Sulfide	0.000	0.00				Nitrogen, N
Methane	94.812	89.88				2.795%
Ethane	2.035	3.62	0.52			Sulfur, S
Propane	0.279	0.73	0.08	(C3....C3) =	0.077	0.000%
IsoButane	0.035	0.12	0.01			
n-Butane	0.038	0.13	0.01	(C3....C4) =	0.101	
IsoPentane	0.010	0.04	0.00			
n-Pentane	0.007	0.03	0.00	(C3....C5) =	0.106	
Hexanes +	0.032	0.16	0.01	(C3....C6+) =	0.120	
Totals:	100.00	100.00	0.64			
Total						
Flammable Gases:			97.251			
Gas Properties calculated @ STP: degrees F.			60			
Measurement Base Pressure @ STP: psia			14.696			

Gas State	Dry Btu / Cu. Ft	Dry Btu / lb	Saturated Btu / Cu. Ft
Gross, Ideal Gas	1005.27	22542.75	987.78
Net, Ideal Gas	905.91	20314.22	890.15
Gross, Real Gas	1007.37		989.84
Net, Real Gas	907.79		892.00

Relative Gas Density; [Air=1] Ideal:	0.5843
Specific Gravity, [Air=1] Real gas:	0.5852
Real Gas Density, Lb/Cu.Ft.:	0.04469
Specific Volume, Cu.Ft./Lb:	22.3776
Relative Liquid Density @ 60F/60F:	0.3142
Compressibility, 'z':	0.9979
Fuel kg per kg-mole Molecular wt avg	16.923

ZALCO LABORATORIES, INC.
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1103 East Clark Avenue, Suite F-5, Santa Maria, CA 93455 (805) 938-5341 FAX (805) 938-5892

Chevron Texaco Exploration & Production
1546 China Grade Loop
Bakersfield, CA 93308

Laboratory No: 1105013-08
Date Received: 05/02/11
Date Analyzed: 05/02/11
Purchase Order: 0015005886

Attention: Chevron Texaco Exploration & Production
Note:
Sample Description: MOJAVE NATURAL FLOWMETER TF503
Sampled By: J. Johnson

TOTAL SULFUR ANALYSIS, ASTM D3246, GPA-B16/D4810

Constituent:	Result	Units
Hydrogen Sulfide, Total H2S	< 1.0	ppm
Total Sulfur	< 0.06	grs.S/100 SCF

Chromatographic Analysis, ASTM D-1945-03, ASTM D-3588-98, GPA 2145-94, GPA 2261-00

Constituent:	Mole %	Weight %	GPM	GPM Fractions		CHONS wt%
						Carbon, C
Oxygen	0.654	1.22				70.360%
Nitrogen	2.506	4.10				Hydrogen, H
						23.045%
Carbon Dioxide	0.662	1.75				Oxygen, O
Carbon Monoxide	0.000	0.00				2.496%
Hydrogen Sulfide	0.000	0.00				Nitrogen, N
Methane	93.595	87.66				4.099%
Ethane	2.036	3.57	0.52			Sulfur, S
Propane	0.316	0.81	0.09	(C3,...C3) =	0.087	0.000%
IsoButane	0.048	0.16	0.02			
n-Butane	0.050	0.17	0.02	(C3....C4) =	0.119	
IsoPentane	0.014	0.06	0.01			
n-Pentane	0.010	0.04	0.00	(C3....C5) =	0.127	
Hexanes +	0.067	0.44	0.04	(C3....C6+) =	0.165	
Totals:	100.00	100.00	0.68			
Total						
Flammable Gases:			96.157			
Gas Properties calculated @ STP: degrees F.			60			
Measurement Base Pressure @ STP: psia			14.696			

	Dry		Saturated
Gas State	Btu / Cu. Ft	Btu / lb	Btu / Cu. Ft
Gross, Ideal Gas	997.62	22102.53	980.26
Net, Ideal Gas	899.13	19920.09	883.48
Gross, Real Gas	999.69		982.30
Net, Real Gas	900.99		885.32

Relative Gas Density; [Air=1] Ideal:	0.5914
Specific Gravity, [Air=1] Real gas:	0.5923
Real Gas Density, Lb/Cu.Ft.:	0.04523
Specific Volume, Cu.Ft./Lb:	22.1091
Relative Liquid Density @ 60F/60F:	0.3189
Compressibility, 'z':	0.9979
Fuel kg per kg-mole Molecular wt avg	17.128

Representative Gas Anaylsis

ATTACHMENT V
SB 288 Major Modification Calculation

APPENDIX D
SB 288 Major Modification

C-1111932 **SB288 Major Modification Actual to Potential NOx**

ID	Permit	2010 MMBtu	2011 MMBtu	(2010+2011)/2 MMBtu/year	EF NOx	Actual lb/year	Permitted MMbtu/year	EF Post Project	Permitted lb/year	Increase lb/year
25-15	C-0311-0036	178005.28	253894.37	215949.82	0.017	3671.15	435000.00	0.017	7395	3724
25-16	C-0311-0037	278270.73	237675.94	257973.34	0.017	4385.55	457800.00	0.017	7782.6	3397
25-17	C-0311-0038	323984.42	345114.41	334549.42	0.017	5687.34	457800.00	0.017	7782.6	2095
25-18	C-0311-0039	335771.29	353593.72	344682.50	0.017	5859.60	457800.00	0.017	7782.6	1923
25-19	C-0311-0040	316243.13	311973.93	314108.53	0.017	5339.84	434700.00	0.017	7389.9	2050
25-20	C-0311-0041	280052.89	246894.49	263473.69	0.017	4479.05	435000.00	0.017	7395	2916
25-21	C-0311-0042	286530.65	338272.20	312401.43	0.017	5310.82	434700.00	0.017	7389.9	2079
25-22	C-0311-0043	0.00	0.00	0.00	0.017	0.00	434700.00	0.017	7389.9	7390
25-24	C-0311-0045	350155.23	288254.06	319204.64	0.017	5426.48	434700.00	0.017	7389.9	1963
6-32	C-0311-0052	22346.68	10091.08	16218.88	0.017	275.72	457800.00	0.017	7782.6	7507
6-33	C-0311-0053	38286.73	0.00	19143.37	0.017	325.44	457800.00	0.017	7782.6	7457
6-37*	C-0311-0084	89787.74	30362.35	60075.04	0.017	1021.28	434700.00	0.017	7389.9	6369
						41782.27			90652.5	48870

.017 lb/MMBtu = 14 ppmv

SB 288 Major Modification @ 50,000 l NO

C-1111932 **SB 288 Major Modification Actual to Potential SOx**

ID	Permit	2010 MMBtu	2011 MMBtu/year	2010+2011/2 MMBtu/year	EF SOx	Lb/year Actual	Permitted MMbtu/year	EF Post Project	Lb/year Permitted	Actual % Annual Used
25-15	C-0311-0036	178005.28	253894.37	215949.82	0.052	11229.4	435000.00	0.052	22620.0	11390.6
25-16	C-0311-0037	278270.73	237675.94	257973.34	0.052	13414.6	457800.00	0.052	23805.6	10391.0
25-17	C-0311-0038	323984.42	345114.41	334549.42	0.052	17396.6	457800.00	0.052	23805.6	6409.0
25-18	C-0311-0039	335771.29	353593.72	344682.50	0.052	17923.5	457800.00	0.052	23805.6	5882.1
25-19	C-0311-0040	316243.13	311973.93	314108.53	0.052	16333.6	434700.00	0.052	22604.4	6270.8
25-20	C-0311-0041	280052.89	246894.49	263473.69	0.052	13700.6	435000.00	0.052	22620.0	8919.4
25-21	C-0311-0042	286530.65	338272.20	312401.43	0.0143	4467.3	434700.00	0.0143	6216.2	1748.9
25-22	C-0311-0043	0.00	0.00	0.00	0.0143	0.0	434700.00	0.0143	6216.2	6216.2
25-24	C-0311-0045	350155.23	288254.06	319204.64	0.0143	4564.6	434700.00	0.0143	6216.2	1651.6
6-32	C-0311-0052	22346.68	10091.08	16218.88	0.0143	231.9	457800.00	0.0143	6546.5	6314.6
6-33	C-0311-0053	38286.73	0.00	19143.37	0.0143	273.8	457800.00	0.0143	6546.5	6272.8
6-37*	C-0311-0084	89787.74	30362.35	60075.04	0.0143	859.1	434700.00	0.0143	6216.2	5357.1
						100395.1			177219.1	76824

SB 288 Major Modification @ 80,000 lb/yr? NO

C-1111932 **SB288 Actual to Potential PM10**

ID	Permit	2010 MMBtu	2011 MMBtu/year	2010+2011/2 MMBtu/year	PM10	Lb/year Actual	Permitted MMbtu/year	EF Post Project	Lb/year Permitted	Increase lb/year
25-15	C-0311-0036	178005.28	253894.37	215949.82	0.014	3023.3	435000.00	0.014	6090.0	3066.7
25-16	C-0311-0037	278270.73	237675.94	257973.34	0.014	3611.6	457800.00	0.014	6409.2	2797.6
25-17	C-0311-0038	323984.42	345114.41	334549.42	0.045	15054.7	457800.00	0.045	20601.0	5546.3
25-18	C-0311-0039	335771.29	353593.72	344682.50	0.045	15510.7	457800.00	0.045	20601.0	5090.3
25-19	C-0311-0040	316243.13	311973.93	314108.53	0.045	14134.9	434700.00	0.045	19561.5	5426.6
25-20	C-0311-0041	280052.89	246894.49	263473.69	0.044	11592.8	435000.00	0.044	19140.0	7547.2
25-21	C-0311-0042	286530.65	338272.20	312401.43	0.045	14058.1	434700.00	0.045	19561.5	5503.4
25-22	C-0311-0043	0.00	0.00	0.00	0.045	0.0	434700.00	0.045	19561.5	19561.5
25-24	C-0311-0045	350155.23	288254.06	319204.64	0.045	14364.2	434700.00	0.045	19561.5	5197.3
6-32	C-0311-0052	22346.68	10091.08	16218.88	0.005	81.1	457800.00	0.005	2289.0	2207.9
6-33	C-0311-0053	38286.73	0.00	19143.37	0.005	95.7	457800.00	0.005	2289.0	2193.3
6-37*	C-0311-0084	89787.74	30362.35	60075.04	0.00675	405.5	434700.00	0.00675	2934.2	2528.7
						91932.7			158599.425	66667

SB 288 Major Modification @ 30,000 lb/yr? YES

C-1111932 **SB 288 Major Modification Actual to Potential VOC**

Location	Permit	2010 MMBtu	2011 MMBtu/year	2010+2011/2 MMBtu/year	VOC	Lb/year Actual	Permitted MMbtu/year	EF Post Project	Lb/year Permitted	Actual % Annual Used
25-15	C-0311-0036	178005.28	253894.37	215949.82	0.0085	1835.6	435000.00	0.0085	3697.5	1861.9
25-16	C-0311-0037	278270.73	237675.94	257973.34	0.008	2063.8	457800.00	0.008	3662.4	1598.6
25-17	C-0311-0038	323984.42	345114.41	334549.42	0.008	2676.4	457800.00	0.008	3662.4	986.0
25-18	C-0311-0039	335771.29	353593.72	344682.50	0.008	2757.5	457800.00	0.008	3662.4	904.9
25-19	C-0311-0040	316243.13	311973.93	314108.53	0.008	2512.9	434700.00	0.008	3477.6	964.7
25-20	C-0311-0041	280052.89	246894.49	263473.69	0.0085	2239.5	435000.00	0.0085	3697.5	1458.0
25-21	C-0311-0042	286530.65	338272.20	312401.43	0.003	937.2	434700.00	0.003	1304.1	366.9
25-22	C-0311-0043	0.00	0.00	0.00	0.003	0.0	434700.00	0.003	1304.1	1304.1
25-24	C-0311-0045	350155.23	288254.06	319204.64	0.003	957.6	434700.00	0.003	1304.1	346.5
6-32	C-0311-0052	22346.68	10091.08	16218.88	0.008	129.8	457800.00	0.008	3662.4	3532.6
6-33	C-0311-0053	38286.73	0.00	19143.37	0.008	153.1	457800.00	0.008	3662.4	3509.3
6-37*	C-0311-0084	89787.74	30362.35	60075.04	0.0085	510.6	434700.00	0.0085	3695.0	3184.3
						16774.0			36791.9	20018

SB 288 Major Modification @ 50,000 lb/yr? NO

APPENDIX E
Federal Major Modification

ATTACHMENT VI
Federal Major Modification Calculation

(a)(1)(xxviii)(B)(3) only the portion up to the existing permitted daily heat input or rating will be considered as emissions that could have been accommodated. Each steam generator permit contains a limit on the annual heat input.

Limitations are summarized below:

Permit #	ID#	Annual Limit	Equipment Description Rating	Daily Limit
C-311-36-15	25-15	435,000 MMBtu	58.5 MMBtu/hr	-
C-311-37-20	25-16	457,800 MMBtu	62.5 MMBtu/hr	1404 MMBtu
C-311-38-18	25-17	457,800 MMBtu	58.5 MMBtu/hr	1404 MMBtu
C-311-39-18	25-18	457,800 MMBtu	58.5 MMBtu/hr	1404 MMBtu
C-311-40-17	25-19	434,700 MMBtu	58.5 MMBtu/hr	-
C-311-41-14	25-20	435,000 MMBtu	58.5 MMBtu/hr	-
C-311-42-18	25-21	434,700 MMBtu	58.5 MMBtu/hr	1404 MMBtu
C-311-43-16	25-22	434,700 MMBtu	58.5 MMBtu/hr	1404 MMBtu
C-311-45-15	25-24	434,700 MMBtu	58.5 MMBtu/hr	1404 MMBtu
C-311-52-16	6-32	457,800 MMBtu	58.5 MMBtu/hr	1404 MMBtu
C-311-53-17	6-33	457,800 MMBtu	58.5 MMBtu/hr	1404 MMBtu
C-311-84-14	6-37	434,700 MMBtu	58.5 MMBtu/hr	1404 MMBtu

There are no other legal limitations on the steam generators utilization.

Baseline Actual Emissions (BAE)

Rule 2201 Section 3.18.1.2 states to determine the pre-project baseline actual emissions, the provisions of 40 CFR 51.165(a)(1)(xxxv)(A) through (D) shall be used.

Detailed calculations are not conducted for this analysis BAE is presumed to be zero.

Federal Major Modification Calculation

The calculation of Federal Major Modification may be summarized as follows:

Emissions Increase = PAE – BAE – unused baseline capacity emissions

Basis for PAE

The PAE is the more restrictive of:

62.5 MMBtu/hr x 24 hr/day x 365 days per year = 547,500 Btu/year

or the annual heat input limitation.

As shown below for each steam generator the annual heat input limitation is more restrictive.

Permit #	ID#	Nominal Equipment Description Rating	AnnualBased on Rating	Annual Heat Input Limitiation
C-311-36-xx	25-15	62.5 MMBtu/hr	547,500 MMBtu	435,000 MMBtu
C-311-37-xx	25-16	62.5 MMBtu/hr	547,500 MMBtu	457,800 MMBtu
C-311-38-xx	25-17	62.5 MMBtu/hr	547,500 MMBtu	457,800 MMBtu
C-311-39-xx	25-18	62.5 MMBtu/hr	547,500 MMBtu	457,800 MMBtu
C-311-40-xx	25-19	62.5 MMBtu/hr	547,500 MMBtu	434,700 MMBtu
C-311-41-xx	25-20	62.5 MMBtu/hr	547,500 MMBtu	435,000 MMBtu
C-311-42-xx	25-21	62.5 MMBtu/hr	547,500 MMBtu	434,700 MMBtu
C-311-43-xx	25-22	62.5 MMBtu/hr	547,500 MMBtu	434,700 MMBtu
C-311-45-xx	25-24	62.5 MMBtu/hr	547,500 MMBtu	434,700 MMBtu
C-311-52-xx	6-32	62.5 MMBtu/hr	547,500 MMBtu	457,800 MMBtu
C-311-53-xx	6-33	62.5 MMBtu/hr	547,500 MMBtu	457,800 MMBtu
C-311-84-xx	6-37	62.5 MMBtu/hr	547,500 MMBtu	434,700 MMBtu

Emission Factors

In order to qualify as clean units the post project NOx emission factor will be 14 ppmv @ 3% O2 or 0.017 lb/MMBtu. The emission factors for sulfur are those required by Rule 4320. Emission factors for NOx are those required for compliance with Rule 4306. Emission factors for other pollutants are from the current permits previously established under NSR.

PAE

The PAE for each steam generator for each pollutant is shown in Appendix E.

Baseline Actual Emissions

Baseline actual emissions (BAE) are calculated based on any 24 month period selected by the operator within the previous 5 year period. BAE must be adjusted to exclude any non-compliant operation emissions and emissions no longer allowed due to lower applicable emissions limits that apply at the time of application. The steam generators in this project must comply with District Rule 4320 limiting sulfur to 5 gr/100 scf or scrubbed to remove 95% of sulfur compounds or scrubbed to 9 ppm. In order to qualify as BAE emissions during the baseline period emissions must be reduced to comply with the rule.

Detailed calculations of BAE are not included as the physical and legal limitations on utilization do not increase above that which could have been accommodated by each emissions unit prior to the proposed modification. For the purpose of determining the emissions increase BAE is shown as 0.

Unused Baseline Capacity Emissions (UBCE)

UBCE are the portion of the unit's emissions following the project that an existing unit could have accommodated during the baseline period.

All steam generators have limits on the annual heat input. No change is proposed to the annual heat input limitation.

During the baseline period emissions for all steam generators except C-311-36, '-40-17, '-41-14 and '-76-12 UBCE are restricted by the permit heat input limits.

Steam generators C-311-36, '-40-17, and '-41-14 do not have a permit condition that limits daily heat input however, the rating stated in the equipment description is 58.5 MMBtu/hr. For the purpose of determining the UBCE emissions the daily emissions up to the rating will be used.

The heat input basis for UBCE are summarized below:

Permit #	ID#	Annual Limit	Equipment Description Rating	Daily Permit Limit
C-311-36-15	25-15	435,000 MMBtu	58.5 MMBtu/hr	-
C-311-37-20	25-16	457,800 MMBtu	62.5 MMBtu/hr	1404 MMBtu
C-311-38-18	25-17	457,800 MMBtu	58.5 MMBtu/hr	1404 MMBtu
C-311-39-18	25-18	457,800 MMBtu	58.5 MMBtu/hr	1404 MMBtu
C-311-40-17	25-19	434,700 MMBtu	58.5 MMBtu/hr	-
C-311-41-14	25-20	435,000 MMBtu	58.5 MMBtu/hr	-
C-311-42-18	25-21	434,700 MMBtu	58.5 MMBtu/hr	1404 MMBtu
C-311-43-16	25-22	434,700 MMBtu	58.5 MMBtu/hr	1404 MMBtu
C-311-45-15	25-24	434,700 MMBtu	58.5 MMBtu/hr	1404 MMBtu
C-311-52-16	6-32	457,800 MMBtu	58.5 MMBtu/hr	1404 MMBtu
C-311-53-17	6-33	457,800 MMBtu	58.5 MMBtu/hr	1404 MMBtu
C-311-84-14	6-37	434,700 MMBtu	58.5 MMBtu/hr	1404 MMBtu

Emission Factors

The emission factor for NOx will be 14 ppmv @ 3% O2 or 0.017 lb/MMBtu. Emission factors for other pollutants are from the current permits previously established under NSR. Emission factors for each generator and each pollutant are shown in Appendix C.

Federal Major Modification Emissions Increase

The emission increase for each emissions unit and for each pollutant are shown and compared to the significance thresholds in Appendix E and are summarized below:

Significance Thresholds			
Pollutant	**Increase lb/year***	**Threshold lb/year**	**Major Modification**
VOC	0	0	No
NOx	0	0	No
PM2.5	0	20,000 lbs 2.5	No
	0	80,000 lbs SOx	No
	0	80,000 lbs NOx	No
PM10	0	30,000	No
SOx	0	80,000	No

*See Appendix E for pollutant by pollutant and unit by unit calculations

Note: For the purpose of determining the major modification increase for PM2.5 the increase in PM10 is used.

The federal major modification emission increases are below the significance thresholds.

Therefore, the project is not a Federal Major Modification.

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. No annual emission increase is proposed therefore the QNEC is zero for all emission units.

VIII. Compliance

Rule 2201 New and Modified Stationary Source Review Rule

A. Best Available Control Technology (BACT)

1. BACT Applicability

BACT requirements are triggered on a pollutant-by-pollutant basis and on an emissions unit-by-emissions unit basis. Unless exempted pursuant to Section 4.2, BACT shall be required for the following actions:*:

a. Any new emissions unit with a potential to emit exceeding two pounds per day,
b. The relocation from one Stationary Source to another of an existing emissions unit with a potential to emit exceeding two pounds per day,
c. Modifications to an existing emissions unit with a valid Permit to Operate resulting in an AIPE exceeding two pounds per day, and/or
d. Any new or modified emissions unit, in a stationary source project, which results in an SB288 Major Modification or a Federal Major Modification, as defined by the rule.

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

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

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

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

Federal Major Modification Increase NOx

Permit	Daily limit MMBtu	Annual limit MMBtu	ID#	EF NOx lb/Mmbtu	(1) PAE lbs/year	(2) BAE Presumed	UBCE lb/day	(3) Daily x 365 lb/year	(4) UBCE Annual lb/year	Increase Daily x 365 lb/year	Increase Annual lb/year
C-311-36-xx*	1404	435,000	25-15	0.018	7830	0	25.3	9224	7830	-1394	0
C-311-37-xx	1404	457,800	25-16	0.018	8240	0	25.3	9224	8240	-984	0
C-311-38-xx	1404	457,800	25-17	0.0182	8332	0	25.6	9327	8332	-995	0
C-311-39-xx	1404	457,800	25-18	0.018	8240	0	25.3	9224	8240	-984	0
C-311-40-xx*	1404	434,700	25-19	0.018	7825	0	25.3	9224	7825	-1400	0
C-311-41-xx*	1404	435,000	25-20	0.018	7830	0	25.3	9224	7830	-1394	0
C-311-42-xx	1404	434,700	25-21	0.018	7825	0	25.3	9224	7825	-1400	0
C-311-43-xx	1404	434,700	25-22	0.018	7825	0	25.3	9224	7825	-1400	0
C-311-45-xx	1404	434,700	25-24	0.018	7825	0	25.3	9224	7825	-1400	0
C-311-52-xx	1404	457,800	6-32	0.018	8240	0	25.3	9224	8240	-984	0
C-311-53-xx	1404	457,800	6-33	0.018	8240	0	25.3	9224	8240	-984	0
C-311-84-xx	1404	434,700	6-37	0.018	7825	0	25.3	9224	7825	-1400	0
										-14717	0
										0	0

*Daily based on 58.5 MMBtu/hr x 24 hr/day

Total Federal Major Modification Increase

Increase Daily x 365 = PAE - BE - UBCE Dailyx365 = (1) - (2) - (3)**
Increase Annual = PAE - BE - UBCE Annual* = (1) - (2) - (4)**

**Emissions that could have been accommodated based on the existing daily heat input limitation on an annual basis
***Emissions that could have been accommodated bassed on the existing annual heat input limitation

Federal Major Modification Increase SOx

Permit	Daily limit MMBtu	Annual limit MMBtu	ID#	EF inc 4320 SO2 lb/Mmbtu	(1) PAE lbs/year	(2) BAE Presumed	UBCE lb/day	(3) Daily x 365 lb/year	(4) UBCE Annual lb/year	Increase Daily x 365 lb/year	Increase Annual lb/year
C-311-36-xx*	1404	435,000	25-15	0.052	22620	0	73.0	26648	22620	-4028	0
C-311-37-xx	1404	457,800	25-16	0.052	23806	0	73.0	26648	23806	-2842	0
C-311-38-xx	1404	457,800	25-17	0.052	23806	0	73.0	26648	23806	-2842	0
C-311-39-xx	1404	457,800	25-18	0.052	23806	0	73.0	26648	23806	-2842	0
C-311-40-xx*	1404	434,700	25-19	0.052	22604	0	73.0	26648	22604	-4044	0
C-311-41-xx*	1404	435,000	25-20	0.052	22620	0	73.0	26648	22620	-4028	0
C-311-42-xx	1404	434,700	25-21	0.0143	6216	0	20.1	7328	6216	-1112	0
C-311-43-xx	1404	434,700	25-22	0.0143	6216	0	20.1	7328	6216	-1112	0
C-311-45-xx	1404	434,700	25-24	0.0143	6216	0	20.1	7328	6216	-1112	0
C-311-52-xx	1404	457,800	6-32	0.0143	6547	0	20.1	7328	6547	-782	0
C-311-53-xx	1404	457,800	6-33	0.0143	6547	0	20.1	7328	6547	-782	0
C-311-84-xx	1404	434,700	6-37	0.0143	6216	0	20.1	7328	6216	-1112	0
										-26637	0
										0	0

*Daily based on 58.5 MMBtu/hr x 24 hr/day

Total
Federal Major Modification Increase

Increase Daily x 365 = PAE - BE - UBCE Dailyx365 = (1) - (2) - (3)**
Increase Annual = PAE - BE - UBCE Annual* = (1) - (2) - (4)**

**Emissions that could have been accommodated based on the existing daily heat input limitation on an annual basis
***Emissions that could have been accommodated bassed on the existing annual heat input limitation

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Federal Major Modification Increase PM10

Permit	Daily limit MMBtu	Annual limit MMBtu	ID#	PM10 lb/Mmbtu	(1) PAE lbs/year	(2) BAE Presumed	UBCE lb/day	(3) Daily x 365 lb/year	(4) UBCE Annual lb/year	Increase Daily x 365 lb/year	Increase Annual lbs/year
C-311-36-xx*	1404	435,000	25-15	0.014	6090	0	19.7	7174	6090	-1084	0
C-311-37-xx	1404	457,800	25-16	0.014	6409	0	19.7	7174	6409	-765	0
C-311-38-xx	1404	457,800	25-17	0.045	20601	0	63.2	23061	20601	-2460	0
C-311-39-xx	1404	457,800	25-18	0.045	20601	0	63.2	23061	20601	-2460	0
C-311-40-xx*	1404	434,700	25-19	0.045	19562	0	63.2	23061	19562	-3499	0
C-311-41-xx*	1404	435,000	25-20	0.044	19140	0	61.8	22548	19140	-3408	0
C-311-42-xx	1404	434,700	25-21	0.003	1304	0	4.2	1537	1304	-233	0
C-311-43-xx	1404	434,700	25-22	0.045	19562	0	63.2	23061	19562	-3499	0
C-311-45-xx	1404	434,700	25-24	0.045	19562	0	63.2	23061	19562	-3499	0
C-311-52-xx	1404	457,800	6-32	0.005	2289	0	7.0	2562	2289	-273	0
C-311-53-xx	1404	457,800	6-33	0.005	2289	0	7.0	2562	2289	-273	0
C-311-84-xx	1404	434,700	6-37	0.00675	2934	0	9.5	3459	2934	-525	0

*Daily based on 58.5 MMBtu/hr x 24 hr/day

Total	-21980	0
Federal Major Modification Increase	0	0

Increase Daily x 365 = PAE - BE - UBCE Dailyx365 = (1) - (2) - (3)**
Increase Annual = PAE - BE - UBCE Annual* = (1) - (2) - (4)**

**Emissions that could have been accommodated based on the existing daily heat input limitation on an annual basis
***Emissions that could have been accommodated bassed on the existing annual heat input limitation

Project C-111932

Federal Major Modification Increase VOC

Permit	Daily limit MMBtu	Annual limit MMBtu	ID#	VOC lb/Mmbtu	(1) PAE lbs/year	(2) BAE Presumed	UBCE lb/day	(3) Daily x 365 lb/year	(4) UBCE Annual lb/year	Increase Daily x 365 lb/year	Increase Annual lb/year
C-311-36-xx*	1404	435,000	25-15	0.0085	3698	0	11.9	4356	3698	-658	0
C-311-37-xx	1404	457,800	25-16	0.0085	3891	0	11.9	4356	3891	-465	0
C-311-38-xx	1404	457,800	25-17	0.008	3662	0	11.2	4100	3662	-437	0
C-311-39-xx	1404	457,800	25-18	0.008	3662	0	11.2	4100	3662	-437	0
C-311-40-xx	1404	434,700	25-19	0.0055	2391	0	7.7	2819	2391	-428	0
C-311-41-xx	1404	435,000	25-20	0.0085	3698	0	11.9	4356	3698	-658	0
C-311-42-xx	1404	434,700	25-21	0.003	1304	0	4.2	1537	1304	-233	0
C-311-43-xx	1404	434,700	25-22	0.003	1304	0	4.2	1537	1304	-233	0
C-311-45-xx	1404	434,700	25-24	0.003	1304	0	4.2	1537	1304	-233	0
C-311-52-xx	1404	457,800	6-32	0.008	3662	0	11.2	4100	3662	-437	0
C-311-53-xx	1404	457,800	6-33	0.008	3662	0	11.2	4100	3662	-437	0
C-311-84-xx	1404	434,700	6-37	0.00855	3717	0	12.0	4382	3717	-665	0
										-5323	0
										0	0

*Daily based on 58.5 MMBtu/hr x 24 hr/day

Total
Federal Major Modification Increase

Increase Daily x 365 = PAE - BE - UBCE Dailyx365 = (1) - (2) - (3)**
Increase Annual = PAE - BE - UBCE Annual* = (1) - (2) - (4)**

**Emissions that could have been accommodated based on the existing daily heat input limitation on an annual basis
***Emissions that could have been accommodated bassed on the existing annual heat input limitation

Project C-1111932

ATTACHMENT VII
BACT Analysis

ATTACHMENT VII
BACT Analysis

Top Down BACT Analysis for Steam Generators

1. BACT Analysis for SO_X Emissions:

Oxides of sulfur (SO_X) emissions occur from the combustion of the sulfur, which is present in the fuel.

a. Step 1 - Identify all control technologies

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

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_2 scrubber and either achieving 95% by weight control of sulfur compounds or achieving an emission rate of 30 ppmvd SO_2 at stack O_2

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

b. Step 2 - Eliminate technologically infeasible options

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

c. Step 3 - Rank remaining options by control effectiveness

1) 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_2 scrubber and either achieving 95% by weight control of sulfur compounds or achieving an emission rate of 30 ppmvd SO_2 at stack O_2

d. Step 4 - Cost Effectiveness Analysis

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

e. Step 5 - Select BACT

BACT for SO_X emissions from the oil field steam generators is natural gas fuel with a sulfur content ≤1 gr-S/100 scf or removal of 95% by weight of sulfur compounds; therefore BACT for SO_X emissions is satisfied.

BACT Analysis for PM_{10} Emissions:

Particulate matter (PM_{10}) emissions result from the incomplete combustion of various elements in the fuel.

a. Step 1 - Identify all control technologies

The SJVUAPCD BACT Clearinghouse guideline 1.2.1, 1st quarter 2005, identifies for achieved in practice BACT for CO_{10} emissions from oil field steam generators ≥5 MMBtu/hr as follows:

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_2 scrubber and either achieving 95% by weight control of sulfur compounds or achieving an emission rate of 30 ppmvd SO_2 at stack O_2

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

b. Step 2 - Eliminate technologically infeasible options

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

c. Step 3 - Rank remaining options by control effectiveness

1) 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_2 scrubber and either achieving 95% by weight control of sulfur compounds or achieving an emission rate of 30 ppmvd SO_2 at stack O_2

d. Step 4 - Cost Effectiveness Analysis

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

e. Step 5 - Select BACT

BACT for PM10 emissions from the oil field steam generators is natural gas fuel with a sulfur content ≤1 gr-S/100 scf or removal of 95% by weight of sulfur compounds; therefore BACT for SO_X emissions is satisfied.

3. BACT Analysis for CO Emissions:

Carbon monoxide (CO) emissions are generated from the incomplete combustion of air and fuel.

a. Step 1 - Identify all control technologies

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

1) 50 ppmvd @ 3% O_2

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

b. Step 2 - Eliminate technologically infeasible options

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

c. Step 3 - Rank remaining options by control effectiveness

1) 50 ppmvd @ 3% O_2

d. Step 4 - Cost Effectiveness Analysis

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

e. Step 5 - Select BACT

BACT for CO emissions from the oil field steam generators is limited to 50 ppmvd CO @ 3% O_2. Therefore BACT for CO emissions is satisfied.

5. BACT Analysis for VOC Emissions:

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

a. Step 1 - Identify all control technologies

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

1) Gaseous fuel

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

b. Step 2 - Eliminate technologically infeasible options

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

c. Step 3 - Rank remaining options by control effectiveness

1) Gaseous fuel

d. Step 4 - Cost effectiveness analysis

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

e. Step 5 - Select BACT

BACT for VOC emissions from this oil field steam generator is gaseous fuel. The applicant has proposed to fire all units on gaseous fuel; therefore BACT for VOC emissions is satisfied.

ATTACHMENT VIII
Title V Compliance Certification Form

San Joaquin Valley
Unified Air Pollution Control District

TITLE V MODIFICATION - COMPLIANCE CERTIFICATION FORM

I. TYPE OF PERMIT ACTION (Check appropriate box)

[ ] SIGNIFICANT PERMIT MODIFICATION
[X] MINOR PERMIT MODIFICATION
[ ] ADMINISTRATIVE AMENDMENT

COMPANY NAME: CHEVRON U.S.A. INC.	FACILITY ID: C-311
1. Type of Organization: [X] Corporation [ ] Sole Ownership [ ] Government [ ] Partnership [ ] Utility	
2. Owner's Name: CHEVRON U.S.A. INC.	
3. Agent to the Owner: N/A	

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

EC Based on information and belief formed after reasonable inquiry, the equipment identified in this application will continue to comply with the applicable federal requirement(s).

EC Based on information and belief formed after reasonable inquiry, the equipment identified in this application will comply with applicable federal requirement(s) that will become effective during the permit term, on a timely basis.

EC Corrected information will be provided to the District when I become aware that incorrect or incomplete information has been submitted.

EC Based on information and belief formed after reasonable inquiry, information and statements in the submitted application package, including all accompanying reports, and required certifications are true accurate and complete.

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

Signature of Responsible Official — Date: 5/2/12

Ed Colina
Name of Responsible Official (please print)

ATCs C-311-36-20, '37-25, '38-24, '39-22, '40-21, '41-18, '42-20, '43-18, '45-18, '52-19, '53-20 and '84-18

Operations Supervisor
Title of Responsible Official (please print)

ATTACHMENT IX
HRA

San Joaquin Valley Air Pollution Control District
Risk Management Review

To:	Richard Edgehill – Permit Services
From:	Cheryl Lawler – Technical Services
Date:	December 20, 2011
Facility Name:	Chevron USA Inc.
Location:	Coalinga Oilfield
Application #(s):	C-311-19-19, 20-19, 21-10, 22-18, 23-16, 25-9, 27-17, 28-19, 36-20, 37-25, 38-24, 39-22, 40-21, 41-18, 42-20, 43-18, 45-18, 46-16, 47-10, 48-11, 49-11, 50-11, 51-16, 52-19, 53-20, 76-17, 84-18
Project #:	C-1111932

RECEIVED
DEC 28 2011
SJVAPCD
Southern Region

A. RMR SUMMARY

RMR Summary			
Categories	**27 Steam Generators**	**Project Totals**	**Facility Totals**
Prioritization Score	0.03	0.03	>1
Acute Hazard Index	0.01	0.01	0.01
Chronic Hazard Index	N/A*	N/A*	0.00
Maximum Individual Cancer Risk	N/A*	N/A*	5.82E-07
T-BACT Required?	**No**		
Special Permit Conditions?	**Yes**		

*The Chronic Hazard Index and Maximum Individual Cancer Risk were not calculated, because no increase in annual emissions was proposed as part of this project.

Proposed Permit Conditions

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

All Project Units

1. {1898} The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102] N

I. Project Description

Technical Services received a request on December 6, 2011, to perform a Risk Management Review for 27 Coalinga Field steam generators. The facility is requesting to revise the maximum hourly heat input rating and to remove daily fuel limitations. No increase in annual emissions is proposed as part of this project.

II. Analysis

Toxic emissions were calculated using District approved emission factors for natural gas and refinery gas external combustion. In accordance with the District's *Risk Management Policy for Permitting New and Modified Sources* (APR 1905-1, March 2, 2001), risks from the project were prioritized using the procedures in the 1990 CAPCOA Facility Prioritization Guidelines and incorporated in the District's HEART's database. The prioritization score for the project was less than 1.0 (see RMR Summary Table); however, the facility's combined prioritization scores totaled to greater than one. Therefore, a refined Health Risk Assessment was required and performed for the project. AERMOD was used with point source parameters outlined below and concatenated 5-year meteorological data from Turk to determine maximum dispersion factors at the nearest residential and business receptors. The dispersion factors were input into the HARP model to calculate the Chronic and Acute Hazard Indices and the Carcinogenic Risk.

The following parameters were used for the review:

Analysis Parameters			
Source Types	Point	**Closest Receptor (m)**	1128
Stack Heights (m)	5.9 thru 16.2	**Type of Receptor**	Business
Stack Diameters (m)	0.7 thru 2.3	**Location Type**	Rural
Stack Gas Temperatures (K)	336 thru 383	**Stack Gas Velocities (m/sec)**	2.0 thru 18.3

III. Conclusions

The Acute Hazard Index is below 1.0; and the Chronic Hazard Index and Maximum Individual Cancer Risk were not calculated, because no increase in annual emissions is proposed as part of this project. 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 all of this project's proposed units.

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.

ATTACHMENT X
Draft ATCs

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: C-311-36-20 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: CHEVRON USA INC
MAILING ADDRESS: PO BOX 1392
BAKERSFIELD, CA 93302

LOCATION: HEAVY OIL PRODUCTION
FRESNO COUNTY, CA

SECTION: 25 **TOWNSHIP:** 20S **RANGE:** 14E

EQUIPMENT DESCRIPTION:
MODIFICATION OF 58.5 MMBTU/HR SG-27-15 STRUTHERS THERMOFLOOD STEAM GENERATOR, MODEL OH-50-ND-16XAM, WITH NORTH AMERICAN MODEL GLE BURNER AND FLUE GAS RECIRCULATION (FGR) SYSTEM SERVED BY THE 25D NEPTUNE AIRPOL CAUSTIC SCRUBBER WHEN FIRING WELL CASING AND/OR TANK VAPOR RECOVERY GAS: REVISE HEAT INPUT RATING FROM 58.5 MMBTU/HR TO 62.5 MMBTU/HR, LOWER NOX LIMIT TO 14 PPMV @ 3% O2

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. ATC shall be implemented concurrently with or subsequent to ATC C-311-36-17. [District Rule 2201] Federally Enforceable Through Title V Permit
3. {1898} The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]
4. This unit shall be fueled with natural gas, LPG, or a blend of natural gas and well casing and tank vapor recovery (TVR) gas. [District Rule 2201] Federally Enforceable Through Title V Permit
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. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (559) 230-5950 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

C-311-36-20 : Apr 24 2012 4:20PM -- EDGEHILR : Joint Inspection NOT Required

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. Total LPG, casing gas, waste gas, and natural gas consumption shall not exceed 435,000 MMBtu/year. [District Rule 2201] Federally Enforceable Through Title V Permit

10. The permittee shall maintain and operate a non-resettable, totalizing mass or volumetric flow meter in the fuel line to the steam generator. [District Rule 2201] Federally Enforceable Through Title V Permit

11. Fuel gas sulfur content shall not exceed 1 gr S/100 scf unless SOx is reduced by 95% or to 9 ppmv SOx @ 3% O2 in exhaust with scrubber. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit

12. Whenever the unit is switched to scrubbed operation, compliance source testing for SOx shall be conducted within 60 days of initial scrubbing date unless source testing under scrubbed operation has occurred within the previous 12 months. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit

13. PUC quality gas shall be combusted in this unit whenever the scrubber is not being operated. [District Rule 2201] Federally Enforceable Through Title V Permit

14. Scrubber liquor pH shall be maintained between 6.5 and 8.0. [District Rule 2201] Federally Enforceable Through Title V Permit

15. Tray packing flowrate shall be operated at 700 to 840 gallons/minute. [District Rule 2201] Federally Enforceable Through Title V Permit

16. Quench flowrate shall be operated at 145 to 185 gallons/minute. [District Rule 2201] Federally Enforceable Through Title V Permit

17. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, each fuel source shall be tested weekly for sulfur content and higher heating value. If compliance with the fuel sulfur content limit and sulfur emission limits has been demonstrated for 8 consecutive weeks for a fuel source, then the fuel testing frequency shall be semi-annually. If a semi-annual fuel content source test fails to show compliance, weekly testing shall resume. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

18. When complying with SOx emission limits by testing of stack emissions, testing shall be performed not less than once every 12 months using EPA Method 6 and EPA Method 6C; or ARB Method 1-100; or, for units using gaseous fuel scrubbed for sulfur pre-combustion, the sulfur content of the gaseous fuel being fired in the unit shall be determined using ASTM D 1072, D 3031, D 4084, D 3246 or a grab sample analysis by GC-FPD/TCD or double GC for H2S and mercaptans performed in the laboratory and EPA Method 19 to calculated emissions. Gaseous fuel fired units demonstrating compliance on two consecutive annual source tests shall be tested not less than once every thirty-six months, however annual source testing shall resume if any test fails to show compliance. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

19. If the unit is fired on noncertified gaseous fuel and compliance with SOx emission limits is achieved through fuel sulfur content limitations, then the sulfur content of the gaseous fuel being fired in the unit shall be determined using ASTM D 1072, D 3031, D 4084, D 3246 or grab sample analysis by GC-FPD/TCD or double GC for H2S and mercaptans performed in the laboratory. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

20. If fuel analysis is used to demonstrate compliance with the conditions of this permit, the fuel higher heating value for each fuel shall be certified by third party fuel supplier or determined by: D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District Rule 2520, 9.4.2, 4305, 4306, 4320, and 4351, 6.2.1] Federally Enforceable Through Title V Permit

21. Except during start-up and shutdown periods, emissions from the steam generator shall not exceed any of the following limits: 14 ppmvd NOx @ 3% O2 or 0.017 lb-NOx/MMBtu, 0.052 lb-SOx/MMBtu, 0.014 lb-PM10/MMBtu, 50 ppmvd CO @ 3% O2 or 0.037 lb-CO/MMBtu, or 0.0085 lb-VOC/MMBtu. [District Rules 2201, 4301, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

22. During start-up and shutdown periods emissions from the steam generator shall not exceed either of the following limits: 0.1 lb-NOx/MMBtu or 0.084 lb-CO/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit

23. 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 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

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

25. Maximum emissions from the steam generator, including start-up and shutdown, shall not exceed any of the following limits: 50.5 lb-NOx/day, 7,830 lb-NOx/year, 49.1 lb-CO/day, or 16,095 lb-CO/year. [District Rule 2201] Federally Enforceable Through Title V Permit

26. The permittee shall monitor and record the stack concentration of NOx, CO, and O2 at least once every month (in which a source test is not performed) using a portable 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 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

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 NOx, CO, and O2 measurements, (2) the O2 concentration in percent and the measured NOx and CO concentrations corrected to 3% O2, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

30. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. 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

31. Source testing to measure SOx emissions from this unit while fired on natural gas shall be conducted at least once every twelve (12) months. [District Rule 4320] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

32. 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

33. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

34. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit

35. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit

36. The following test methods shall be used: NOx (ppmv) - EPA Method 7E or ARB Method 100, NOx (lb/MMBtu) - EPA Method 19, CO (ppmv) - EPA Method 10 or 10B or ARB Method 100, stack gas oxygen - EPA Method 3 or 3Aor ARB Method 100, SOx (lb/MMBtu) - ARB Method 100 or EPA Method 6, 6C or fuel gas sulfur content analysis and EPA Method 19, fuel gas sulfur content - EPA Method 11 or 15, ASTM D3246 or double GC for H2S and mercaptans performed in a laboratory, fuel gas hhv - ASTM D1826 or D1945 in conjunction with ASTM D3588. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

37. 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

38. All required source testing shall conform to the compliance testing procedures described in District Rule 1081 (Amended December 16, 1993). [District Rule 1081, and County Rules 108 (Kings), 108.1 (Fresno, Merced, San Joaquin, Tulare, Kern, and Stanislaus), and 110 (Madera)] Federally Enforceable Through Title V Permit

39. Copies of all gas purchase contracts, supplier certifications, and test results to determine compliance with the conditions of this permit shall be maintained. The operator shall record daily amount and type(s) of fuel(s) combusted, fuel source, and all dates on which unit is fired on any noncertified fuel and record specific type of noncertified fuel used. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

40. Permittee shall record natural gas, propane, casing gas, and waste gas consumption. [District Rule 1070 and 2520, 9.4.2] Federally Enforceable Through Title V Permit

41. Permittee shall measure and record the BTU content of the gas burned at the time of NOx testing, except for natural gas purchased from a PUC regulated utility. [District Rules 2201 and 4801] Federally Enforceable Through Title V Permit

42. Permittee shall maintain with the permit a current listing of all TEOR and TVR systems providing vapor to this steam generator and shall make such listing readily available for District inspection upon request [District Rule 2201] Federally Enforceable Through Title V Permit

43. Permittee shall maintain daily records of volume of fuel gas burned, TEOR/TVR gas incinerated, and permit number(s) of systems providing gas for incineration. [District Rule 2201] Federally Enforceable Through Title V Permit

44. All records shall be maintained and retained on-site for a period of at least 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

45. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following requirements of SJVUAPCD Rules 4201 (Amended December 17, 1992), and 4301 (Amended December 17, 1992). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

46. Compliance with permit conditions in the Title V permit shall be deemed compliance with the requirements of County Rules 108 (Kings), 108.1 (Fresno, Merced, San Joaquin, Tulare, Kern, and Stanislaus), and 110 (Madera), 402 (Madera), 404 (Fresno, Kern, Tulare, Kings, Stanislaus, Merced, and San Joaquin), 405 (Madera), 408 (Fresno, Kern, Tulare, Kings, Stanislaus, Merced, and San Joaquin), 407.2 (Kern, Tulare, Kings, Stanislaus, and San Joaquin), and 408.2 (Merced). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

47. The requirements of 40 CFR 72.6(b) and 40 CFR 60.40c do not apply to this source. A permit shield is granted from this requirement. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: C-311-37-25 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: CHEVRON USA INC
MAILING ADDRESS: PO BOX 1392
BAKERSFIELD, CA 93302

LOCATION: HEAVY OIL PRODUCTION
FRESNO COUNTY, CA

SECTION: 25 **TOWNSHIP:** 20S **RANGE:** 14E

EQUIPMENT DESCRIPTION:
MODIFICATION OF 62.5 MMBTU/HR SG 25-16 STRUTHERS THERMOFLOOD STEAM GENERATOR, MODEL OH-50-ND-16XAM, WITH NORTH AMERICAN MODEL GLE BURNER AND FLUE GAS RECIRCULATION (FGR) SYSTEM SERVED BY THE 25D NEPTUNE AIRPOL CAUSTIC SCRUBBER WHEN FIRING WELL CASING AND/OR TANK VAPOR RECOVERY GAS: REMOVE CONDITION LIMITING DAILY FUEL CONSUMPTION, LOWER NOX LIMIT TO 14 PPMV @ 3% O2

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. ATC shall be implemented concurrently with or subsequent to ATC C-311-37-21. [District Rule 2201] Federally Enforceable Through Title V Permit
3. {1898} The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]
4. This unit shall be fueled with natural gas, LPG, or a blend of natural gas and well casing and tank vapor recovery (TVR) gas. [District Rule 2201] Federally Enforceable Through Title V Permit
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. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (559) 230-5950 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

Central Regional Office • 1990 E. Gettysburg Ave. • Fresno, CA 93726 • (559) 230-5900 • Fax (559) 230-6061

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. Total gas consumption shall not exceed 457,800 MMBtu/year. [District Rule 2201] Federally Enforceable Through Title V Permit

10. The permittee shall install and maintain a non-resettable, totalizing mass or volumetric flow meter in each fuel line to the boiler. [District Rule 2201] Federally Enforceable Through Title V Permit

11. Fuel gas sulfur content shall not exceed 1 gr S/100 scf unless SOx is reduced by 95% or to 9 ppmv SOx @ 3% O2 in exhaust with scrubber. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit

12. Whenever the unit is switched to scrubbed operation, compliance source testing for SOx shall be conducted within 60 days of initial scrubbing date unless source testing under scrubbed operation has occurred within the previous 12 months. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit

13. PUC quality gas shall be combusted in this unit whenever the scrubber is not being operated. [District Rule 2201] Federally Enforceable Through Title V Permit

14. Scrubber liquor pH shall be maintained between 6.5 and 8.0. [District Rule 2201] Federally Enforceable Through Title V Permit

15. Tray packing flowrate shall be operated at 700 to 840 gallons/minute. [District Rule 2201] Federally Enforceable Through Title V Permit

16. Quench flowrate shall be operated at 145 to 185 gallons/minute. [District Rule 2201] Federally Enforceable Through Title V Permit

17. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, each fuel source shall be tested weekly for sulfur content and higher heating value. If compliance with the fuel sulfur content limit and sulfur emission limits has been demonstrated for 8 consecutive weeks for a fuel source, then the fuel testing frequency shall be semi-annually. If a semi-annual fuel content source test fails to show compliance, weekly testing shall resume. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

18. When complying with SOx emission limits by testing of stack emissions, testing shall be performed not less than once every 12 months using EPA Method 6 and EPA Method 6C ; or ARB Method 1-100; or, for units using gaseous fuel scrubbed for sulfur pre-combustion, the sulfur content of the gaseous fuel being fired in the unit shall be determined using ASTM D 1072, D 3031, D 4084, D 3246 or a grab sample analysis by GC-FPD/TCD or double GC for H2S and mercaptans performed in the laboratory and EPA Method 19 to calculated emissions. Gaseous fuel fired units demonstrating compliance on two consecutive annual source tests shall be tested not less than once every thirty-six months, however annual source testing shall resume if any test fails to show compliance. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

19. If the unit is fired on noncertified gaseous fuel and compliance with SOx emission limits is achieved through fuel sulfur content limitations, then the sulfur content of the gaseous fuel being fired in the unit shall be determined using ASTM D 1072, D 3031, D 4084, D 3246 or grab sample analysis by GC-FPD/TCD or double GC for H2S and mercaptans performed in the laboratory. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

20. If fuel analysis is used to demonstrate compliance with the conditions of this permit, the fuel higher heating value for each fuel shall be certified by third party fuel supplier or determined by: D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District Rule 2520, 9.4.2, 4305, 4306, 4320, and 4351, 6.2.1] Federally Enforceable Through Title V Permit

21. Except during start-up and shutdown periods, emissions from the steam generator shall not exceed any of the following limits: 14 ppmvd NOx @ 3% O2 or 0.017 lb-NOx/MMBtu, 0.052 lb-SOx/MMBtu, 0.014 lb-PM10/MMBtu, 50 ppmvd CO @ 3% O2 or 0.037 lb-CO/MMBtu, or 0.008 lb-VOC/MMBtu. [District Rules 2201, 4301, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

22. During start-up and shutdown periods emissions from the steam generator shall not exceed either of the following limits: 0.1 lb-NOx/MMBtu or 0.084 lb-CO/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit

23. 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 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

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

25. Maximum emissions from the steam generator, including start-up and shutdown, shall not exceed any of the following limits: 50.5 lb-NOx/day, 8,240 lb-NOx/year, 85.6 lb-CO/day, or 16,939 lb-CO/year. [District Rule 2201] Federally Enforceable Through Title V Permit

26. The permittee shall monitor and record the stack concentration of NOx, CO, and O2 at least once every month (in which a source test is not performed) using a portable 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 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

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 NOx, CO, and O2 measurements, (2) the O2 concentration in percent and the measured NOx and CO concentrations corrected to 3% O2, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

30. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. 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

31. Source testing to measure SOx emissions from this unit while fired on natural gas shall be conducted at least once every twelve (12) months. [District Rule 4320] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

32. 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

33. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

34. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit

35. The following test methods shall be used: NOx (ppmv) - EPA Method 7E or ARB Method 100, NOx (lb/MMBtu) - EPA Method 19, CO (ppmv) - EPA Method 10 or 10B or ARB Method 100, stack gas oxygen - EPA Method 3 or 3Aor ARB Method 100, SOx (lb/MMBtu) - ARB Method 100 or EPA Method 6, 6C or fuel gas sulfur content analysis and EPA Method 19, fuel gas sulfur content - EPA Method 11 or 15, ASTM D3246 or double GC for H2S and mercaptans performed in a laboratory, fuel gas hhv - ASTM D1826 or D1945 in conjunction with ASTM D3588. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

36. 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

37. 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

38. Sampling facilities for source testing shall be provided in accordance with the provisions of rule 1081 (Source Sampling). [District Rule 1081] Federally Enforceable Through Title V Permit

39. Natural gas sulfur content and higher heating value (hhv) shall be certified by a third party fuel supplier of each fuel source or natural gas shall be tested for sulfur content and higher heating value (hhv) monthly. Waste gas shall be tested for sulfur content and higher heating value (hhv) not less than monthly. [District Rule 2201] Federally Enforceable Through Title V Permit

40. All required source testing shall conform to the compliance testing procedures described in District Rule 1081 (Amended December 16, 1993). [District Rule 1081, and County Rules 108 (Kings), 108.1 (Fresno, Merced, San Joaquin, Tulare, Kern, and Stanislaus), and 110 (Madera)] Federally Enforceable Through Title V Permit

41. Copies of all gas purchase contracts, supplier certifications, and test results to determine compliance with the conditions of this permit shall be maintained. The operator shall record daily amount and type(s) of fuel(s) combusted, fuel source, and all dates on which unit is fired on any noncertified fuel and record specific type of noncertified fuel used. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

42. Permittee shall record daily total gas consumption. Records shall be retained for at least five years and made available for District inspection upon request. [District Rule 1070 and 2520, 9.5.2] Federally Enforceable Through Title V Permit

43. Daily records of the tray packing flowrate and the quench flowrate shall be maintained, retained on the premises for a period of at least five years, and made available for District inspection upon request. [District Rule 1070 and 2520, 9.5.2] Federally Enforceable Through Title V Permit

44. Permittee shall measure and record the BTU content of the gas burned at the time of NOx source testing, except for natural gas purchased from a PUC regulated utility. [District Rules 2201 and 4801] Federally Enforceable Through Title V Permit

45. Permittee shall maintain records of higher heating value (hhv), in MMBtu/scf, for each gaseous fuel used in this operation. [District Rule 2201] Federally Enforceable Through Title V Permit

46. Permittee shall maintain with the permit a current listing of all TEOR and TVR systems providing vapor to this steam generator and shall make such listing readily available for District inspection upon request [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

47. Permittee shall maintain daily records of volume of fuel gas burned, TEOR/TVR gas incinerated, and permit number(s) of systems providing gas for incineration. [District Rule 2201] Federally Enforceable Through Title V Permit

48. 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

49. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following requirements of SJVUAPCD Rules 4201 (Amended December 17, 1992), and 4301 (Amended December 17, 1992). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

50. Compliance with permit conditions in the Title V permit shall be deemed compliance with the requirements of County Rules 108 (Kings), 108.1 (Fresno, Merced, San Joaquin, Tulare, Kern, and Stanislaus), and 110 (Madera), 402 (Madera), 404 (Fresno, Kern, Tulare, Kings, Stanislaus, Merced, and San Joaquin), 405 (Madera), 408 (Fresno, Kern, Tulare, Kings, Stanislaus, Merced, and San Joaquin), 407.2 (Kern, Tulare, Kings, Stanislaus, and San Joaquin), and 408.2 (Merced). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

51. The requirements of 40 CFR 72.6(b) and 40 CFR 60.40c do not apply to this source. A permit shield is granted from this requirement. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: C-311-38-24 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: CHEVRON USA INC
MAILING ADDRESS: PO BOX 1392
BAKERSFIELD, CA 93302

LOCATION: HEAVY OIL PRODUCTION
FRESNO COUNTY, CA

SECTION: 25D **TOWNSHIP:** 20S **RANGE:** 14E

EQUIPMENT DESCRIPTION:
MODIFICATION OF 58.5 MMBTU/HR SG 25-17 STRUTHERS THERMOFLOOD STEAM GENERATOR, MODEL OH-50-ND-16XAM, WITH A NORTH AMERICAN MODEL GLE BURNER AND FLUE GAS RECIRCULATION (FGR) SYSTEM SERVED BY THE 25D NEPTUNE AIRPOL CAUSTIC SCRUBBER WHEN FIRING WELL CASING AND/OR TANK VAPOR RECOVERY GAS: REMOVE CONDITION LIMITING DAILY FUEL CONSUMPTION AND REVISE HEAT INPUT RATING FROM 58.5 MMBTU/HR TO 62.5 MMBTU/HR, LOWER NOX LIMIT TO 14 PPMV @ 3% O2

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. ATC shall be implemented concurrently with or subsequent to ATC C-311-38-21. [District Rule 2201] Federally Enforceable Through Title V Permit
3. {1898} The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]
4. This unit shall be fueled with natural gas, LPG, or a blend of natural gas and well casing and tank vapor recovery (TVR) gas. [District Rule 2201] Federally Enforceable Through Title V Permit
5. Total gas consumption of this unit shall not exceed 457,800 MMBtu/year. [District Rule 2201] Federally Enforceable Through Title V Permit
6. The permittee shall maintain a non-resettable, totalizing mass or volumetric flow meter in each fuel line to the boiler. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (559) 230-5950 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

7. Fuel gas sulfur content shall not exceed 1 gr S/100 scf unless SOx is reduced by 95% or to 9 ppmv SOx @ 3% O2 in exhaust with scrubber. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
8. PUC quality gas shall be combusted in this unit whenever the scrubber is not being operated. [District Rule 2201] Federally Enforceable Through Title V Permit
9. Scrubber liquor pH shall be maintained between 6.5 and 8.0. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Tray packing flowrate shall be operated at 700 to 840 gallons/minute. [District Rule 2201] Federally Enforceable Through Title V Permit
11. Quench flowrate shall be operated at 145 to 185 gallons/minute. [District Rule 2201] Federally Enforceable Through Title V Permit
12. Particulate matter emissions shall not exceed 0.1 grain/dscf, 0.1 grain/dscf calculated to 12% CO2, nor 10 lb/hr. [District Rules 4201, 3.1 and 4301, 5.1 and 5.2.3] Federally Enforceable Through Title V Permit
13. Sulfur compound emissions shall not exceed 0.2% by volume, 2000 ppmv, on a dry basis averaged over 15 consecutive minutes. [County Rules 404 (Madera), 406 (Fresno), and 407 (Kings, Merced, San Joaquin, Tulare, Kern, and Stanislaus)] Federally Enforceable Through Title V Permit
14. Emissions of sulfur compounds from this unit shall not exceed 200 lb/hr, calculated as SO2. Compliance with this requirement may be demonstrated by firing the unit only on PUC or FERC regulated natural gas or by testing the sulfur content of each fuel and determining the maximum hourly emissions of sulfur compounds by multiplying the sulfur content of each fuel in lb/MMBtu by the maximum heat input rating of the unit; or by source testing in combination with fuel analysis. [District Rules 2520, 9.4.2 and 4301, 5.2.1] Federally Enforceable Through Title V Permit
15. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, each fuel source shall be tested weekly for sulfur content and higher heating value. If compliance with the fuel sulfur content limit and sulfur emission limits has been demonstrated for 8 consecutive weeks for a fuel source, then the fuel testing frequency shall be semi-annually. If a semi-annual fuel content source test fails to show compliance, weekly testing shall resume. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
16. When complying with SOx emission limits by testing of stack emissions, testing shall be performed not less than once every 12 months using EPA Method 6 and EPA Method 6C ; or ARB Method 1-100; or, for units using gaseous fuel scrubbed for sulfur pre-combustion, the sulfur content of the gaseous fuel being fired in the unit shall be determined using ASTM D 1072, D 3031, D 4084, D 3246 or a grab sample analysis by GC-FPD/TCD or double GC for H2S and mercaptans performed in the laboratory and EPA Method 19 to calculated emissions. Gaseous fuel fired units demonstrating compliance on two consecutive annual source tests shall be tested not less than once every thirty-six months, however annual source testing shall resume if any test fails to show compliance. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
17. If the unit is fired on noncertified gaseous fuel and compliance with SOx emission limits is achieved through fuel sulfur content limitations, then the sulfur content of the gaseous fuel being fired in the unit shall be determined using ASTM D 1072, D 3031, D 4084, D 3246 or grab sample analysis by GC-FPD/TCD or double GC for H2S and mercaptans performed in the laboratory. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
18. If fuel analysis is used to demonstrate compliance with the conditions of this permit, the fuel higher heating value for each fuel shall be certified by third party fuel supplier or determined by: D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District Rule 2520, 9.4.2, 4305, 4306, and 4320, and 4351, 6.2.1] Federally Enforceable Through Title V Permit
19. Nitrogen oxide (NOx) emissions shall not exceed 140 lb/hr, calculated as NO2. [District Rules 4301, 5.2.2, 5.3, and 5.5 and 2520, 9.4.2] Federally Enforceable Through Title V Permit
20. Emissions from the steam generator shall not exceed any of the following limits: 0.052 lb-SOx/MMBtu, 0.045 lb-PM10/MMBtu, or 0.008 lb-VOC/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

21. Except during start-up and shutdown periods emissions from the steam generator shall not exceed either of the following limits: 14 ppmvd NOx @ 3% O2, equivalent to 0.017 lb-NOx/MMBtu or 50 ppmvd CO @ 3% O2, equivalent to 0.037 lb-CO/MMBtu. [District Rules 2201, 4301, 5.2, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

22. During start-up and shutdown periods emissions from the steam generator shall not exceed either of the following limits: 0.1 lb-NOx/MMBtu or 0.084 lb-CO/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit

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

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

25. Maximum emissions from the steam generator, including start-up and shutdown, shall not exceed any of the following limits: 50.5 lb-NOx/day, 8,332 lb-NOx/yr, 51.9 lb-CO/day, or 16,939 lb-CO/yr. [District Rule 2201] Federally Enforceable Through Title V Permit

26. 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

27. Source testing to measure SOx emissions from this unit while fired on natural gas shall be conducted at least once every twelve (12) months. [District Rule 4320] Federally Enforceable Through Title V Permit

28. NOx, and CO emissions shall be measured with source testing conducted by independent testing laboratory and shall be witnessed or authorized by the District [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

29. 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

30. 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 2520, 9.3.2, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

31. 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

32. 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

33. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

34. The following test methods shall be used: NOx (ppmv) - EPA Method 7E or ARB Method 100, NOx (lb/MMBtu) - EPA Method 19, CO (ppmv) - EPA Method 10 or 10B or ARB Method 100, stack gas oxygen - EPA Method 3 or 3Aor ARB Method 100, SOx (lb/MMBtu) - ARB Method 100 or EPA Method 6, 6C or fuel gas sulfur content analysis and EPA Method 19, fuel gas sulfur content - EPA Method 11 or 15, ASTM D3246 or double GC for H2S and mercaptans performed in a laboratory, fuel gas hhv - ASTM D1826 or D1945 in conjunction with ASTM D3588. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

35. Stack gas moisture content shall be determined using EPA Method 4. [District Rule 2201] Federally Enforceable Through Title V Permit

36. 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 2520, 9.3.2, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

37. 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 2520, 9.3.2, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

38. 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 Rule 2520, 9.4.2, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

39. The permittee shall maintain records of: (1) the date and time of NOx, CO, and O2 measurements, (2) the O2 concentration in percent and the measured NOx and CO concentrations corrected to 3% O2, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 2520, 9.3.2, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

40. Natural gas sulfur content and higher heating value (hhv) shall be certified by a third party fuel supplier of each fuel source or natural gas shall be tested for sulfur content and higher heating value (hhv) monthly. Waste gas shall be tested for sulfur content and higher heating value (hhv) not less than monthly. [District Rule 2201] Federally Enforceable Through Title V Permit

41. Copies of all gas purchase contracts, supplier certifications, and test results to determine compliance with the conditions of this permit shall be maintained. The operator shall record daily amount and type(s) of fuel(s) combusted, fuel source, and all dates on which unit is fired on any noncertified fuel and record specific type of noncertified fuel used. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

42. Permittee shall maintain records of daily total gas consumption. [District Rule 1070 and 2520, 9.5.2] Federally Enforceable Through Title V Permit

43. Permittee shall maintain daily records of the tray packing flowrate and the quench flowrate. [District Rule 1070 and 2520, 9.5.2] Federally Enforceable Through Title V Permit

44. Permittee shall measure and record the BTU content of the gas burned at the time of NOx source testing, except for natural gas purchased from a PUC regulated utility. [District Rules 2201 and 4801] Federally Enforceable Through Title V Permit

45. Permittee shall maintain records of higher heating value (hhv), in MMBtu/scf, for each gaseous fuel used in this operation. [District Rule 2201] Federally Enforceable Through Title V Permit

46. Permittee shall maintain with the permit a current listing of all TEOR and TVR systems providing vapor to this steam generator. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

47. Permittee shall maintain daily records of volume of fuel gas burned, TEOR/TVR gas incinerated, and permit number(s) of systems providing gas for incineration. [District Rule 2201] Federally Enforceable Through Title V Permit

48. 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, 2520, 9.4.2, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

49. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following requirements of SJVUAPCD Rules 4201 (Amended December 17, 1992), and 4301 (Amended December 17, 1992). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

50. Compliance with permit conditions in the Title V permit shall be deemed compliance with the requirements of County Rules 108 (Kings), 108.1 (Fresno, Merced, San Joaquin, Tulare, Kern, and Stanislaus), and 110 (Madera), 402 (Madera), 404 (Fresno, Kern, Tulare, Kings, Stanislaus, Merced, and San Joaquin), 405 (Madera), 408 (Fresno, Kern, Tulare, Kings, Stanislaus, Merced, and San Joaquin), 407.2 (Kern, Tulare, Kings, Stanislaus, and San Joaquin), and 408.2 (Merced). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

51. The requirements of 40 CFR 72.6(b) and 40 CFR 60.40c do not apply to this source. A permit shield is granted from this requirement. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: C-311-39-22 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: CHEVRON USA INC
MAILING ADDRESS: PO BOX 1392
BAKERSFIELD, CA 93302

LOCATION: HEAVY OIL PRODUCTION
FRESNO COUNTY, CA

SECTION: 25 **TOWNSHIP:** 20S **RANGE:** 14E

EQUIPMENT DESCRIPTION:
MODIFICATION OF 58.5 MMBTU/HR SG-25-19 STRUTHERS THERMOFLOOD STEAM GENERATOR, MODEL OH-50-ND-16XAM, WITH NORTH AMERICAN MODEL GLE BURNER AND FLUE GAS RECIRCULATION (FGR) SYSTEM SERVED BY THE 25D NEPTUNE AIRPOL CAUSTIC SCRUBBER WHEN FIRING WELL CASING AND/OR TANK VAPOR RECOVERY GAS: REMOVE CONDITION LIMITING DAILY FUEL CONSUMPTION AND REVISE HEAT INPUT RATING FROM 58.5 MMBTU/HR TO 62.5 MMBTU/HR, LOWER NOX LIMIT TO 14 PPMV @ 3% O2

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. ATC shall be implemented concurrently with or subsequent to ATC C-311-39-19. [District Rule 2201] Federally Enforceable Through Title V Permit
3. {1898} The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]
4. This unit shall be fueled with natural gas, LPG, or a blend of natural gas and well casing and tank vapor recovery (TVR) gas. [District Rule 2201] Federally Enforceable Through Title V Permit
5. Total gas consumption shall not exceed 457,800 MMBtu/year. [District Rule 2201] Federally Enforceable Through Title V Permit
6. The permittee shall install and maintain a non-resettable, totalizing mass or volumetric flow meter in each fuel line to the boiler. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (559) 230-5950 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

Central Regional Office • 1990 E. Gettysburg Ave. • Fresno, CA 93726 • (559) 230-5900 • Fax (559) 230-6061

7. Fuel gas sulfur content shall not exceed 1 gr S/100 scf unless SOx is reduced by 95% or to 9 ppmv SOx @ 3% O2 in exhaust with scrubber. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
8. Whenever the unit is switched to scrubbed operation, compliance source testing for SOx shall be conducted within 60 days of initial scrubbing date unless source testing under scrubbed operation has occurred within the previous 12 months. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
9. PUC quality gas shall be combusted in this unit whenever the scrubber is not being operated. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Scrubber liquor pH shall be maintained between 6.5 and 8.0. [District Rule 2201] Federally Enforceable Through Title V Permit
11. Tray packing flowrate shall be operated at 700 to 840 gallons/minute. [District Rule 2201] Federally Enforceable Through Title V Permit
12. Quench flowrate shall be operated at 145 to 185 gallons/minute. [District Rule 2201] Federally Enforceable Through Title V Permit
13. Particulate matter emissions shall not exceed 0.1 grain/dscf, 0.1 grain/dscf calculated to 12% CO2, nor 10 lb/hr. [District Rules 4201, 3.1 and 4301, 5.1 and 5.2.3] Federally Enforceable Through Title V Permit
14. Nitrogen oxide (NOx) emissions shall not exceed 140 lb/hr, calculated as NO2. [District Rules 4301, 5.2.2, 5.3, and 5.5 and 2520, 9.3.2] Federally Enforceable Through Title V Permit
15. Emissions from this unit shall not exceed any of the following limits: 0.0520 lb-SOx/MMBtu, 0.045 lb-PM10/MMBtu, or 0.008 lb-VOC/MMBtu. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
16. Except during startup and shutdown, emissions from this unit shall not exceed any of the following limits: 14 ppmvd NOx @ 3% O2 or 0.017 lb-NOx/MMBtu, or 50 ppmvd CO @ 3% O2 or 0.037 lb-CO/MMBtu. [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
17. During start-up and shutdown periods emissions from the steam generator shall not exceed either of the following limits: 0.1 lb-NOx/MMBtu nor 0.084 lb-CO/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit
18. Duration of startup and shutdown shall not exceed two hours each per occurrence. During startup 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 startup and shutdown periods. [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
19. Startup is defined as the period of time during which a unit is brought from a shutdown status to its operating temperature and pressure, including the time required by the unit's emission control system to reach full operation. Shutdown is defined as the period of time during which a unit is taken from an operational to a non-operational status by allowing it to cool down from its operating temperature to ambient temperature as the fuel supply to the unit is completely turned off. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
20. Source testing to measure SOx emissions from this unit while fired on natural gas shall be conducted at least once every twelve (12) months. [District Rule 4320] Federally Enforceable Through Title V Permit
21. 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 2520, 9.3.2, 4305, 4306, and 4320] 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
23. 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

CONDITIONS CONTINUE ON NEXT PAGE

24. NOx, and CO emissions shall be measured with source testing conducted by independent testing laboratory and shall be witnessed or authorized by the District [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

25. All required source testing shall conform to the compliance testing procedures described in District Rule 1081 (Amended December 16, 1993). [District Rule 1081] Federally Enforceable Through Title V Permit

26. Sampling facilities for source testing shall be provided in accordance with the provisions of rule 1081 (Source Sampling). [District Rule 1081] Federally Enforceable Through Title V Permit

27. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4306. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

28. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

29. 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

30. The following test methods shall be used: NOx (ppmv) - EPA Method 7E or ARB Method 100, NOx (lb/MMBtu) - EPA Method 19, CO (ppmv) - EPA Method 10 or 10B or ARB Method 100, stack gas oxygen - EPA Method 3 or 3Aor ARB Method 100, SOx (lb/MMBtu) - ARB Method 100 or EPA Method 6, 6C or fuel gas sulfur content analysis and EPA Method 19, fuel gas sulfur content - EPA Method 11 or 15, ASTM D3246 or double GC for H2S and mercaptans performed in a laboratory, fuel gas hhv - ASTM D1826 or D1945 in conjunction with ASTM D3588. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

31. 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

32. 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

33. 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

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

CONDITIONS CONTINUE ON NEXT PAGE

35. Emissions of sulfur compounds from this unit shall not exceed 200 lb/hr, calculated as SO2. Compliance with this requirement may be demonstrated by firing the unit only on PUC or FERC regulated natural gas or by testing the sulfur content of each fuel and determining the maximum hourly emissions of sulfur compounds by multiplying the sulfur content of each fuel in lb/MMBtu by the maximum heat input rating of the unit; or by source testing in combination with fuel analysis. [District Rules 2520, 9.3.2 and 4301, 5.2.1] Federally Enforceable Through Title V Permit

36. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, each fuel source shall be tested weekly for sulfur content and higher heating value. If compliance with the fuel sulfur content limit and sulfur emission limits has been demonstrated for 8 consecutive weeks for a fuel source, then the fuel testing frequency shall be semi-annually. If a semi-annual fuel content source test fails to show compliance, weekly testing shall resume. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

37. When complying with SOx emission limits by testing of stack emissions, testing shall be performed not less than once every 12 months using EPA Method 6 and EPA Method 6C; or ARB Method 1-100; or, for units using gaseous fuel scrubbed for sulfur pre-combustion, the sulfur content of the gaseous fuel being fired in the unit shall be determined using ASTM D 1072, D 3031, D 4084, D 3246 or a grab sample analysis by GC-FPD/TCD or double GC for H2S and mercaptans performed in the laboratory and EPA Method 19 to calculated emissions. Gaseous fuel fired units demonstrating compliance on two consecutive annual source tests shall be tested not less than once every thirty-six months, however annual source testing shall resume if any test fails to show compliance. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

38. If the unit is fired on noncertified gaseous fuel and compliance with SOx emission limits is achieved through fuel sulfur content limitations, then the sulfur content of the gaseous fuel being fired in the unit shall be determined using ASTM D 1072, D 3031, D 4084, D 3246 or grab sample analysis by GC-FPD/TCD or double GC for H2S and mercaptans performed in the laboratory. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

39. If fuel analysis is used to demonstrate compliance with the conditions of this permit, the fuel higher heating value for each fuel shall be certified by third party fuel supplier or determined by: D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District Rules 2520, 9.3.2, 4305, 4306, 4320, and 4351, 6.2.1] Federally Enforceable Through Title V Permit

40. Stack gas moisture content shall be determined using EPA Method 4. [District Rule 2201] Federally Enforceable Through Title V Permit

41. Natural gas sulfur content and higher heating value (hhv) shall be certified by a third party fuel supplier of each fuel source or natural gas shall be tested for sulfur content and higher heating value (hhv) monthly. Waste gas shall be tested for sulfur content and higher heating value (hhv) not less than monthly. [District Rule 2201] Federally Enforceable Through Title V Permit

42. Copies of all gas purchase contracts, supplier certifications, and test results to determine compliance with the conditions of this permit shall be maintained. The operator shall record daily amount and type(s) of fuel(s) combusted, fuel source, and all dates on which unit is fired on any noncertified fuel and record specific type of noncertified fuel used. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

43. Permittee shall record daily total gas consumption. [District Rules 1070 and 2520, 9.4.2] Federally Enforceable Through Title V Permit

44. Daily records of the tray packing flowrate and the quench flowrate shall be maintained, retained on the premises for a period of at least five years, and made available for District inspection upon request. [District Rules 1070 and 2520, 9.4.2] Federally Enforceable Through Title V Permit

45. Permittee shall measure and record the BTU content of the gas burned at the time of NOx source testing, except for natural gas purchased from a PUC regulated utility. [District Rules 2201 and 4801] Federally Enforceable Through Title V Permit

46. Permittee shall maintain records of higher heating value (hhv), in MMBtu/scf, for each gaseous fuel used in this operation. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

47. Permittee shall maintain with the permit a current listing of all TEOR and TVR systems providing vapor to this steam generator and shall make such listing readily available for District inspection upon request [District Rule 2201] Federally Enforceable Through Title V Permit

48. Permittee shall maintain daily records of volume of fuel gas burned, TEOR/TVR gas incinerated, and permit number(s) of systems providing gas for incineration. [District Rule 2201] Federally Enforceable Through Title V Permit

49. 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

50. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following requirements of SJVUAPCD Rules 4201 (Amended December 17, 1992), and 4301 (Amended December 17, 1992). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

51. Compliance with permit conditions in the Title V permit shall be deemed compliance with the requirements of County Rules 108 (Kings), 108.1 (Fresno, Merced, San Joaquin, Tulare, Kern, and Stanislaus), and 110 (Madera), 402 (Madera), 404 (Fresno, Kern, Tulare, Kings, Stanislaus, Merced, and San Joaquin), 405 (Madera), 408 (Fresno, Kern, Tulare, Kings, Stanislaus, Merced, and San Joaquin), 407.2 (Kern, Tulare, Kings, Stanislaus, and San Joaquin), and 408.2 (Merced). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

52. The requirements of 40 CFR 72.6(b) and 40 CFR 60.40c do not apply to this source. A permit shield is granted from this requirement. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: C-311-40-21 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: CHEVRON USA INC
MAILING ADDRESS: PO BOX 1392
BAKERSFIELD, CA 93302

LOCATION: HEAVY OIL PRODUCTION
FRESNO COUNTY, CA

SECTION: 25 **TOWNSHIP:** 20S **RANGE:** 14E

EQUIPMENT DESCRIPTION:
MODIFICATION OF 58.5 MMBTU/HR SG 25-19 STRUTHERS THERMOFLOOD STEAM GENERATOR, MODEL OH-50-ND-16XAM, WITH NORTH AMERICAN MODEL GLE BURNER AND FLUE GAS RECIRCULATION (FGR) SYSTEM SERVED BY THE 25D NEPTUNE AIRPOL CAUSTIC SCRUBBER WHEN FIRING WELL CASING AND/OR TANK VAPOR RECOVERY GAS: REVISE HEAT INPUT RATING FROM 58.5 MMBTU/HR TO 62.5 MMBTU/HR, LOWER NOX LIMIT TO 14 PPMV @ 3% O2

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. ATC shall be implemented concurrently with or subsequent to ATC C-311-40-18. [District Rule 2201] Federally Enforceable Through Title V Permit
3. {1898} The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]
4. This unit shall be fueled with natural gas, LPG, or a blend of natural gas and well casing and tank vapor recovery (TVR) gas. [District Rule 2201] Federally Enforceable Through Title V Permit
5. Fuel consumption shall not exceed 434,700 MMBtu/year. [District Rule 2201] Federally Enforceable Through Title V Permit
6. 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

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (559) 230-5950 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

Central Regional Office • 1990 E. Gettysburg Ave. • Fresno, CA 93726 • (559) 230-5900 • Fax (559) 230-6061

7. The permittee shall maintain a non-resettable, totalizing mass or volumetric flow meter in each fuel line to the steam generator. [District Rule 2201] Federally Enforceable Through Title V Permit

8. Fuel gas sulfur content shall not exceed 1 gr S/100 scf unless SOx is reduced by 95% or to 9 ppmv SOx @ 3% O2 in exhaust with scrubber. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit

9. Whenever the unit is switched to scrubbed operation, compliance source testing for SOx shall be conducted within 60 days of initial scrubbing date unless source testing under scrubbed operation has occurred within the previous 12 months. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit

10. PUC quality gas shall be combusted in this unit whenever the scrubber is not being operated. [District Rule 2201] Federally Enforceable Through Title V Permit

11. Particulate matter emissions shall not exceed 0.1 grain/dscf, 0.1 grain/dscf calculated to 12% CO2, nor 10 lb/hr. [District Rules 4201, 3.1 and 4301, 5.1 and 5.2.3] Federally Enforceable Through Title V Permit

12. Nitrogen oxide (NOx) emissions shall not exceed 140 lb/hr, calculated as NO2. [District Rules 4301, 5.2.2, 5.3, and 5.5 and 2520, 9.3.2] Federally Enforceable Through Title V Permit

13. Emissions from this unit shall not exceed any of the following limits: 0.052 lb-SOx/MMBtu, 0.045 lb-PM10/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit

14. Except during startup and shutdown, emissions from this unit shall not exceed any of the following limits: 14 ppmvd NOx @ 3% O2 or 0.017 lb-NOx/MMBtu, or 50 ppmvd CO @ 3% O2 or 0.037 lb-CO/MMBtu. [District NSR Rule and District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

15. During start-up and shutdown periods emissions from the steam generator shall not exceed either of the following limits: 0.1 lb-NOx/MMBtu nor 0.084 lb-CO/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit

16. Duration of startup and shutdown shall not exceed two hours each per occurrence. During startup 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 startup and shutdown periods. [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

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

18. Source testing to measure SOx emissions from this unit while fired on natural gas shall be conducted at least once every twelve (12) months. [District Rule 4320] Federally Enforceable Through Title V Permit

19. 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 2520, 9.3.2, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

20. 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

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. All required source testing shall conform to the compliance testing procedures described in District Rule 1081 (Amended December 16, 1993). [District Rule 1081] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

23. 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

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. 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

26. The following test methods shall be used: NOx (ppmv) - EPA Method 7E or ARB Method 100, NOx (lb/MMBtu) - EPA Method 19, CO (ppmv) - EPA Method 10 or 10B or ARB Method 100, stack gas oxygen - EPA Method 3 or 3Aor ARB Method 100, SOx (lb/MMBtu) - ARB Method 100 or EPA Method 6, 6C or fuel gas sulfur content analysis and EPA Method 19, fuel gas sulfur content - EPA Method 11 or 15, ASTM D3246 or double GC for H2S and mercaptans performed in a laboratory, fuel gas hhv - ASTM D1826 or D1945 in conjunction with ASTM D3588. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

27. 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

28. 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

29. 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

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

31. Emissions of sulfur compounds from this unit shall not exceed 200 lb/hr, calculated as SO2. Compliance with this requirement may be demonstrated by firing the unit only on PUC or FERC regulated natural gas or by testing the sulfur content of each fuel and determining the maximum hourly emissions of sulfur compounds by multiplying the sulfur content of each fuel in lb/MMBtu by the maximum heat input rating of the unit; or by source testing in combination with fuel analysis. [District Rules 2520, 9.3.2 and 4301, 5.2.1] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

32. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, each fuel source shall be tested weekly for sulfur content and higher heating value. If compliance with the fuel sulfur content limit and sulfur emission limits has been demonstrated for 8 consecutive weeks for a fuel source, then the fuel testing frequency shall be semi-annually. If a semi-annual fuel content source test fails to show compliance, weekly testing shall resume. [District Rules 2201 and 2520, 9.3.2] Federally Enforceable Through Title V Permit

33. When complying with SOx emission limits by testing of stack emissions, testing shall be performed not less than once every 12 months using EPA Method 6 and EPA Method 6C; or ARB Method 1-100; or, for units using gaseous fuel scrubbed for sulfur pre-combustion, the sulfur content of the gaseous fuel being fired in the unit shall be determined using ASTM D 1072, D 3031, D 4084, D 3246 or a grab sample analysis by GC-FPD/TCD or double GC for H2S and mercaptans performed in the laboratory and EPA Method 19 to calculated emissions. Gaseous fuel fired units demonstrating compliance on two consecutive annual source tests shall be tested not less than once every thirty-six months, however annual source testing shall resume if any test fails to show compliance. [District Rules 2201 and 2520, 9.3.2] Federally Enforceable Through Title V Permit

34. If the unit is fired on noncertified gaseous fuel and compliance with SOx emission limits is achieved through fuel sulfur content limitations, then the sulfur content of the gaseous fuel being fired in the unit shall be determined using ASTM D 1072, D 3031, D 4084, D 3246 or grab sample analysis by GC-FPD/TCD or double GC for H2S and mercaptans performed in the laboratory. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

35. If fuel analysis is used to demonstrate compliance with the conditions of this permit, the fuel higher heating value for each fuel shall be certified by third party fuel supplier or determined by: D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District Rules 2520, 9.3.2, 4305, 4306, 4320, and 4351, 6.2.1] Federally Enforceable Through Title V Permit

36. Copies of all gas purchase contracts, supplier certifications, and test results (including fuel hhv) to determine compliance with the conditions of this permit shall be maintained. The operator shall record daily amount and type(s) of fuel(s) combusted, fuel source, and all dates on which unit is fired on any noncertified fuel and record specific type of noncertified fuel used. [District Rule 2520, 9.3.2 and District Rule 2201] Federally Enforceable Through Title V Permit

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

38. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following requirements of SJVUAPCD Rules 4201 (Amended December 17, 1992), and 4301 (Amended December 17, 1992). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

39. Compliance with permit conditions in the Title V permit shall be deemed compliance with the requirements of County Rules 108 (Kings), 108.1 (Fresno, Merced, San Joaquin, Tulare, Kern, and Stanislaus), and 110 (Madera), 402 (Madera), 404 (Fresno, Kern, Tulare, Kings, Stanislaus, Merced, and San Joaquin), 405 (Madera), 408 (Fresno, Kern, Tulare, Kings, Stanislaus, Merced, and San Joaquin), 407.2 (Kern, Tulare, Kings, Stanislaus, and San Joaquin), and 408.2 (Merced). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

40. {1669} This unit commenced construction, modification, or reconstruction prior to June 19, 1984. This unit has not been used to produce electricity for sale in 1985 or on or after November 15, 1990. Therefore, the requirements of 40 CFR 72.6(b) and 40 CFR 60.40c do not apply to this source. A permit shield is granted from this requirement. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: C-311-41-18 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: CHEVRON USA INC
MAILING ADDRESS: PO BOX 1392
BAKERSFIELD, CA 93302

LOCATION: HEAVY OIL PRODUCTION
FRESNO COUNTY, CA

SECTION: 25 **TOWNSHIP:** 20S **RANGE:** 14E

EQUIPMENT DESCRIPTION:
MODIFICATION OF 58.5 MMBTU/HR SG 25-20 STRUTHERS THERMOFLOOD STEAM GENERATOR, MODEL OH-50-ND-16XAM, WITH NORTH AMERICAN MODEL GLE BURNER AND FLUE GAS RECIRCULATION (FGR) SYSTEM, SERVED BY THE 25 D NEPTUNE AIRPOL CAUSTIC SCRUBBER WHEN FIRING WELL CASING AND/OR TANK VAPOR RECOVERY GAS: REVISE HEAT INPUT RATING FROM 58.5 MMBTU/HR TO 62.5 MMBTU/HR, LOWER NOX LIMIT TO 14 PPMV @ 3% O2

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. ATC shall be implemented concurrently with or subsequent to ATC C-311-41-15. [District Rule 2201] Federally Enforceable Through Title V Permit
3. {1898} The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]
4. Total LPG, casing gas, waste gas, and natural gas consumption shall not exceed 435,000 MMBtu/year. [District Rule 2201] Federally Enforceable Through Title V Permit
5. Fuel gas sulfur content shall not exceed 1 gr S/100 scf unless SOx is reduced by 95% or to 9 ppmv SOx @ 3% O2 in exhaust with scrubber. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
6. Whenever the unit is switched to scrubbed operation, compliance source testing for SOx shall be conducted within 60 days of initial scrubbing date unless source testing under scrubbed operation has occurred within the previous 12 months. [District Rules 2201 and 4320]

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (559) 230-5950 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

7. PUC quality gas shall be combusted in this unit whenever the scrubber is not being operated. [District Rule 2201]
8. The permittee shall maintain a non-resettable, totalizing mass or volumetric flow meter in each fuel line to the steam generator. [District Rule 2201]
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. Nitrogen oxide (NOx) emissions shall not exceed 140 lb/hr, calculated as NO2. [District Rules 4301, 5.2.2, 5.3, and 5.5 and 2520, 9.3.2] Federally Enforceable Through Title V Permit
11. Emissions from this unit shall not exceed any of the following limits: 0.052 lb-SOx/MMBtu, 0.044 lb-PM10/MMBtu, or 0.0085 lb-VOC/MMBtu. [District Rules 2201 and 4320]
12. Except during startup and shutdown, emissions from this unit shall not exceed any of the following limits: 14 ppmvd NOx @ 3% O2 or 0.017 lb-NOx/MMBtu, or 50 ppmvd CO @ 3% O2 or 0.037 lb-CO/MMBtu. [District NSR Rule and District Rules 4305, 4306, and 4320]
13. During start-up and shutdown periods emissions from the steam generator shall not exceed either of the following limits: 0.1 lb-NOx/MMBtu nor 0.084 lb-CO/MMBtu. [District Rule 2201]
14. Duration of startup and shutdown shall not exceed two hours each per occurrence. During startup 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 startup and shutdown periods. [District Rules 4305, 4306, and 4320]
15. Startup is defined as the period of time during which a unit is brought from a shutdown status to its operating temperature and pressure, including the time required by the unit's emission control system to reach full operation. Shutdown is defined as the period of time during which a unit is taken from an operational to a non-operational status by allowing it to cool down from its operating temperature to ambient temperature as the fuel supply to the unit is completely turned off. [District Rules 2201, 4305, 4306, and 4320]
16. Source testing to measure SOx emissions from this unit while fired on natural gas shall be conducted at least once every twelve (12) months. [District Rule 4320]
17. 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 2520, 9.3.2, 4305, 4306, and 4320]
18. NOx, and CO emissions shall be measured with source testing conducted by independent testing laboratory and shall be witnessed or authorized by the District. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
19. 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
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]
21. All required source testing shall conform to the compliance testing procedures described in District Rule 1081 (Amended December 16, 1993). [District Rule 1081] Federally Enforceable Through Title V Permit
22. 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]
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]

CONDITIONS CONTINUE ON NEXT PAGE

24. 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

25. The following test methods shall be used: NOx (ppmv) - EPA Method 7E or ARB Method 100, NOx (lb/MMBtu) - EPA Method 19, CO (ppmv) - EPA Method 10 or 10B or ARB Method 100, stack gas oxygen - EPA Method 3 or 3Aor ARB Method 100, SOx (lb/MMBtu) - ARB Method 100 or EPA Method 6, 6C or fuel gas sulfur content analysis and EPA Method 19, fuel gas sulfur content - EPA Method 11 or 15, ASTM D3246 or double GC for H2S and mercaptans performed in a laboratory, fuel gas hhv - ASTM D1826 or D1945 in conjunction with ASTM D3588. [District Rules 4305, 4306 and 4320]

26. The permittee shall monitor and record the stack concentration of NOx, CO, and O2 at least once every month (in which a source test is not performed) using a portable 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]

27. 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]

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]

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

30. Particulate matter emissions shall not exceed 0.1 grain/dscf, 0.1 grain/dscf calculated to 12% CO2, nor 10 lb/hr. [District Rules 4201, 3.1 and 4301, 5.1 and 5.2.3] Federally Enforceable Through Title V Permit

31. Emissions of sulfur compounds from this unit shall not exceed 200 lb/hr, calculated as SO2. Compliance with this requirement may be demonstrated by firing the unit only on PUC or FERC regulated natural gas or by testing the sulfur content of each fuel and determining the maximum hourly emissions of sulfur compounds by multiplying the sulfur content of each fuel in lb/MMBtu by the maximum heat input rating of the unit; or by source testing in combination with fuel analysis. [District Rules 2520, 9.3.2 and 4301, 5.2.1] Federally Enforceable Through Title V Permit

32. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, each fuel source shall be tested weekly for sulfur content and higher heating value. If compliance with the fuel sulfur content limit and sulfur emission limits has been demonstrated for 8 consecutive weeks for a fuel source, then the fuel testing frequency shall be semi-annually. If a semi-annual fuel content source test fails to show compliance, weekly testing shall resume. [District Rules 2201 and 2520, 9.3.2] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

33. When complying with SOx emission limits by testing of stack emissions, testing shall be performed not less than once every 12 months using EPA Method 6 and EPA Method 6C; or ARB Method 1-100; or, for units using gaseous fuel scrubbed for sulfur pre-combustion, the sulfur content of the gaseous fuel being fired in the unit shall be determined using ASTM D 1072, D 3031, D 4084, D 3246 or a grab sample analysis by GC-FPD/TCD or double GC for H2S and mercaptans performed in the laboratory and EPA Method 19 to calculated emissions. Gaseous fuel fired units demonstrating compliance on two consecutive annual source tests shall be tested not less than once every thirty-six months, however annual source testing shall resume if any test fails to show compliance. [District Rules 2201 and 2520, 9.3.2] Federally Enforceable Through Title V Permit

34. If the unit is fired on noncertified gaseous fuel and compliance with SOx emission limits is achieved through fuel sulfur content limitations, then the sulfur content of the gaseous fuel being fired in the unit shall be determined using ASTM D 1072, D 3031, D 4084, D 3246 or grab sample analysis by GC-FPD/TCD or double GC for H2S and mercaptans performed in the laboratory. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

35. If fuel analysis is used to demonstrate compliance with the conditions of this permit, the fuel higher heating value for each fuel shall be certified by third party fuel supplier or determined by: D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District Rules 2520, 9.3.2, 4305, 4306, 4320, and 4351, 6.2.1]

36. Copies of all gas purchase contracts, supplier certifications, and test results (including fuel hhv) to determine compliance with the conditions of this permit shall be maintained. The operator shall record daily amount and type(s) of fuel(s) combusted, fuel source, and all dates on which unit is fired on any noncertified fuel and record specific type of noncertified fuel used. [District Rule 2520, 9.3.2 and District Rule 2201] Federally Enforceable Through Title V Permit

37. Permittee shall record natural gas, propane, casing gas and waste gas consumption. [District Rules 1070 and 2520, 9.3.2] Federally Enforceable Through Title V Permit

38. Permittee shall measure and record the BTU content of the gas burned at the time of NOx testing, except for natural gas purchased from a PUC regulated utility. [District Rules 2201 and 4801] Federally Enforceable Through Title V Permit

39. Permittee shall maintain with the permit a current listing of all TEOR and TVR systems providing vapor to this steam generator and shall make such listing readily available for District inspection upon request. [District Rule 2201] Federally Enforceable Through Title V Permit

40. Permittee shall maintain daily records of volume of fuel gas burned, TEOR/TVR gas incinerated, and permit number(s) of systems providing gas for incineration. [District Rule 2201] Federally Enforceable Through Title V Permit

41. 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]

42. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following requirements of SJVUAPCD Rules 4201 (Amended December 17, 1992), and 4301 (Amended December 17, 1992). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

43. Compliance with permit conditions in the Title V permit shall be deemed compliance with the requirements of County Rules 108 (Kings), 108.1 (Fresno, Merced, San Joaquin, Tulare, Kern, and Stanislaus), and 110 (Madera), 402 (Madera), 404 (Fresno, Kern, Tulare, Kings, Stanislaus, Merced, and San Joaquin), 405 (Madera), 408 (Fresno, Kern, Tulare, Kings, Stanislaus, Merced, and San Joaquin), 407.2 (Kern, Tulare, Kings, Stanislaus, and San Joaquin), and 408.2 (Merced). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

44. The requirements of 40 CFR 72.6(b) and 40 CFR 60.40c do not apply to this source. A permit shield is granted from this requirement. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: C-311-42-20 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: CHEVRON USA INC
MAILING ADDRESS: PO BOX 1392
BAKERSFIELD, CA 93302

LOCATION: HEAVY OIL PRODUCTION
FRESNO COUNTY, CA

SECTION: 25 **TOWNSHIP:** 20S **RANGE:** 14E

EQUIPMENT DESCRIPTION:
MODIFICATION OF 58.5 MMBTU/HR SG 25-21 STRUTHERS THERMOFLOOD STEAM GENERATOR, MODEL OH-50-ND-16XAM, WITH NORTH AMERICAN MODEL GLE BURNER AND FLUE GAS RECIRCULATION (FGR) SYSTEM: REMOVE CONDITION LIMITING DAILY FUEL CONSUMPTION AND REVISE HEAT INPUT RATING FROM 58.5 MMBTU/HR TO 62.5 MMBTU/HR, LOWER NOX LIMIT TO 14 PPMV @ 3% O2

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. ATC shall be implemented concurrently with or subsequent to ATC C-311-42-18. [District Rule 2201] Federally Enforceable Through Title V Permit
3. {1898} The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]
4. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
5. 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
6. Particulate matter emissions shall not exceed 0.1 grain/dscf, 0.1 grain/dscf calculated to 12% CO2, nor 10 lb/hr. [District Rules 4201, 3.1 and 4301, 5.1 and 5.2.3] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (559) 230-5950 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

Central Regional Office ... 1990 E. Gettysburg Ave. ... Fresno, CA 93726 ... (559) 230-5900 ... Fax (559) 230-6061

7. This unit shall be fired exclusively on PUC-quality natural gas or LPG. [District Rule 2201] Federally Enforceable Through Title V Permit
8. Fuel gas shall not contain more than 5 grains of total sulfur per 100 standard cubic feet. [District Rule 4320]
9. Fuel gas sulfur content shall not exceed 1 gr S/100 scf unless SOx is reduced by 95% or to 9 ppmv SOx @ 3% O2 in exhaust with scrubber. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Total fuel consumption shall not exceed 434,700 MMBtu/year. [District Rule 2201] Federally Enforceable Through Title V Permit
11. The permittee shall maintain a non-resettable, totalizing mass or volumetric flow meter in each fuel line to the steam generator. [District Rule 2201] Federally Enforceable Through Title V Permit
12. Emissions from the steam generator shall not exceed any of the following limits: 0.0143 lb-SOx/MMBtu, 0.045 lb-PM10/MMBtu, or 0.003 lb-VOC/MMBtu. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
13. Except during start-up and shutdown periods emissions from the steam generator shall not exceed any of the following limits: 14 ppmvd NOx @ 3% O2 or 0.017 lb-NOx/MMBtu or 50 ppmvd CO @ 3% O2 or 0.037 lb-CO/MMBtu. [District Rule 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
14. During start-up and shutdown periods emissions from the steam generator shall not exceed either of the following limits: 0.1 lb-NOx/MMBtu or 0.084 lb-CO/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit
15. Maximum emissions from the steam generator, including start-up and shutdown, shall not exceed any of the following limits: 50.5 lb-NOx/day or 7390 lb-NOx/yr. [District Rule 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
16. 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 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
17. Start-up is defined as the period of time during which a unit is brought from a shutdown status to its operating temperature and pressure, including the time required by the unit's emission control system to reach full operation. Shutdown is defined as the period of time during which a unit is taken from an operational to a non-operational status by allowing it to cool down from its operating temperature to ambient temperature as the fuel supply to the unit is completely turned off. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
18. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, each fuel source shall be tested weekly for sulfur content and higher heating value. If compliance with the fuel sulfur content limit and sulfur emission limits has been demonstrated for 8 consecutive weeks for a fuel source, then the fuel testing frequency shall be semi-annually. If a semi-annual fuel content source test fails to show compliance, weekly testing shall resume. [District Rules 2520, 9.3.2 and 4320] Federally Enforceable Through Title V Permit
19. When complying with SOx emission limits by testing of stack emissions, testing shall be performed not less than once every 12 months using EPA Method 6 and EPA Method 6C ; or ARB Method 100; or, for units using gaseous fuel scrubbed for sulfur pre-combustion, the sulfur content of the gaseous fuel being fired in the unit shall be determined using ASTM D 1072, D 3031, D 4084, D 3246 or a grab sample analysis by GC-FPD/TCD or double GC for H2S and mercaptans performed in the laboratory and EPA Method 19 to calculated emissions. Gaseous fuel fired units demonstrating compliance on two consecutive annual source tests shall be tested not less than once every thirty-six months, however annual source testing shall resume if any test fails to show compliance. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
20. If the unit is fired on noncertified gaseous fuel and compliance with SOx emission limits is achieved through fuel sulfur content limitations, then the sulfur content of the gaseous fuel being fired in the unit shall be determined using ASTM D 1072, D 3031, D 4084, D 3246 or grab sample analysis by GC-FPD/TCD or double GC for H2S and mercaptans performed in the laboratory. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
21. Operator shall provide an annual fuel analysis to the District. [District Rule 4320]

CONDITIONS CONTINUE ON NEXT PAGE

22. If fuel analysis is used to demonstrate compliance with the conditions of this permit, the fuel higher heating value for each fuel shall be certified by third party fuel supplier or determined by: D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District Rule 2520, 9.3.2; 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

23. 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

24. 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

25. The following test methods shall be used: NOx (ppmv) - EPA Method 7E or ARB Method 100, NOx (lb/MMBtu) - EPA Method 19, CO (ppmv) - EPA Method 10 or 10B or ARB Method 100, Stack Gas Oxygen - EPA Method 3 or 3A or ARB Method 100, Stack Gas Velocity (ft/min) - EPA Method 2, Stack Gas Moisture Content (%) - EPA Method 4, SOx (lb/MMBtu) - ARB Method 100 or EPA Method 6, 6C or fuel gas sulfur content analysis and EPA Method 19, Fuel Gas Sulfur Content - EPA Method 11 or 15, ASTM D3246 or double GC for H2S and mercaptans performed in a laboratory, fuel gas hhv - ASTM D1826 or D1945 in conjunction with ASTM D3588. [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. 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

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

29. 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

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

CONDITIONS CONTINUE ON NEXT PAGE

31. 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

32. 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

33. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

34. Permittee shall maintain records of higher heating value (hhv), in MMBtu/scf, for each gaseous fuel used in this operation. [District Rule 2201] Federally Enforceable Through Title V Permit

35. Copies of all , gas purchase contracts, supplier certifications, and test results to determine compliance with the conditions of this permit shall be maintained. The operator shall record daily amount and type(s) of fuel(s) combusted, fuel source, and all dates on which unit is fired on any noncertified fuel and record specific type of noncertified fuel used. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

36. 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

37. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following requirements: SJVUAPCD Rules 4201 (Amended December 17, 1992), and 4301 (Amended December 17, 1992). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

38. Compliance with permit conditions in the Title V permit shall be deemed compliance with the requirements of County Rules 108 (Kings), 108.1 (Fresno, Merced, San Joaquin, Tulare, Kern, and Stanislaus), and 110 (Madera), 402 (Madera), 404 (Fresno, Kern, Tulare, Kings, Stanislaus, Merced, and San Joaquin), 405 (Madera), 408 (Fresno, Kern, Tulare, Kings, Stanislaus, Merced, and San Joaquin), 407.2 (Kern, Tulare, Kings, Stanislaus, and San Joaquin), and 408.2 (Merced). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

39. The requirements of 40 CFR 72.6(b) and 40 CFR 60.40c do not apply to this source. A permit shield is granted from this requirement. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: C-311-43-18 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: CHEVRON USA INC
MAILING ADDRESS: PO BOX 1392
BAKERSFIELD, CA 93302

LOCATION: HEAVY OIL PRODUCTION
FRESNO COUNTY, CA

SECTION: 25 **TOWNSHIP:** 20S **RANGE:** 14E

EQUIPMENT DESCRIPTION:
MODIFICATION OF 58.5 MMBTU/HR SG 25-22 STRUTHERS THERMOFLOOD STEAM GENERATOR, MODEL OH-50-ND-16AXM, WITH NORTH AMERICAN MODEL GLE BURNER AND FLUE GAS RECIRCULATION (FGR) SYSTEM: REMOVE CONDITION LIMITING DAILY FUEL CONSUMPTION AND REVISE HEAT INPUT RATING FROM 58.5 MMBTU/HR TO 62.5 MMBTU/HR, LOWER NOX LIMIT TO 14 PPMV @ 3% O2

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. ATC shall be implemented concurrently with or subsequent to ATC C-311-43-16. [District Rule 2201] Federally Enforceable Through Title V Permit
3. {1898} The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]
4. Particulate matter emissions shall not exceed 0.1 grain/dscf, 0.1 grain/dscf calculated to 12% CO2, nor 10 lb/hr. [District Rules 4201, 3.1 and 4301, 5.1 and 5.2.3] Federally Enforceable Through Title V Permit
5. This unit shall be fired exclusively on PUC-quality natural gas or LPG. [District Rule 2201] Federally Enforceable Through Title V Permit
6. Fuel gas shall not contain more than 5 grains of total sulfur per 100 standard cubic feet. [District Rule 4320]
7. Fuel gas sulfur content shall not exceed 1 gr S/100 scf unless SOx is reduced by 95% or to 9 ppmv SOx @ 3% O2 in exhaust with scrubber. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (559) 230-5950 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

8. Total fuel consumption shall not exceed 434,700 MMBtu/year. [District Rule 2201] Federally Enforceable Through Title V Permit

9. The permittee shall maintain a non-resettable, totalizing mass or volumetric flow meter in each fuel line to the steam generator. [District Rule 2201] Federally Enforceable Through Title V Permit

10. Emissions of sulfur compounds from this unit shall not exceed 200 lb/hr, calculated as SO2. Compliance with this requirement may be demonstrated by firing the unit only on PUC or FERC regulated natural gas or by testing the sulfur content of each fuel and determining the maximum hourly emissions of sulfur compounds by multiplying the sulfur content of each fuel in lb/MMBtu by the maximum heat input rating of the unit; or by source testing in combination with fuel analysis. [District Rules 2520, 9.4.2 and 4301, 5.2.1] Federally Enforceable Through Title V Permit

11. Emissions from the steam generator shall not exceed any of the following limits: 0.0143 lb-SOx/MMBtu, 0.045 lb-PM10/MMBtu, or 0.003 lb-VOC/MMBtu. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit

12. Except during start-up and shutdown periods emissions from the steam generator shall not exceed any of the following limits: 14 ppmvd NOx @ 3% O2 or 0.017 lb-NOx/MMBtu or 50 ppmvd CO @ 3% O2 or 0.037 lb-CO/MMBtu. [District Rule 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

13. During start-up and shutdown periods emissions from the steam generator shall not exceed either of the following limits: 0.1 lb-NOx/MMBtu or 0.084 lb-CO/MMBtu. [District Rule 2201] 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: 50.5 lb-NOx/day, 7,825 lb-NOx/yr, 51.9 lb-CO/day, and 16,084 lb-CO/yr. [District Rule 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

15. 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 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

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

17. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, each fuel source shall be tested weekly for sulfur content and higher heating value. If compliance with the fuel sulfur content limit and sulfur emission limits has been demonstrated for 8 consecutive weeks for a fuel source, then the fuel testing frequency shall be semi-annually. If a semi-annual fuel content source test fails to show compliance, weekly testing shall resume. [District Rules 2520, 9.3.2 and 4320] Federally Enforceable Through Title V Permit

18. When complying with SOx emission limits by testing of stack emissions, testing shall be performed not less than once every 12 months using EPA Method 6 and EPA Method 6C ; or ARB Method 100; or, for units using gaseous fuel scrubbed for sulfur pre-combustion, the sulfur content of the gaseous fuel being fired in the unit shall be determined using ASTM D 1072, D 3246, D 4084, or a grab sample analysis by GC-FPD/TCD or double GC for H2S and mercaptans performed in the laboratory and EPA Method 19 to calculated emissions. Gaseous fuel fired units demonstrating compliance on two consecutive annual source tests shall be tested not less than once every thirty-six months, however annual source testing shall resume if any test fails to show compliance. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

19. If the unit is fired on noncertified gaseous fuel and compliance with SOx emission limits is achieved through fuel sulfur content limitations, then the sulfur content of the gaseous fuel being fired in the unit shall be determined using ASTM D 1072, D 3246, D 4084, or grab sample analysis by GC-FPD/TCD or double GC for H2S and mercaptans performed in the laboratory. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

20. Operator shall provide an annual fuel analysis to the District. [District Rule 4320] Federally Enforceable Through Title V Permit

21. If fuel analysis is used to demonstrate compliance with the conditions of this permit, the fuel higher heating value for each fuel shall be certified by third party fuel supplier or determined by: D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District Rule 2520, 9.3.2; 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

22. 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

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. The following test methods shall be used: NOx (ppmv) - EPA Method 7E or ARB Method 100, NOx (lb/MMBtu) - EPA Method 19, CO (ppmv) - EPA Method 10 or 10B or ARB Method 100, Stack Gas Oxygen - EPA Method 3 or 3A or ARB Method 100, Stack Gas Velocity (ft/min) - EPA Method 2, Stack Gas Moisture Content (%) - EPA Method 4, SOx (lb/MMBtu) - ARB Method 100 or EPA Method 6, 6C or fuel gas sulfur content analysis and EPA Method 19, Fuel Gas Sulfur Content - EPA Method 11 or 15, ASTM D3246 or double GC for H2S and mercaptans performed in a laboratory, fuel gas hhv - ASTM D1826 or D1945 in conjunction with ASTM D3588. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

25. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit

26. The permittee shall monitor and record the stack concentration of NOx, CO, and O2 at least once every month (in which a source test is not performed) using a portable 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 NOx or CO concentrations corrected to 3% O2, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4305, 4306, and 4320] 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 NOx, CO, and O2 measurements, (2) the O2 concentration in percent and the measured NOx and CO concentrations corrected to 3% O2, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

30. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. 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

31. 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

32. 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

33. Permittee shall maintain records of higher heating value (hhv), in MMBtu/scf, for each gaseous fuel used in this operation. [District Rule 2201] Federally Enforceable Through Title V Permit

34. Copies of all , gas purchase contracts, supplier certifications, and test results to determine compliance with the conditions of this permit shall be maintained. The operator shall record daily amount and type(s) of fuel(s) combusted, fuel source, and all dates on which unit is fired on any noncertified fuel and record specific type of noncertified fuel used. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

35. 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

36. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following requirements: SJVUAPCD Rules 4201 (Amended December 17, 1992), and 4301 (Amended December 17, 1992). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

37. Compliance with permit conditions in the Title V permit shall be deemed compliance with the requirements of County Rules 108 (Kings), 108.1 (Fresno, Merced, San Joaquin, Tulare, Kern, and Stanislaus), and 110 (Madera), 402 (Madera), 404 (Fresno, Kern, Tulare, Kings, Stanislaus, Merced, and San Joaquin), 405 (Madera), 408 (Fresno, Kern, Tulare, Kings, Stanislaus, Merced, and San Joaquin), 407.2 (Kern, Tulare, Kings, Stanislaus, and San Joaquin), and 408.2 (Merced). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

38. The requirements of 40 CFR 72.6(b) and 40 CFR 60.40c do not apply to this source. A permit shield is granted from this requirement. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: C-311-45-18 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: CHEVRON USA INC
MAILING ADDRESS: PO BOX 1392
BAKERSFIELD, CA 93302

LOCATION: HEAVY OIL PRODUCTION
FRESNO COUNTY, CA

SECTION: 25 **TOWNSHIP:** 20S **RANGE:** 14E

EQUIPMENT DESCRIPTION:
MODIFICATION OF 58.5 MMBTU/HR SG 25-24 STRUTHERS THERMOFLOOD STEAM GENERATOR, MODEL OH-50-ND-16AXM, WITH NORTH AMERICAN MODEL GLE BURNER AND FLUE GAS RECIRCULATION (FGR) SYSTEM: REMOVE CONDITION LIMITING DAILY FUEL CONSUMPTION AND REVISE HEAT INPUT RATING FROM 58.5 MMBTU/HR TO 62.5 MMBTU/HR, LOWER NOX LIMIT TO 14 PPMV @ 3% O2

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. ATC shall be implemented concurrently with or subsequent to ATC C-311-45-15. [District Rule 2201] Federally Enforceable Through Title V Permit
3. {1898} The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]
4. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
5. 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
6. Particulate matter emissions shall not exceed 0.1 grain/dscf, 0.1 grain/dscf calculated to 12% CO2, nor 10 lb/hr. [District Rules 4201, 3.1 and 4301, 5.1 and 5.2.3] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (559) 230-5950 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

Central Regional Office • 1990 [illegible] no, CA 93726 • (559) 230-5000 • Fax (559) 230-6061

7. This unit shall be fired exclusively on PUC-quality natural gas or LPG. [District Rule 2201] Federally Enforceable Through Title V Permit
8. Fuel gas shall not contain more than 5 grains of total sulfur per 100 standard cubic feet. [District Rule 4320]
9. Fuel gas sulfur content shall not exceed 1 gr S/100 scf unless SOx is reduced by 95% or to 9 ppmv SOx @ 3% O2 in exhaust with scrubber. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Total fuel consumption shall not exceed 434,700 MMBtu/year. [District Rule 2201] Federally Enforceable Through Title V Permit
11. The permittee shall maintain a non-resettable, totalizing mass or volumetric flow meter in each fuel line to the steam generator. [District Rule 2201] Federally Enforceable Through Title V Permit
12. Emissions from the steam generator shall not exceed any of the following limits: 0.0143 lb-SOx/MMBtu, 0.045 lb-PM10/MMBtu, or 0.003 lb-VOC/MMBtu. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
13. Except during start-up and shutdown periods emissions from the steam generator shall not exceed any of the following limits: 14 ppmvd NOx @ 3% O2 or 0.017 lb-NOx/MMBtu or 50 ppmvd CO @ 3% O2 or 0.037 lb-CO/MMBtu. [District Rule 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
14. During start-up and shutdown periods emissions from the steam generator shall not exceed either of the following limits: 0.1 lb-NOx/MMBtu or 0.084 lb-CO/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit
15. Maximum emissions from the steam generator, including start-up and shutdown, shall not exceed any of the following limits: 50.5 lb-NOx/day, 7,825 lb-NOx/yr, 51.9 lb-CO/day, and 16,084 lb-CO/yr. [District Rule 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
16. 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 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
17. Start-up is defined as the period of time during which a unit is brought from a shutdown status to its operating temperature and pressure, including the time required by the unit's emission control system to reach full operation. Shutdown is defined as the period of time during which a unit is taken from an operational to a non-operational status by allowing it to cool down from its operating temperature to ambient temperature as the fuel supply to the unit is completely turned off. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
18. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, each fuel source shall be tested weekly for sulfur content and higher heating value. If compliance with the fuel sulfur content limit and sulfur emission limits has been demonstrated for 8 consecutive weeks for a fuel source, then the fuel testing frequency shall be semi-annually. If a semi-annual fuel content source test fails to show compliance, weekly testing shall resume. [District Rules 2520, 9.3.2 and 4320] Federally Enforceable Through Title V Permit
19. When complying with SOx emission limits by testing of stack emissions, testing shall be performed not less than once every 12 months using EPA Method 6 and EPA Method 6C ; or ARB Method 100; or, for units using gaseous fuel scrubbed for sulfur pre-combustion, the sulfur content of the gaseous fuel being fired in the unit shall be determined using ASTM D 1072, D 3031, D 4084, D 3246 or a grab sample analysis by GC-FPD/TCD or double GC for H2S and mercaptans performed in the laboratory and EPA Method 19 to calculated emissions. Gaseous fuel fired units demonstrating compliance on two consecutive annual source tests shall be tested not less than once every thirty-six months, however annual source testing shall resume if any test fails to show compliance. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
20. If the unit is fired on noncertified gaseous fuel and compliance with SOx emission limits is achieved through fuel sulfur content limitations, then the sulfur content of the gaseous fuel being fired in the unit shall be determined using ASTM D 1072, D 3031, D 4084, D 3246 or grab sample analysis by GC-FPD/TCD or double GC for H2S and mercaptans performed in the laboratory. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
21. Operator shall provide an annual fuel analysis to the District. [District Rule 4320]

CONDITIONS CONTINUE ON NEXT PAGE

22. If fuel analysis is used to demonstrate compliance with the conditions of this permit, the fuel higher heating value for each fuel shall be certified by third party fuel supplier or determined by: D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District Rule 2520, 9.3.2; 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

23. 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

24. 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

25. The following test methods shall be used: NOx (ppmv) - EPA Method 7E or ARB Method 100, NOx (lb/MMBtu) - EPA Method 19, CO (ppmv) - EPA Method 10 or 10B or ARB Method 100, Stack Gas Oxygen - EPA Method 3 or 3A or ARB Method 100, Stack Gas Velocity (ft/min) - EPA Method 2, Stack Gas Moisture Content (%) - EPA Method 4, SOx (lb/MMBtu) - ARB Method 100 or EPA Method 6, 6C or fuel gas sulfur content analysis and EPA Method 19, Fuel Gas Sulfur Content - EPA Method 11 or 15, ASTM D3246 or double GC for H2S and mercaptans performed in a laboratory, fuel gas hhv - ASTM D1826 or D1945 in conjunction with ASTM D3588. [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. 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

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

29. 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

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

CONDITIONS CONTINUE ON NEXT PAGE

31. 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

32. 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

33. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

34. Permittee shall maintain records of higher heating value (hhv), in MMBtu/scf, for each gaseous fuel used in this operation. [District Rule 2201] Federally Enforceable Through Title V Permit

35. Copies of all , gas purchase contracts, supplier certifications, and test results to determine compliance with the conditions of this permit shall be maintained. The operator shall record daily amount and type(s) of fuel(s) combusted, fuel source, and all dates on which unit is fired on any noncertified fuel and record specific type of noncertified fuel used. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

36. 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

37. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following requirements: SJVUAPCD Rules 4201 (Amended December 17, 1992), and 4301 (Amended December 17, 1992). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

38. Compliance with permit conditions in the Title V permit shall be deemed compliance with the requirements of County Rules 108 (Kings), 108.1 (Fresno, Merced, San Joaquin, Tulare, Kern, and Stanislaus), and 110 (Madera), 402 (Madera), 404 (Fresno, Kern, Tulare, Kings, Stanislaus, Merced, and San Joaquin), 405 (Madera), 408 (Fresno, Kern, Tulare, Kings, Stanislaus, Merced, and San Joaquin), 407.2 (Kern, Tulare, Kings, Stanislaus, and San Joaquin), and 408.2 (Merced). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

39. The requirements of 40 CFR 72.6(b) and 40 CFR 60.40c do not apply to this source. A permit shield is granted from this requirement. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: C-311-52-19 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: CHEVRON USA INC
MAILING ADDRESS: PO BOX 1392
BAKERSFIELD, CA 93302

LOCATION: HEAVY OIL PRODUCTION
FRESNO COUNTY, CA

SECTION: 6 **TOWNSHIP:** 20S **RANGE:** 15E

EQUIPMENT DESCRIPTION:
MODIFICATION OF 52.5 MMBTU/HR SG-6-32 STRUTHERS THERMOFLOOD STEAM GENERATOR, MODEL 0H-50-ND-16XAM, WITH NORTH AMERICAN MODEL GLE BURNER AND FLUE GAS RECIRCULATION (FGR) SYSTEM: REMOVE CONDITION LIMITING DAILY FUEL CONSUMPTION AND REVISE HEAT INPUT RATING FROM 58.5 MMBTU/HR TO 62.5 MMBTU/HR, LOWER NOX LIMIT TO 14 PPMV @ 3% O2

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. ATC shall be implemented concurrently with or subsequent to ATC C-311-52-16. [District Rule 2201] Federally Enforceable Through Title V Permit
3. {1898} The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]
4. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
5. 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
6. This unit shall be fired exclusively on PUC-quality natural gas. [District Rule 2201] Federally Enforceable Through Title V Permit
7. Fuel gas shall not contain more than 5 grains of total sulfur per 100 standard cubic feet. [District Rule 4320]

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (559) 230-5950 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

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DAVID WARNER, Director of Permit Services

8. Total fuel consumption of this unit shall not exceed 457,800 MMBtu/year. [District Rule 2201] Federally Enforceable Through Title V Permit

9. The permittee shall maintain a non-resettable, totalizing mass or volumetric flow meter in the fuel line to the steam generator. [District Rule 2201] Federally Enforceable Through Title V Permit

10. Particulate matter emissions shall not exceed 0.1 grain/dscf, 0.1 grain/dscf calculated to 12% CO2, nor 10 lb/hr. [District Rules 4201, 3.1 and 4301, 5.1 and 5.2.3] Federally Enforceable Through Title V Permit

11. Nitrogen oxide (NOx) emissions shall not exceed 140 lb/hr, calculated as NO2. [District Rules 4301, 5.2.2, 5.3, and 5.5 and 2520, 9.4.2] Federally Enforceable Through Title V Permit

12. Sulfur compound emissions shall not exceed 0.2% by volume, 2000 ppmv, on a dry basis averaged over 15 consecutive minutes. [District Rule 4801] Federally Enforceable Through Title V Permit

13. Emissions of sulfur compounds from this unit shall not exceed 200 lb/hr, calculated as SO2. Compliance with this requirement may be demonstrated by firing the unit only on PUC or FERC regulated natural gas or by testing the sulfur content of each fuel and determining the maximum hourly emissions of sulfur compounds by multiplying the sulfur content of each fuel in lb/MMBtu by the maximum heat input rating of the unit; or by source testing in combination with fuel analysis. [District Rules 2520, 9.4.2 and 4301, 5.2.1] Federally Enforceable Through Title V Permit

14. Emissions from the steam generator shall not exceed any of the following limits: 0.0143 lb-SOx/MMBtu, 0.005 lb-PM10/MMBtu, or 0.008 lb-VOC/MMBtu. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit

15. Except during start-up and shutdown periods emissions from the steam generator shall not exceed any of the following limits: 14 ppmvd NOx @ 3% O2 or 0.017 lb-NOx/MMBtu or 50 ppmvd CO @ 3% O2 or 0.037 lb-CO/MMBtu. [District Rule 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

16. During start-up and shutdown periods emissions from the steam generator shall not exceed either of the following limits: 0.1 lb-NOx/MMBtu or 0.084 lb-CO/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit

17. Maximum emissions from the steam generator, including start-up and shutdown, shall not exceed any of the following limits: 50.5 lb-NOx/day, 8,240 lb-NOx/yr, 51.9 lb-CO/day, and 16,939 lb-CO/yr. [District Rule 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

18. 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 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

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

20. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, each fuel source shall be tested weekly for sulfur content and higher heating value. If compliance with the fuel sulfur content limit and sulfur emission limits has been demonstrated for 8 consecutive weeks for a fuel source, then the fuel testing frequency shall be semi-annually. If a semi-annual fuel content source test fails to show compliance, weekly testing shall resume. [District Rules 2520, 9.4.2 and 4320] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

21. When complying with SOx emission limits by testing of stack emissions, testing shall be performed not less than once every 12 months using EPA Method 6 and EPA Method 6C; or ARB Method 100; or, for units using gaseous fuel scrubbed for sulfur pre-combustion, the sulfur content of the gaseous fuel being fired in the unit shall be determined using ASTM D 1072, D 3031, D 4084, D 3246 or a grab sample analysis by GC-FPD/TCD or double GC for H2S and mercaptans performed in the laboratory and EPA Method 19 to calculated emissions. Gaseous fuel fired units demonstrating compliance on two consecutive annual source tests shall be tested not less than once every thirty-six months, however annual source testing shall resume if any test fails to show compliance. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

22. If the unit is fired on noncertified gaseous fuel and compliance with SOx emission limits is achieved through fuel sulfur content limitations, then the sulfur content of the gaseous fuel being fired in the unit shall be determined using ASTM D 1072, D 3031, D 4084, D 3246 or grab sample analysis by GC-FPD/TCD or double GC for H2S and mercaptans performed in the laboratory. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

23. Operator shall provide an annual fuel analysis to the District. [District Rule 4320]

24. If fuel analysis is used to demonstrate compliance with the conditions of this permit, the fuel higher heating value for each fuel shall be certified by third party fuel supplier or determined by: D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District Rule 2520, 9.4.2; 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

25. 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

26. NOx, and CO emissions shall be measured with source testing conducted by independent testing laboratory and shall be witnessed or authorized by the District [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

27. All required source testing shall conform to the compliance testing procedures described in District Rule 1081 (Amended December 16, 1993). [District Rule 1081] Federally Enforceable Through Title V Permit

28. {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]

29. {110} The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081]

30. The following test methods shall be used: NOx (ppmv) - EPA Method 7E or ARB Method 100, NOx (lb/MMBtu) - EPA Method 19, CO (ppmv) - EPA Method 10 or 10B or ARB Method 100, Stack Gas Oxygen - EPA Method 3 or 3A or ARB Method 100, Stack Gas Velocity (ft/min) - EPA Method 2, Stack Gas Moisture Content (%) - EPA Method 4, SOx (lb/MMBtu) - ARB Method 100 or EPA Method 6, 6C or fuel gas sulfur content analysis and EPA Method 19, Fuel Gas Sulfur Content - EPA Method 11 or 15, ASTM D3246 or double GC for H2S and mercaptans performed in a laboratory, fuel gas hhv - ASTM D1826 or D1945 in conjunction with ASTM D3588. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

31. Sampling facilities for source testing shall be provided in accordance with the provisions of rule 1081 (Source Sampling). [District Rule 1081] Federally Enforceable Through Title V Permit

32. 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

CONDITIONS CONTINUE ON NEXT PAGE

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

34. 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

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

36. Natural gas sulfur content and higher heating value (hhv) shall be certified by a third party fuel supplier of each fuel source or natural gas shall be tested for sulfur content and higher heating value (hhv) monthly. [District Rule 2201] Federally Enforceable Through Title V Permit

37. 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

38. 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]

39. 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

40. Permittee shall maintain records of higher heating value (hhv), in MMBtu/scf, for each gaseous fuel used in this operation. [District Rule 2201] Federally Enforceable Through Title V Permit

41. Copies of all , gas purchase contracts, supplier certifications, and test results to determine compliance with the conditions of this permit shall be maintained. The operator shall record daily amount and type(s) of fuel(s) combusted, fuel source, and all dates on which unit is fired on any noncertified fuel and record specific type of noncertified fuel used. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

42. 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

43. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following requirements: SJVUAPCD Rules 1081 (Amended December 16, 1993), 4201 (Amended December 17, 1992), and 4301 (Amended December 17, 1992). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

44. Compliance with permit conditions in the Title V permit shall be deemed compliance with the requirements of County Rules 108 (Kings), 108.1 (Fresno, Merced, San Joaquin, Tulare, Kern, and Stanislaus), and 110 (Madera), 402 (Madera), 404 (Fresno, Kern, Tulare, Kings, Stanislaus, Merced, and San Joaquin), 405 (Madera), 408 (Fresno, Kern, Tulare, Kings, Stanislaus, Merced, and San Joaquin), 407.2 (Kern, Tulare, Kings, Stanislaus, and San Joaquin), and 408.2 (Merced). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

45. The requirements of 40 CFR 72.6(b) and 40 CFR 60.40c do not apply to this source. A permit shield is granted from this requirement. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: C-311-53-20 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: CHEVRON USA INC
MAILING ADDRESS: PO BOX 1392
BAKERSFIELD, CA 93302

LOCATION: HEAVY OIL PRODUCTION
FRESNO COUNTY, CA

SECTION: 6C **TOWNSHIP:** 20S **RANGE:** 15E

EQUIPMENT DESCRIPTION:
MODIFICATION OF 52.5 MMBTU/HR SG-6-33 STRUTHERS THERMOFLOOD STEAM GENERATOR, MODEL OH-50-ND-16XAM, WITH NORTH AMERICAN MODEL GLE BURNER AND FLUE GAS RECIRCULATION (FGR) SYSTEM: REMOVE CONDITION LIMITING DAILY FUEL CONSUMPTION AND REVISE HEAT INPUT RATING FROM 58.5 MMBTU/HR TO 62.5 MMBTU/HR, LOWER NOX LIMIT TO 14 PPMV @ 3% O2

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. ATC shall be implemented concurrently with or subsequent to ATC C-311-53-17. [District Rule 2201] Federally Enforceable Through Title V Permit
3. {1898} The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]
4. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
5. 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
6. This unit shall be fired exclusively with natural gas. [District Rule 2201] Federally Enforceable Through Title V Permit
7. Fuel gas shall not contain more than 5 grains of total sulfur per 100 standard cubic feet. [District Rule 4320]

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (559) 230-5950 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

C-311-53-20 : Apr 24 2012 4:27PM -- EDGEHILR : Joint Inspection NOT Required

8. Total fuel consumption of this unit shall not exceed 457,800 MMBtu/year. [District Rule 2201] Federally Enforceable Through Title V Permit

9. The permittee shall maintain a non-resettable, totalizing mass or volumetric flow meter in the fuel line to the steam generator. [District Rule 2201] Federally Enforceable Through Title V Permit

10. Particulate matter emissions shall not exceed 0.1 grain/dscf, 0.1 grain/dscf calculated to 12% CO2, nor 10 lb/hr. [District Rules 4201, 3.1 and 4301, 5.1 and 5.2.3] Federally Enforceable Through Title V Permit

11. Nitrogen oxide (NOx) emissions shall not exceed 140 lb/hr, calculated as NO2. [District Rules 4301, 5.2.2, 5.3, and 5.5 and 2520, 9.4.2] Federally Enforceable Through Title V Permit

12. Sulfur compound emissions shall not exceed 0.2% by volume, 2000 ppmv, on a dry basis averaged over 15 consecutive minutes. [District Rule 4801] Federally Enforceable Through Title V Permit

13. Emissions of sulfur compounds from this unit shall not exceed 200 lb/hr, calculated as SO2. Compliance with this requirement may be demonstrated by firing the unit only on PUC or FERC regulated natural gas or by testing the sulfur content of each fuel and determining the maximum hourly emissions of sulfur compounds by multiplying the sulfur content of each fuel in lb/MMBtu by the maximum heat input rating of the unit; or by source testing in combination with fuel analysis. [District Rules 2520, 9.4.2 and 4301, 5.2.1] Federally Enforceable Through Title V Permit

14. Emissions from the steam generator shall not exceed any of the following limits: 0.0143 lb-SOx/MMBtu, 0.005 lb-PM10/MMBtu, or 0.008 lb-VOC/MMBtu. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit

15. Except during start-up and shutdown periods emissions from the steam generator shall not exceed any of the following limits: 14 ppmvd NOx @ 3% O2 or 0.017 lb-NOx/MMBtu or 50 ppmvd CO @ 3% O2 or 0.037 lb-CO/MMBtu. [District Rule 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

16. During start-up and shutdown periods emissions from the steam generator shall not exceed either of the following limits: 0.1 lb-NOx/MMBtu or 0.084 lb-CO/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit

17. Maximum emissions from the steam generator, including start-up and shutdown, shall not exceed any of the following limits: 50.5 lb-NOx/day, 8,240 lb-NOx/yr, 51.9 lb-CO/day, and 16,939 lb-CO/yr. [District Rule 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

18. 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 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

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

20. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, each fuel source shall be tested weekly for sulfur content and higher heating value. If compliance with the fuel sulfur content limit and sulfur emission limits has been demonstrated for 8 consecutive weeks for a fuel source, then the fuel testing frequency shall be semi-annually. If a semi-annual fuel content source test fails to show compliance, weekly testing shall resume. [District Rules 2520, 9.4.2 and 4320] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

21. When complying with SOx emission limits by testing of stack emissions, testing shall be performed not less than once every 12 months using EPA Method 6 and EPA Method 6C; or ARB Method 100; or, for units using gaseous fuel scrubbed for sulfur pre-combustion, the sulfur content of the gaseous fuel being fired in the unit shall be determined using ASTM D 1072, D 3031, D 4084, D 3246 or a grab sample analysis by GC-FPD/TCD or double GC for H2S and mercaptans performed in the laboratory and EPA Method 19 to calculated emissions. Gaseous fuel fired units demonstrating compliance on two consecutive annual source tests shall be tested not less than once every thirty-six months, however annual source testing shall resume if any test fails to show compliance. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

22. If the unit is fired on noncertified gaseous fuel and compliance with SOx emission limits is achieved through fuel sulfur content limitations, then the sulfur content of the gaseous fuel being fired in the unit shall be determined using ASTM D 1072, D 3031, D 4084, D 3246 or grab sample analysis by GC-FPD/TCD or double GC for H2S and mercaptans performed in the laboratory. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

23. Operator shall provide an annual fuel analysis to the District. [District Rule 4320]

24. If fuel analysis is used to demonstrate compliance with the conditions of this permit, the fuel higher heating value for each fuel shall be certified by third party fuel supplier or determined by: D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District Rule 2520, 9.4.2; 4305, 6.2.1; and 4351, 6.2.1] Federally Enforceable Through Title V Permit

25. 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, 6.3.1, 4306, 6.3.1, and 4320] Federally Enforceable Through Title V Permit

26. NOx, and CO emissions shall be measured with source testing conducted by independent testing laboratory and shall be witnessed or authorized by the District [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

27. All required source testing shall conform to the compliance testing procedures described in District Rule 1081 (Amended December 16, 1993). [District Rule 1081] Federally Enforceable Through Title V Permit

28. {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]

29. {110} The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081]

30. The following test methods shall be used: NOx (ppmv) - EPA Method 7E or ARB Method 100, NOx (lb/MMBtu) - EPA Method 19, CO (ppmv) - EPA Method 10 or 10B or ARB Method 100, Stack Gas Oxygen - EPA Method 3 or 3A or ARB Method 100, Stack Gas Velocity (ft/min) - EPA Method 2, Stack Gas Moisture Content (%) - EPA Method 4, SOx (lb/MMBtu) - ARB Method 100 or EPA Method 6, 6C or fuel gas sulfur content analysis and EPA Method 19, Fuel Gas Sulfur Content - EPA Method 11 or 15, ASTM D3246 or double GC for H2S and mercaptans performed in a laboratory, fuel gas hhv - ASTM D1826 or D1945 in conjunction with ASTM D3588. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

31. Sampling facilities for source testing shall be provided in accordance with the provisions of rule 1081 (Source Sampling). [District Rule 1081] Federally Enforceable Through Title V Permit

32. 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

CONDITIONS CONTINUE ON NEXT PAGE

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

34. 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

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

36. Natural gas sulfur content and higher heating value (hhv) shall be certified by a third party fuel supplier of each fuel source or natural gas shall be tested for sulfur content and higher heating value (hhv) monthly. [District Rule 2201] Federally Enforceable Through Title V Permit

37. 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

38. 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

39. 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

40. Permittee shall maintain records of higher heating value (hhv), in MMBtu/scf, for each gaseous fuel used in this operation. [District Rule 2201] Federally Enforceable Through Title V Permit

41. Copies of all , gas purchase contracts, supplier certifications, and test results to determine compliance with the conditions of this permit shall be maintained. The operator shall record daily amount and type(s) of fuel(s) combusted, fuel source, and all dates on which unit is fired on any noncertified fuel and record specific type of noncertified fuel used. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

42. 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

43. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following requirements: SJVUAPCD Rules 1081 (Amended December 16, 1993), 4201 (Amended December 17, 1992), and 4301 (Amended December 17, 1992). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

44. Compliance with permit conditions in the Title V permit shall be deemed compliance with the requirements of County Rules 108 (Kings), 108.1 (Fresno, Merced, San Joaquin, Tulare, Kern, and Stanislaus), and 110 (Madera), 402 (Madera), 404 (Fresno, Kern, Tulare, Kings, Stanislaus, Merced, and San Joaquin), 405 (Madera), 408 (Fresno, Kern, Tulare, Kings, Stanislaus, Merced, and San Joaquin), 407.2 (Kern, Tulare, Kings, Stanislaus, and San Joaquin), and 408.2 (Merced). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

45. The requirements of 40 CFR 72.6(b) and 40 CFR 60.40c do not apply to this source. A permit shield is granted from this requirement. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: C-311-84-18 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: CHEVRON USA INC
MAILING ADDRESS: PO BOX 1392
BAKERSFIELD, CA 93302

LOCATION: HEAVY OIL PRODUCTION
FRESNO COUNTY, CA

SECTION: 6C **TOWNSHIP:** 20S **RANGE:** 15E

EQUIPMENT DESCRIPTION:
MODIFICATION OF 58.5 MMBTU/HR SG 6-37 STRUTHERS THERMOFLOOD STEAM GENERATOR, MODEL OH5O-ND-16XAM, WITH NORTH AMERICAN MODEL GLE BURNER AND FLUE GAS RECIRCULATION (FGR) SYSTEM: REMOVE CONDITION LIMITING DAILY FUEL CONSUMPTION AND REVISE HEAT INPUT RATING FROM 58.5 MMBTU/HR TO 62.5 MMBTU/HR, LOWER NOX LIMIT TO 14 PPMV @ 3% O2

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. ATC shall be implemented concurrently with or subsequent to ATC C-311-84-16. [District Rule 2201] Federally Enforceable Through Title V Permit
3. {1898} The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]
4. The permittee shall install and maintain a non-resettable, totalizing mass or volumetric flow meter in each fuel line to the boiler. [District Rule 2201] Federally Enforceable Through Title V Permit
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 be fired on PUC-quality natural gas, LPG, or a blend of PUC-quality natural gas and well casing and tank vapor recovery (TVR) gas. [District Rule 2201] Federally Enforceable Through Title V Permit
7. Fuel gas shall not contain more than 5 grains of total sulfur per 100 standard cubic feet. [District Rule 4320]

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (559) 230-5950 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

8. Total fuel consumption shall not exceed 434,700 MMBtu/year. [District Rule 2201] Federally Enforceable Through Title V Permit

9. Particulate matter emissions shall not exceed 0.1 grain/dscf, 0.1 grain/dscf calculated to 12% CO2, nor 10 lb/hr. [District Rules 4201, 3.1 and 4301, 5.1 and 5.2.3] Federally Enforceable Through Title V Permit

10. Nitrogen oxide (NOx) emissions shall not exceed 140 lb/hr, calculated as NO2. [District Rules 4301, 5.2.2, 5.3, and 5.5 and 2520, 9.4.2] Federally Enforceable Through Title V Permit

11. Emissions of sulfur compounds from this unit shall not exceed 200 lb/hr, calculated as SO2. Compliance with this requirement may be demonstrated by firing the unit only on PUC or FERC regulated natural gas or by testing the sulfur content of each fuel and determining the maximum hourly emissions of sulfur compounds by multiplying the sulfur content of each fuel in lb/MMBtu by the maximum heat input rating of the unit; or by source testing in combination with fuel analysis. [District Rules 2520, 9.4.2 and 4301, 5.2.1] Federally Enforceable Through Title V Permit

12. Emissions from the steam generator shall not exceed any of the following limits: 0.0143 lb-SOx/MMBtu, 0.00675 lb-PM10/MMBtu, or 0.00855 lb-VOC/MMBtu. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit

13. Except during start-up and shutdown periods emissions from the steam generator shall not exceed any of the following limits: 14 ppmvd NOx @ 3% O2 or 0.017 lb-NOx/MMBtu or 50 ppmvd CO @ 3% O2 or 0.037 lb-CO/MMBtu. [District Rule 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

14. During start-up and shutdown periods emissions from the steam generator shall not exceed either of the following limits: 0.1 lb-NOx/MMBtu or 0.084 lb-CO/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit

15. Maximum emissions from the steam generator, including start-up and shutdown, shall not exceed any of the following limits: 50.5 lb-NOx/day, 7,390 lb-NOx/yr, 66.4 lb-CO/day, and 16,084 lb-CO/yr. [District Rule 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

16. 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 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

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

18. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, each fuel source shall be tested weekly for sulfur content and higher heating value. If compliance with the fuel sulfur content limit and sulfur emission limits has been demonstrated for 8 consecutive weeks for a fuel source, then the fuel testing frequency shall be semi-annually. If a semi-annual fuel content source test fails to show compliance, weekly testing shall resume. [District Rules 2520, 9.4.2 and 4320] Federally Enforceable Through Title V Permit

19. When complying with SOx emission limits by testing of stack emissions, testing shall be performed not less than once every 12 months using EPA Method 6 and EPA Method 6C; or ARB Method 100; or, for units using gaseous fuel scrubbed for sulfur pre-combustion, the sulfur content of the gaseous fuel being fired in the unit shall be determined using ASTM D 1072, D 3031, D 4084, D 3246 or a grab sample analysis by GC-FPD/TCD or double GC for H2S and mercaptans performed in the laboratory and EPA Method 19 to calculated emissions. Gaseous fuel fired units demonstrating compliance on two consecutive annual source tests shall be tested not less than once every thirty-six months, however annual source testing shall resume if any test fails to show compliance. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

20. Operator shall provide an annual fuel analysis to the District. [District Rule 4320]

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CONDITIONS CONTINUE ON NEXT PAGE

21. If the unit is fired on noncertified gaseous fuel and compliance with SOx emission limits is achieved through fuel sulfur content limitations, then the sulfur content of the gaseous fuel being fired in the unit shall be determined using ASTM D 1072, D 3031, D 4084, D 3246 or grab sample analysis by GC-FPD/TCD or double GC for H2S and mercaptans performed in the laboratory. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

22. 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

23. All required source testing shall conform to the compliance testing procedures described in District Rule 1081 (Amended December 16, 1993). [District Rule 1081] Federally Enforceable Through Title V Permit

24. NOx, and CO emissions shall be measured with source testing conducted by independent testing laboratory and shall be witnessed or authorized by the District [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

25. 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

26. {110} The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081]

27. The following test methods shall be used: NOx (ppmv) - EPA Method 7E or ARB Method 100, NOx (lb/MMBtu) - EPA Method 19, CO (ppmv) - EPA Method 10 or 10B or ARB Method 100, Stack Gas Oxygen - EPA Method 3 or 3A or ARB Method 100, Stack Gas Velocity (ft/min) - EPA Method 2, Stack Gas Moisture Content (%) - EPA Method 4, SOx (lb/MMBtu) - ARB Method 100 or EPA Method 6, 6C or fuel gas sulfur content analysis and EPA Method 19, Fuel Gas Sulfur Content - EPA Method 11 or 15, ASTM D3246 or double GC for H2S and mercaptans performed in a laboratory, fuel gas hhv - ASTM D1826 or D1945 in conjunction with ASTM D3588. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

28. If fuel analysis is used to demonstrate compliance with the conditions of this permit, the fuel higher heating value for each fuel shall be certified by third party fuel supplier or determined by: D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District Rule 2520, 9.4.2; 4305, 4306, 4320, and 4351, 6.2.1] Federally Enforceable Through Title V Permit

29. 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

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

31. 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

CONDITIONS CONTINUE ON NEXT PAGE

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

33. Natural gas or LPG sulfur content and higher heating value (hhv) shall be certified by a third party fuel supplier of each fuel source; or natural gas or LPG shall be tested for sulfur content and higher heating value (hhv) monthly. Casing gas shall be tested for sulfur content and higher heating value (hhv) not less than monthly. [District Rule 2201] Federally Enforceable Through Title V Permit

34. 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

35. 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

36. 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

37. Permittee shall maintain records of higher heating value (hhv), in MMBtu/scf, for each gaseous fuel used in this operation. [District Rule 2201] Federally Enforceable Through Title V Permit

38. Copies of all , gas purchase contracts, supplier certifications, and test results to determine compliance with the conditions of this permit shall be maintained. The operator shall record daily amount and type(s) of fuel(s) combusted, fuel source, and all dates on which unit is fired on any noncertified fuel and record specific type of noncertified fuel used. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

39. 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

40. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following requirements of District Rules 1081 (Amended December 16, 1993), 4201 (Amended December 17, 1992), and 4301 (Amended December 17, 1992). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

41. Compliance with permit conditions in the Title V permit shall be deemed compliance with the requirements of County Rules 108 (Kings), 108.1 (Fresno, Merced, San Joaquin, Tulare, Kern, and Stanislaus), and 110 (Madera), 402 (Madera), 404 (Fresno, Kern, Tulare, Kings, Stanislaus, Merced, and San Joaquin), 405 (Madera), 408 (Fresno, Kern, Tulare, Kings, Stanislaus, Merced, and San Joaquin), 407.2 (Kern, Tulare, Kings, Stanislaus, and San Joaquin), and 408.2 (Merced). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

42. The requirements of 40 CFR 72.6(b) and 40 CFR 60.40c do not apply to this source. A permit shield is granted from this requirement. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit