



**San Joaquin Valley**  
**AIR POLLUTION CONTROL DISTRICT**

MAY 08 2012

Brent Winn  
Aera Energy LLC  
PO Box 11164  
Bakersfield, CA 93389-1164

**Re: Notice of Minor Title V Permit Modification**  
**District Facility # S-1547**  
**Project # 1121388**

Dear Mr. Winn:

Enclosed is the District's analysis of your application for minor Title V permit modification for the facility identified above. You proposed a Title V minor permit modification to incorporate recently issued Authorities to Construct (ATCs) S-1547-24-27, '-62-32, and '-837-20 into the Title V operating permit. The ATCs authorized adding a condition limiting sulfur content of combined fuel combusted in steam generators to 5 gr S/100 scf for Rule 4320 compliance.

Enclosed is the engineering evaluation with the following attachments: proposed modified Title V permit, recently issued Authorities to Construct (ATCs) S-1547-24-27, '-62-32, and '-837-20, application, and previous Title V permit. This project will be subject to a 45-day EPA commenting period prior to the District taking final action.

Thank you for your cooperation in this matter. If you have any questions, please contact Mr. Leonard Scandura at (661) 392-5500.

Sincerely,

David Warner  
Director of Permit Services

Enclosures

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**Northern Region**  
4800 Enterprise Way  
Modesto, CA 95356-8718  
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1990 E. Gettysburg Avenue  
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**Southern Region**  
34946 Flyover Court  
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# San Joaquin Valley

## AIR POLLUTION CONTROL DISTRICT

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 Minor Title V Permit Modification**  
**District Facility # S-1547**  
**Project # 1121388**

Dear Mr. Rios:

Enclosed for you to review is an application for minor Title V permit modification for the facility identified above. Aera Energy LLC is proposing a Title V minor permit modification to incorporate the recently issued Authorities to Construct (ATCs) S-1547-24-27, '-62-32, and '-837-20 into the Title V operating permit. The ATCs authorized adding a condition limiting sulfur content of combined fuel combusted in steam generators to 5 gr S/100 scf for Rule 4320 compliance.

Enclosed is the engineering evaluation with the following attachments: proposed modified Title V permit, recently issued Authorities to Construct (ATCs) S-1547-24-27, '-62-32, and '-837-20, application, and previous Title V permit. Please submit your written comments on this project within the 45-day comment period that begins on the date you receive this letter.

Thank you for your cooperation in this matter. If you have any questions, please contact Mr. Leonard Scandura at (661) 392-5500.

Sincerely,

David Warner  
Director of Permit Services

Enclosures

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# TITLE V APPLICATION REVIEW

Minor Modification  
Project #: S-1121388

Engineer: Richard Edgehill  
Date: May 3, 2012

*RWC 5-8-12*

Facility Number: S-1547  
Facility Name: Aera Energy LLC  
Mailing Address: PO Box 11164  
Bakersfield, CA 93389-1164

Contact Name: Brent Winn  
Phone: (661) 665-4363  
Title: Environmental Engineer  
Lead Engineer: Richard Karrs

## I. PROPOSAL

Aera Energy LLC is proposing a Title V minor permit modification to incorporate the recently issued Authorities to Construct S-1547-24-27, '-62-32, and '-837-20 into the Title V operating permit. The ATCs authorized adding a condition limiting sulfur content of combined fuel combusted in steam generators to 5 gr S/100 scf for Rule 4320 compliance.

The purpose of this evaluation is to identify all applicable requirements, determine if the facility will comply with the applicable requirements and to provide the legal and factual basis for the proposed revisions.

## II. FACILITY LOCATION

The steam generators are authorized to operate at the following locations in source S-1547:

Equipment locations				
ATCs	Section	Township	Range	
S-1547-24-27	NE Section 12 Section 33	30S 28S	21E 21E	MDB&M
S-1547-62-32	NW Section 12	29S	21E	
S-1547-837-20	NW Section 11	29S	21E	

### III. EQUIPMENT DESCRIPTION

**PTO S-1547-24-28:** 62.5 MMBTU/HR NATURAL GAS-FIRED STEAM GENERATOR, WITH A COEN ULN LOW NOX BURNER AND FLUE GAS RECIRCULATION, APPROVED TO OPERATE AT VARIOUS SPECIFIED LOCATIONS (#47, DIS# 21944-77)

**PTO S-1547-62-33:** 62.5 MMBTU/HR C.E. NATCO NATURAL GAS FIRED STEAM GENERATOR WITH A COEN QLN-ULN LOW-NOX BURNER AND FLUE GAS RECIRCULATION (#12-2C, DIS# 19175-75)

**PTO S-1547-837-23:** 62.5 MMBTU/HR NATURAL GAS/VAPOR RECOVERY GAS FIRED STEAM GENERATOR WITH A COEN ULN LOW NOX BURNER, FLUE GAS RECIRCULATION, AND NON-CONDENSIBLE PIPING FROM VAPOR CONTROL SYSTEM S-1547-359. (#11-1F) (BELRIDGE)

### IV. SCOPE OF EPA AND PUBLIC REVIEW

This change to a Title V permit is considered to be a minor modification and, as such, requires no public review.

### V. APPLICABLE REQUIREMENTS

District Rule 2520, Federally Mandated Operating Permits (Adopted June 21, 2001)

### VI. DESCRIPTION OF PROPOSED MODIFICATIONS

Aera has proposed to reduce permitted sulfur emissions of three steam generators for Rule 4320 compliance.

The base documents for the project are Title V PTOs S-1547-24-27, '-62-32 and '-837-22 (in draft form). Draft Title V PTO S-1547-837-22 is currently being reviewed by EPA in Minor Modification project S-1547, 1121227. The following changes to the base documents are included in the tables below:

Condition # Comparison

Draft PTO S-1547-24-28	PTO S-1547-24-20	Comments
1-8	1-8	
9	9	Deleted "SOx(as SO2):0.055 lb/MMBtu" from draft PTO as redundant
10	10	
11	11	Natural gas fuel sulfur content shall not exceed <del>19.3</del> 5.0 gr S/100 scf. [District NSR Rule] Y
12-25	12-25	

Condition # Comparison

Draft PTO S-1547-62-33	PTO S-1547-62-24	Comments
1-8	1-8	
9	9	This unit shall be fired exclusively on natural gas which may consist of one or a mixture of fuels including treated produced gas and purchased gas with a sulfur content not to exceed <del>19.3</del> 5.0 gr/100 scf. [District Rule 2201] Y
10	10	Deleted "SOx(as SO2):0.055 lb/MMBtu" from draft PTO as redundant
11	11	Natural gas fuel sulfur content shall not exceed <del>19.3</del> 5.0 gr S/100 scf. [District NSR Rule] Y
12-25	12-25	

Condition # Comparison

Draft PTO S-1547-837-23	PTO S-1547-837-22 (draft under review)	Comments
1-17	1-17	
18		Natural gas fuel sulfur content shall not exceed 5.0 gr S/100 scf. [District Rule 2201] N – added to base document
19-38	18-37	

**VII. COMPLIANCE**

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.

In accordance with Rule 2520, the application meets the procedural requirements of section 11.4 by including;

1. A description of the change, the emissions resulting from the change, and any new applicable requirements that will apply if the change occurs;

Aera Energy LLC  
Facility ID: S-1547  
Project No.: S-1121388

2. The source's suggested draft permit; and
3. Certification by a responsible official that the proposed modification meets the criteria for use of minor permit modification procedures and a request that such procedures be used.

## **VIII. ATTACHMENTS**

- A. Proposed Title V PTOs S-1547-24-28, '-62-33, and '-837-23
- B. Authorities to Construct S-1547-24-27, '-62-32, '-837-20
- C. Permit Application
- D. Previous Title V PTO S-1547-24-20, '-62-24, and '-837-22 (in draft form)

Aera Energy LLC  
Facility ID: S-1547  
Project No.: S-1121388

# ATTACHMENT A

Proposed Title V PTOs  
S-1547-24-28, '-62-33, and '-837-23

# San Joaquin Valley Air Pollution Control District

PERMIT UNIT: S-1547-24-28

EXPIRATION DATE: 05/31/2016

SECTION: V TOWNSHIP: V RANGE: V

## EQUIPMENT DESCRIPTION:

62.5 MMBTU/HR NATURAL GAS-FIRED STEAM GENERATOR, WITH A COEN ULN LOW NOX BURNER AND FLUE GAS RECIRCULATION, APPROVED TO OPERATE AT VARIOUS SPECIFIED LOCATIONS (#47, DIS# 21944-77)

## PERMIT UNIT REQUIREMENTS

1. Approved locations for this steam generator are: NE12 T30S R21E (Calsó Lease) and Sec. 33 T28S, R21E. [District Rule 2201] Federally Enforceable Through Title V Permit
2. Permittee shall notify the District at least 48 hours prior to transfer between approved locations. [District Rule 2201] Federally Enforceable Through Title V Permit
3. Copies of all fuel invoices showing quantity and delivery points of supplier-certified gas delivered and copies of quality terms of supplier-certified gas delivery contracts shall be maintained. The operator shall record daily amount and type(s) of fuel(s) combusted 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
4. 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
5. When complying with SO<sub>x</sub> emission limits by testing of stack emissions, testing shall be performed not less than once every 12 months using EPA Method 6; or EPA Method 6B; or EPA Method 8; or ARB Methods 8 or 100; or, for units using gaseous fuel scrubbed for sulfur pre-combustion, a grab sample analysis by double GC for H<sub>2</sub>S and mercaptans performed in the laboratory and EPA Method 19 to calculate 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
6. If the unit is fired on noncertified gaseous fuel and compliance with SO<sub>x</sub> emission limits is achieved through fuel sulfur content limitations, the following test methods (or other approved methods listed in this permit) shall be used; H<sub>2</sub>S: ASTM D6228 or grab sample analysis by double GC for H<sub>2</sub>S and mercaptans performed in the laboratory; total sulfur: ASTM 1072, D3246, D4084 or D6228. [District Rules 4305, 6.2, and 4306, 6.2] Federally Enforceable Through Title V Permit
7. If fuel analysis is used to demonstrate compliance with conditions of this permit, the fuel higher heating value for each fuel shall be certified by a third party fuel supplier or determined by ASTM D 1826 or D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District Rules 4305, 6.2 and 4306, 6.2] Federally Enforceable Through Title V Permit
8. {565} Compliance with permit conditions in the Title V permit shall be deemed compliance with the requirements of 40 CFR 60, Subpart Dc (except 60.44c(g) and (h) and 60.48c). 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

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

9. Emission rates, except during startup, shutdown, and refractory curing, shall not exceed any of the following PM10: 0.058 lb/MMBtu, VOC: 0.003 lb/MMBtu, NOx (as NO2): 0.018 lb/MMBtu or 15 ppmv @ 3% O2, or CO: 50 ppmv @ 3% O2. [District Rules 2201, 4305, 5.1 and 4306, 5.1] Federally Enforceable Through Title V Permit
10. Emission rates during refractory curing shall not exceed: particulate matter - 10 pounds per hour, or 0.1 grains/dscf calculated to 12% CO2; sulfur - 200 pounds of SO2 per hour, or 2000 ppmv as SO2, or 0.11 pounds sulfur (as S) per MMBtu on average-wide basis for all units in Rule 4406 plan; NO2 - 140 pounds per hour or 0.14 pounds per MMBtu. [District Rules 4301, 5.2; 4405, 5.2; 4406, 4.2 and 4801, 3.1] Federally Enforceable Through Title V Permit
11. Natural gas fuel sulfur content shall not exceed 5.0 gr S/100 scf. [District NSR Rule] Federally Enforceable Through Title V Permit
12. Duration of startup and shutdown (as defined in Rule 4306) shall not exceed 2 hours each per occurrence. Refractory curing period is defined as a maintenance-based reduced-load period of time during which a unit is brought from a shutdown status to staged rates of firing for the sole purpose of curing new refractory lining of the unit, and shall not exceed 30 hours per occurrence. The operator shall maintain records of the duration of start-up, shutdown, and refractory curing periods. [District Rules 4405, 5.5 & 6.1 and 4306, 5.3 & 6.1] Federally Enforceable Through Title V Permit
13. 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; 4306, 5.5 and 4320, 5.7] Federally Enforceable Through Title V Permit
14. 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 (amended December 17, 1992), 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
15. All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the permit-to-operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 4305, 5.5 and 4306, 5.5] Federally Enforceable Through Title V Permit
16. 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

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

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. Unless otherwise specified in the Permit to Operate No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of Rule 4306. For the purposes of permittee-performed alternate monitoring, emissions measurements may be performed at any time after the unit reaches conditions representative of normal operation. [District Rules 4305, 5.5.2 and 4306, 5.5.2] Federally Enforceable Through Title V Permit
18. Source testing to measure natural gas-combustion NOx and CO emissions from this unit shall be conducted at least once every twelve (12) months (no more than 30 days before or after the required annual source test date). After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months (no more than 30 days before or after the required 36-month source test date). If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 6.3 and 4306, 6.3] 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 and 4306, 5.5] Federally Enforceable Through Title V Permit
20. 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. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081, 7.1] Federally Enforceable Through Title V Permit
21. 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, SOx (lb/MMBtu) - ARB Method 8 or 100 or EPA Method 6, 6B or 8 or fuel gas sulfur content analysis and EPA Method 19, fuel gas sulfur content - ASTM D1072, D4468, D3246, D4084 or double GC for H2S and mercaptans performed in laboratory, fuel gas hhv - ASTM D1826 or D1945 in conjunction with ASTM D3588. [1081, 6.1; 4305, 6.2 and 4306, 6.2] 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 and 4306, 5.5] Federally Enforceable Through Title V Permit
23. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rule 2201, District Rules 1070, 4.0; 4305, 6.1 and 4306, 6.1] Federally Enforceable Through Title V Permit
24. 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, 4.0; 4305, 6.1 and 4306, 6.1] Federally Enforceable Through Title V Permit
25. 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, 5.1 and 5.3] Federally Enforceable Through Title V Permit

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

**San Joaquin Valley  
Air Pollution Control District**

**PERMIT UNIT:** S-1547-62-33

**EXPIRATION DATE:** 05/31/2016

**SECTION:** NW12 **TOWNSHIP:** 29S **RANGE:** 21E

**EQUIPMENT DESCRIPTION:**

62.5 MMBTU/HR C.E. NATCO NATURAL GAS FIRED STEAM GENERATOR WITH A COEN QLN-ULN LOW-NOX BURNER AND FLUE GAS RECIRCULATION (#12-2C, DIS# 19175-75)

**PERMIT UNIT REQUIREMENTS**

1. This equipment is approved to be operated at the following locations: Section 18, T28S/R21E and NW/4 Section 12, T29S/R21E. [District Rule 2201] Federally Enforceable Through Title V Permit
2. The permittee shall notify the District Compliance Division of each location at which the operation is located in excess of 24 hours. Such notification shall be made no later than 48 hours after starting operation at the location. [District Rule 2201] Federally Enforceable Through Title V Permit
3. Copies of all fuel invoices showing quantity and delivery points of gas delivered and copies of quality terms of gas delivery contracts shall be maintained. The operator shall record daily amount and type(s) of fuel(s) combusted 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
4. 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 has been demonstrated for 8 consecutive weeks for a fuel source, then the 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
5. 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 EPA Method 6B; or EPA Method 8; or ARB Methods 8 or 100; or, for units using gaseous fuel scrubbed for sulfur pre-combustion, a grab sample analysis by double GC for H2S and mercaptans performed in the laboratory and EPA Method 19 to calculate 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
6. If the unit is fired on noncertified gaseous fuel and compliance with SOx emission limits is achieved through fuel sulfur content limitations, the following test methods (or other approved methods listed in this permit) shall be used; H2S: ASTM D6228 or grab sample analysis by double GC for H2S and mercaptans performed in the laboratory; total sulfur: ASTM 1072, D3246, D4084 or D6228. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
7. If fuel analysis is used to demonstrate compliance with conditions of this permit, the fuel higher heating value for each fuel shall be certified by a third party fuel supplier or determined by ASTM D 1826 or D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District Rules 4305, 6.2 and 4306, 6.2] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

8. {565} Compliance with permit conditions in the Title V permit shall be deemed compliance with the requirements of 40 CFR 60, Subpart Dc (except 60.44c(g) and (h) and 60.48c). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
9. This unit shall be fired exclusively on natural gas which may consist of one or a mixture of fuels including treated produced gas and purchased gas with a sulfur content not to exceed 5.0 gr/100 scf. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Emission rates, except during startup, shutdown, and refractory curing shall not exceed any of the following PM10: 0.058 lb/MMBtu, VOC: 0.003 lb/MMBtu, NOx (as NO<sub>2</sub>): 0.018 lb/MMBtu or 15 ppmv @ 3% O<sub>2</sub>, or CO: 0.030 lb/MMBtu or 40 ppmv @ 3% O<sub>2</sub>. [District Rules 2201, 4305, 5.1 and 4306, 5.1] Federally Enforceable Through Title V Permit
11. Emission rates during startup, shutdown and refractory curing shall not exceed: particulate matter - 10 pounds per hour, or 0.1 grains/dscf calculated to 12% CO<sub>2</sub>; sulfur - 200 pounds of SO<sub>2</sub> per hour, or 2000 ppmv as SO<sub>2</sub>, or 0.11 pounds sulfur (as S) per MMBtu on average-wide basis for all units in Rule 4406 plan; NO<sub>2</sub> - 140 pounds per hour or 0.14 pounds per MMBtu. [District Rules 4301, 5.2; 4405, 5.2; 4406, 4.2 and 4801, 3.1] Federally Enforceable Through Title V Permit
12. Emission rates shall not exceed any of the following: PM10: 87.0 lb/day, SOx (as SO<sub>2</sub>): 82.5 lb/day, VOC: 4.5 lb/day, NOx (as NO<sub>2</sub>): 54.0 lb/day or 9855 lb/year, or CO: 45.0 lb/day [District Rule 2201] Federally Enforceable Through Title V Permit
13. Duration of startup and shutdown (as defined in Rule 4306) shall not exceed 2 hours each per occurrence. Refractory curing period is defined as a maintenance-based reduced-load period of time during which a unit is brought from a shutdown status to staged rates of firing for the sole purpose of curing new refractory lining of the unit, and shall not exceed 30 hours per occurrence. The operator shall maintain records of the duration of start-up, shutdown, and refractory curing periods. [District Rules 4305, 5.5, & 6.1 and 4306, 5.3 & 6.1] Federally Enforceable Through Title V Permit
14. The permittee shall monitor and record the stack concentration of NOx, CO, and O<sub>2</sub> at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305, 5.4 and 4306, 5.5] Federally Enforceable Through Title V Permit
15. If the NOx or CO concentrations corrected to 3% O<sub>2</sub>, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of the performing the notification and testing required by this condition. [District Rules 4305, 5.4 and 4306, 5.4] Federally Enforceable Through Title V Permit
16. All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the permit-to-operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 4305, 5.5 and 4306, 5.5] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

17. The permittee shall maintain records of: (1) the date and time of NO<sub>x</sub>, CO, and O<sub>2</sub> measurements, (2) the O<sub>2</sub> concentration in percent and the measured NO<sub>x</sub> and CO concentrations corrected to 3% O<sub>2</sub>, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 5.4 and 4306, 5.4] Federally Enforceable Through Title V Permit
18. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. Unless otherwise specified in the Permit to Operate No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of Rule 4306. For the purposes of permittee-performed alternate monitoring, emissions measurements may be performed at any time after the unit reaches conditions representative of normal operation. [District Rules 4305, 5.5 and 4306, 5.5] Federally Enforceable Through Title V Permit
19. Source testing to measure natural gas combustion NO<sub>x</sub> and CO emissions from this unit shall be conducted at least once every twelve (12) months (no more than 30 days before or after the required annual source test date). After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months (no more than 30 days before or after the required 36-month source test date). If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 6.3 and 4306, 6.3] 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, 5.5 and 4306, 5.5] Federally Enforceable Through Title V Permit
21. 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. 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
22. The following test methods shall be used: NO<sub>x</sub> (ppmv) - EPA Method 7E or ARB Method 100, NO<sub>x</sub> (lb/MMBtu) - EPA Method 19, CO (ppmv) - EPA Method 10 or 10B or ARB Method 100, stack gas oxygen - EPA Method 3 or 3A or ARB Method 100, SO<sub>x</sub> (lb/MMBtu) - ARB Method 8 or 100 or EPA Method 6, 6B or 8 or fuel gas sulfur content analysis and EPA Method 19, fuel gas sulfur content - ASTM D1072, D4468, D3246, D4084 or double GC for H<sub>2</sub>S and mercaptans performed in laboratory, fuel gas hhv - ASTM D1826 or D1945 in conjunction with ASTM D3588. [District Rule 1081, 6.1; 4305, 6.2 and 4306, 6.2] Federally Enforceable Through Title V Permit
23. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 5.5 and 4306, 5.5] Federally Enforceable Through Title V Permit
24. All records shall be maintained for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 4.0; 4305, 6.1 and 4306, 6.1] Federally Enforceable Through Title V Permit
25. 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
26. Pursuant to Rule 4320, beginning in 2010 the operator shall pay an annual emission fee to the District for NO<sub>x</sub> 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 NO<sub>x</sub> emission limit listed in Rule 4320. [District Rule 4320] Federally Enforceable Through Title V Permit

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

# San Joaquin Valley Air Pollution Control District

**PERMIT UNIT:** S-1547-837-23

**EXPIRATION DATE:** 05/31/2016

**SECTION:** NW11 **TOWNSHIP:** 29S **RANGE:** 21E

**EQUIPMENT DESCRIPTION:**

62.5 MMBTU/HR NATURAL GAS/VAPOR RECOVERY GAS FIRED STEAM GENERATOR WITH A COEN ULN LOW NOX BURNER, FLUE GAS RECIRCULATION, AND NON-CONDENSIBLE PIPING FROM VAPOR CONTROL SYSTEM S-1547-359. (#11-1F) (BELRIDGE)

## PERMIT UNIT REQUIREMENTS

1. Copies of all fuel invoices showing quantity and delivery points of gas delivered and copies of quality terms of gas delivery contracts shall be maintained. The operator shall record daily amount and type(s) of fuel(s) combusted 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
2. Emissions from gaseous fired units shall not exceed 200 lb sulfur compounds/hour, calculated as SO<sub>2</sub>. 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 4301, 5.2.1, and 2520, 9.3.2] Federally Enforceable Through Title V Permit
3. 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 has been demonstrated for 8 consecutive weeks for a fuel source, then the 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
4. If fuel analysis is used to demonstrate compliance with conditions of this permit, the fuel higher heating value for each fuel shall be certified by a third party fuel supplier or determined by ASTM D 1826 or D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District Rules 4305, 6.2; 4306, 6.2 and 4320, 6.2] Federally Enforceable Through Title V Permit
5. The operator shall demonstrate compliance with this unit's sulfur compound exhaust concentration limit(s) using one of the following: test the sulfur content of each fuel source, or determine that the concentration of sulfur compounds in the exhaust does not exceed the concentration limit by a combination of source testing and fuel analysis. [District Rules 2520, 9.4.2, 4301, 5.2.1 and Rule 4801, 3.1] Federally Enforceable Through Title V Permit
6. {565} Compliance with permit conditions in the Title V permit shall be deemed compliance with the requirements of 40 CFR 60, Subpart Dc (except 60.44c(g) and (h) and 60.48c). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
7. Steam generator shall be equipped with operational fuel gas volumetric flow meter . [District Rule 2201] Federally Enforceable Through Title V Permit
8. Steam generator shall be equipped with operational vapor control system gas supply volumetric flow meter whenever unit is connected to the vapor control system gas supply. [District Rule 2201] Federally Enforceable Through Title V Permit

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

9. Maximum TEOR gas flow rate for this unit shall not exceed 1,300 Mcf/day. [District Rule 2201] Federally Enforceable Through Title V Permit
10. When fired exclusively on natural gas, except during startup, shutdown, and refractory curing, emissions from this unit shall not exceed either of the following limits: PM10: 0.005 lb/MMBtu or SOx (as SO2): 0.002 lb/MMBtu. [District Rules 2201; 4201, 3.0; and 4320, 5.4] Federally Enforceable Through Title V Permit
11. When natural gas and TEOR gas fired, except during startup, shutdown, and refractory curing, maximum PM10 emissions shall not exceed the lb/hr limit calculated as follows:  $PM10 = \{(7.0 \text{ lb/day}) + (249.2 \text{ lb/day}) \times (\text{fraction of total TEOR gas incinerated in this unit during testing})\} / (24 \text{ hr/day})$ . [District Rules 2201, 2520, 4201 and 4301] Federally Enforceable Through Title V Permit
12. Steam generator shall be operated at no greater than 1,466.7 MMBtu hhw/day heat input. [District Rule 2201] Federally Enforceable Through Title V Permit
13. The total gas fired in this unit, on a monthly volume basis, shall be less than 50% PUC quality natural gas (as defined in Rule 4320), by volume. [District Rule 4320, 5.2] Federally Enforceable Through Title V Permit
14. The permittee shall maintain monthly records of the volume of PUC quality natural gas (as defined in Rule 4320) and the total gas fired in this unit. Permittee shall keep monthly records of the percentage by volume of PUC quality gas fired and indicate if the volume of PUC quality gas fired is less than 50%. [District Rule 4320, 5.2] Federally Enforceable Through Title V Permit
15. Fuel H2S, total sulfur, and methane content shall be determined semi-annually using the test methods specified in this permit. [District Rule 4320, 6.2] Federally Enforceable Through Title V Permit
16. If the unit is fired on noncertified gaseous fuel and compliance with SOx emission limits is achieved through fuel sulfur content limitations, the following test methods (or other approved methods listed in this permit) shall be used; H2S: ASTM D6228 or grab sample analysis by double GC for H2S and mercaptans performed in the laboratory; total sulfur: ASTM 1072, D3246, D4084 or D6228; and methane content: ASTM D1945. [District Rule 4320, 6.2] Federally Enforceable Through Title V Permit
17. Emission rates, except during startup, shutdown, and refractory curing shall not exceed any of the following: VOC: 0.003 lb/MMBtu, NOx (as NO2): 0.014 lb/MMBtu or 12 ppmv @ 3% O2, or CO: 0.030 lb/MMBtu or 40.0 ppmv @ 3% O2. [District Rule 2201; 4305, 5.1; 4306, 5.1 and 4320, 5.2] Federally Enforceable Through Title V Permit
18. Natural gas fuel sulfur content shall not exceed 5.0 gr S/100 scf. [District Rule 2201]
19. Emission rates during startup, shutdown and refractory curing shall not exceed: particulate matter - 10 pounds per hour, or 0.1 grains/dscf calculated to 12% CO2; sulfur - 200 pounds of SO2 per hour, or 2000 ppmv as SO2, or 0.11 pounds sulfur (as S) per MMBtu on average-wide basis for all units in Rule 4406 plan; NO2 - 140 pounds per hour or 0.14 pounds per MMBtu. [District Rules 4201, 3.0; 4301, 5.2; 4405, 5.2; 4406, 4.2 and 4801, 3.1] Federally Enforceable Through Title V Permit
20. Duration of startup and shutdown (as defined in Rule 4320) shall not exceed 2 hours each per occurrence. Refractory curing period is defined as a maintenance-based reduced-load period of time during which a unit is brought from a shutdown status to staged rates of firing for the sole purpose of curing new refractory lining of the unit, and shall not exceed 30 hours per occurrence. The operator shall maintain records of the duration of start-up, shutdown, and refractory curing periods. [District Rules 4305, 5.5; 4306, 5.3 and 4320, 5.6] 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, 5.4; 4306, 5.4 and 5.7] Federally Enforceable Through Title V Permit

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PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

22. If the NO<sub>x</sub> or CO concentrations corrected to 3% O<sub>2</sub>, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of the performing the notification and testing required by this condition. [District Rules 4305, 5.4; 4306, 5.4 and 4320, 5.7] 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, 5.5; 4306, 5.5 and 4320, 5.8] Federally Enforceable Through Title V Permit
24. The permittee shall maintain records of: (1) the date and time of NO<sub>x</sub>, CO, and O<sub>2</sub> measurements, (2) the O<sub>2</sub> concentration in percent and the measured NO<sub>x</sub> and CO concentrations corrected to 3% O<sub>2</sub>, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 5.4; 4306, 5.4 and 5.7] Federally Enforceable Through Title V Permit
25. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. Unless otherwise specified in the 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 4320. For the purposes of permittee-performed alternate monitoring, emissions measurements may be performed at any time after the unit reaches conditions representative of normal operation. [District Rules 4305, 5.5; 4306, 5.5 and 4320, 5.7] Federally Enforceable Through Title V Permit
26. Source testing to measure natural gas-combustion NO<sub>x</sub> and CO emissions from this unit shall be conducted at least once every twelve (12) months (no more than 30 days before or after the required annual source test date). After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months (no more than 30 days before or after the required 36-month source test date). If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 6.3; 4306, 6.3 and 4320, 6.3] Federally Enforceable Through Title V Permit
27. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 5.5; 4306, 5.5 and 4320, 5.8] Federally Enforceable Through Title V Permit
28. 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. 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. The following test methods shall be used: NO<sub>x</sub> (ppmv) - EPA Method 7E or ARB Method 100, NO<sub>x</sub> (lb/MMBtu) - EPA Method 19, CO (ppmv) - EPA Method 10 or 10B or ARB Method 100, stack gas oxygen - EPA Method 3 or 3A or ARB Method 100, SO<sub>x</sub> (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 H<sub>2</sub>S and mercaptans performed in a laboratory, fuel gas hhv - ASTM D1826 or D1945 in conjunction with ASTM D3588. [District Rules 1081, 6.1; 4305, 6.2; 4306, 6.2 and 4320, 6.2] Federally Enforceable Through Title V Permit

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

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; 4306, 5.5 and 4320, 5.5] Federally Enforceable Through Title V Permit
31. Only natural gas or a combination of natural gas and scrubbed non-condensable gas from sulfur scrubbing system(s) S-1547-359 shall be used as fuel in this steam generator. [District Rule 4320, 5.2] Federally Enforceable Through Title V Permit
32. For each steam generator site downstream of H<sub>2</sub>S scavenger chemical injection points, permittee shall monitor sulfur content of the gas prior to incineration in affected steam generators on a daily basis utilizing Draeger tubes calibrated for existing sulfur species or other District-approved fuel sulfur detection method(s) or device(s). If compliance with fuel sulfur content limit(s) for the affected steam generators is demonstrated for 5 consecutive days, then the monitoring frequency shall be weekly. [District Rule 4320] Federally Enforceable Through Title V Permit
33. Compliance with fuel sulfur limit(s) can be demonstrated either by monitoring sulfur content at location(s) after all fuel sources are combined prior to incineration, or by monitoring the sulfur content and volume of each fuel source and performing mass balance calculations. Records of monitoring locations, detected sulfur concentrations, and mass balance calculations, if necessary, shall be maintained and kept onsite and made readily available for District inspection upon request. [District Rules 1070 and 2520, 9.4.2] Federally Enforceable Through Title V Permit
34. Sample collection for compliance demonstration (source testing) shall be by an ARB certified testing laboratory and shall be District witnessed or authorized. [District Rule 1081] Federally Enforceable Through Title V Permit
35. All records shall be maintained for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070; 4305, 6.1; 4306, 6.1 and 4320, 6.1] Federally Enforceable Through Title V Permit
36. Permittee shall maintain accurate records of heating values (in Btu/scf) and daily consumption of natural gas/TEOR waste gas. [District Rule 4320, District Rules 1070 and 2520, 9.5.2] Federally Enforceable Through Title V Permit
37. NOTE: There are no sulfur compounds daily emission limits (DELs) expressed on this permit for incineration of TEOR gas, sulfur compounds emissions are limited by DELs on permit S-1547-359.
38. Formerly S-1511-253

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

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# ATTACHMENT B

Authorities to Construct  
S-1547-24-27, '-62-32, '-837-20



## AUTHORITY TO CONSTRUCT

**PERMIT NO:** S-1547-24-27

**ISSUANCE DATE:** 07/26/2011

**LEGAL OWNER OR OPERATOR:** AERA ENERGY LLC  
**MAILING ADDRESS:** PO BOX 11164  
BAKERSFIELD, CA 93389-1164

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

**SECTION:** V **TOWNSHIP:** V **RANGE:** V

**EQUIPMENT DESCRIPTION:**

MODIFICATION OF 62.5 MMBTU/HR NATURAL GAS-FIRED STEAM GENERATOR, WITH A COEN ULN LOW NOX BURNER AND FLUE GAS RECIRCULATION, APPROVED TO OPERATE AT VARIOUS SPECIFIED LOCATIONS (#47, DIS# 21944-77): REDUCE ALLOWABLE SULFUR CONTENT OF NATURAL GAS FROM 19.3 TO 5 GRAINS/100 SCF FOR RULE 4320 COMPLIANCE

### CONDITIONS

1. The facility shall submit an application to modify the Title V permit in accordance with the timeframes and procedures of District Rule 2520. [District Rule 2520] Federally Enforceable Through Title V Permit
2. Approved locations for this steam generator are: NE12 T30S R21E (Calso Lease) and Sec. 33 T28S, R21E. [District NSR Rule] Federally Enforceable Through Title V Permit
3. Permittee shall notify the District at least 48 hours prior to transfer between approved locations. [District NSR Rule] Federally Enforceable Through Title V Permit
4. All required source testing shall conform to the compliance testing procedures described in District Rule 1081 (Last Amended December 16, 1993). [District Rule 1081] Federally Enforceable Through Title V Permit
5. Copies of all fuel invoices showing quantity and delivery points of supplier-certified gas delivered and copies of quality terms of supplier-certified gas delivery contracts shall be maintained. The operator shall record daily amount and type(s) of fuel(s) combusted 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
6. Operator shall maintain all records of required monitoring data and support information for inspection at any time for a period of five years. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director / APCO

7. 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
8. When complying with SO<sub>x</sub> emission limits by testing of stack emissions, testing shall be performed not less than once every 12 months using EPA Method 6; or EPA Method 6B; or EPA Method 8; or ARB Methods 8 or 100; or, for units using gaseous fuel scrubbed for sulfur pre-combustion, a grab sample analysis by double GC for H<sub>2</sub>S and mercaptans performed in the laboratory and EPA Method 19 to calculate 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
9. If the unit is fired on noncertified gaseous fuel and compliance with SO<sub>x</sub> 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, D3246, D 4084, or grab sample analysis by double GC for H<sub>2</sub>S and mercaptans performed in the laboratory. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
10. If fuel analysis is used to demonstrate compliance with conditions of this permit, the fuel higher heating value for each fuel shall be certified by a third party fuel supplier or determined by ASTM D 1826 or D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District Rules 2520, 9.3.2, 4305, 6.2.1, and 4306, 6.2.1] Federally Enforceable Through Title V Permit
11. 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), 4301 (Amended December 17, 1992), 4406 (Amended December 17, 1992), and Rule 4801 (Amended December 17, 1992). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
12. Compliance with permit conditions in the Title V permit shall be deemed compliance with the requirements of 40 CFR 60, Subpart Dc (except 60.44c(g) and (h) and 60.48c). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
13. 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) 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
14. Duration of start-up and shutdown shall not exceed 2 hours each per occurrence. [District Rules 4305, 5.5.6 and 4306, 5.5.6] Federally Enforceable Through Title V Permit
15. Duration of refractory curing shall not exceed 30 hours each per occurrence. Permittee shall notify the District in writing prior to refractory curing. [District Rule 2080] Federally Enforceable Through Title V Permit
16. Permittee shall maintain records of duration of each start-up, shutdown and refractory curing, for a period of five years and make such records readily available for District inspection upon request. [District Rules 2080 & 4305, 6.1.5 and 4306, 6.1.4] Federally Enforceable Through Title V Permit
17. Emission rates, except during startup, shutdown, and refractory curing, shall not exceed any of the following PM<sub>10</sub>: 0.058 lb/MMBtu, SO<sub>x</sub> (as SO<sub>2</sub>): 0.014 lb/MMBtu, VOC: 0.003 lb/MMBtu, NO<sub>x</sub> (as NO<sub>2</sub>): 0.018 lb/MMBtu or 15 ppmv @ 3% O<sub>2</sub>, or CO: 50 ppmv @ 3% O<sub>2</sub>. [District NSR Rule and District Rules 2520, 9.1, 4201, 4301, 5.2, 4305, 5.1, and 4306, 5.1] Federally Enforceable Through Title V Permit
18. Emission rates during refractory curing shall not exceed: particulate matter - 10 pounds per hour, or 0.1 grains/dscf calculated to 12% CO<sub>2</sub>; sulfur - 200 pounds of SO<sub>2</sub> per hour, or 2000 ppmv as SO<sub>2</sub>, or 0.11 pounds sulfur (as S) per MMBtu on average-wide basis for all units in Rule 4406 plan; NO<sub>2</sub> - 140 pounds per hour or 0.14 pounds per MMBtu. [District Rules 4101, 4102, 4301, 5.0, 4405, 4406, and 4801 and Kern County Rule 407] Federally Enforceable Through Title V Permit
19. Natural gas fuel sulfur content shall not exceed 5.0 gr S/100 scf. [District NSR Rule] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

20. The permittee shall monitor and record the stack concentration of NO<sub>x</sub>, CO, and O<sub>2</sub> at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305, 5.4.2 and 4306, 5.4] Federally Enforceable Through Title V Permit
21. If either the NO<sub>x</sub> or CO concentrations corrected to 3% O<sub>2</sub>, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100 (amended December 17, 1992), 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] 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, 5.4.2 and 4306, 5.4] Federally Enforceable Through Title V Permit
23. The permittee shall maintain records of: (1) the date and time of NO<sub>x</sub>, CO, and O<sub>2</sub> measurements, (2) the O<sub>2</sub> concentration in percent and the measured NO<sub>x</sub> and CO concentrations corrected to 3% O<sub>2</sub>, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 5.4.2 and 4306, 5.4] Federally Enforceable Through Title V Permit
24. All emission measurements for NO<sub>x</sub> and CO shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. Unless otherwise specified in the Permit to Operate, no determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4305 (amended August 21, 2003). For the purposes of permittee performed alternate monitoring, emissions measurements may be performed at any time after the unit reaches conditions representative of normal operation, (amended August 21, 2003). [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
25. Source testing to measure natural gas NO<sub>x</sub> and CO emissions from this unit shall be conducted at least once every twelve (12) months, (no more than 30 days before of after the required annual source test date). After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months (no more than 30 days before of after the required annual source test date). If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306, and 4320] 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, 5.5.1 and 4306, 5.5.1] 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

CONDITIONS CONTINUE ON NEXT PAGE

29. Compliance demonstration (source testing) shall be by District witnessed, or authorized. Sample collection shall be by an ARB certified testing laboratory. [District Rule 1081] Federally Enforceable Through Title V Permit
30. The following test methods shall be used: NO<sub>x</sub> (ppmv) - EPA Method 7E or ARB Method 100, NO<sub>x</sub> (lb/MMBtu) - EPA Method 19, CO (ppmv) - EPA Method 10 or ARB Method 100, stack gas oxygen - EPA Method 3 or 3A or ARB Method 100, and fuel gas sulfur content - ASTM D3246 or double GC for H<sub>2</sub>S and mercaptans. [District Rules 1081, 4305, 6.2, and 4306, 6.2] 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, 5.5.5 and 4306, 5.5.5] Federally Enforceable Through Title V Permit
32. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District NSR Rule, District Rules 1070, 2520, 9.4.2; 4305, 6.1; and 4306, 6.1] 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]
34. Pursuant to Rule 4320, beginning in 2010 the operator shall pay an annual emission fee to the District for NO<sub>x</sub> 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 NO<sub>x</sub> emission limit listed in Rule 4320. [District Rule 4320]



## AUTHORITY TO CONSTRUCT

**PERMIT NO:** S-1547-62-32

**ISSUANCE DATE:** 07/26/2011

**LEGAL OWNER OR OPERATOR:** AERA ENERGY LLC  
**MAILING ADDRESS:** PO BOX 11164  
BAKERSFIELD, CA 93389-1164

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

**SECTION:** NW12 **TOWNSHIP:** 29S **RANGE:** 21E

**EQUIPMENT DESCRIPTION:**

MODIFICATION OF 62.5 MMBTU/HR C.E. NATCO NATURAL GAS FIRED STEAM GENERATOR WITH A COEN QLN-ULN LOW-NOX BURNER AND FLUE GAS RECIRCULATION (#12-2C, DIS# 19175-75): REDUCE ALLOWABLE SULFUR CONTENT OF NATURAL GAS FROM 19.3 TO 5 GRAINS/100 SCF FOR STEAM GENERATOR '24 FOR RULE 4320 COMPLIANCE

## CONDITIONS

1. The facility shall submit an application to modify the Title V permit in accordance with the timeframes and procedures of District Rule 2520. [District Rule 2520] Federally Enforceable Through Title V Permit
2. All required source testing shall conform to the compliance testing procedures described in District Rule 1081(Last Amended December 16, 1993). [District Rule 1081] Federally Enforceable Through Title V Permit
3. Copies of all fuel invoices showing quantity and delivery points of gas delivered and copies of quality terms of gas delivery contracts shall be maintained. The operator shall record daily amount and type(s) of fuel(s) combusted 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
4. The operator shall maintain all records of required monitoring data and support information for inspection at any time for a period of five years. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director / APCO

5. 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 has been demonstrated for 8 consecutive weeks for a fuel source, then the 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
6. When complying with SO<sub>x</sub> emission limits by testing of stack emissions, testing shall be performed not less than once every 12 months using EPA Method 6; or EPA Method 6B; or EPA Method 8; or ARB Methods 8 or 100; or, for units using gaseous fuel scrubbed for sulfur pre-combustion, a grab sample analysis by double GC for H<sub>2</sub>S and mercaptans performed in the laboratory and EPA Method 19 to calculate 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
7. If the unit is fired on noncertified gaseous fuel and compliance with SO<sub>x</sub> 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 4468, D 4084, D3246 or grab sample analysis by double GC for H<sub>2</sub>S and mercaptans performed in the laboratory. [District Rule 2520, 9.3.2; 4305, 6.2.1, and 4351, 6.2.1] Federally Enforceable Through Title V Permit
8. If fuel analysis is used to demonstrate compliance with conditions of this permit, the fuel higher heating value for each fuel shall be certified by a third party fuel supplier or determined by ASTM D 1826 or D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District Rule 2520, 9.3.2; 4305, 6.2.1; and 4351, 6.2.1] Federally Enforceable Through Title V Permit
9. Compliance with permit conditions in the Title V permit shall be deemed compliance with the requirements of Kern County Rules 108.1, 404, 408, and 407.2. A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
10. 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), 4301 (Amended December 17, 1992), 4406 (Amended December 17, 1992, and Rule 4801 (Amended December 17, 1992). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
11. Compliance with permit conditions in the Title V permit shall be deemed compliance with the requirements of 40 CFR 60, Subpart Dc (except 60.44c(g) and (h) and 60.48c). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
12. 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) 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
13. This equipment is approved to be operated at the following locations: Section 18, T28S/R21E and NW/4 Section 12, T29S/R21E. [District NSR Rule] Federally Enforceable Through Title V Permit
14. The permittee shall notify the District Compliance Division of each location at which the operation is located in excess of 24 hours. Such notification shall be made no later than 48 hours after starting operation at the location. [District NSR Rule] Federally Enforceable Through Title V Permit
15. This unit shall be fired exclusively on natural gas which may consist of one or a mixture of fuels including treated produced gas and purchased gas with a sulfur content not to exceed 19.3 gr/100 scf. [District NSR Rule] Federally Enforceable Through Title V Permit
16. Emission rates, except during startup, shutdown, and refractory curing shall not exceed any of the following PM<sub>10</sub>: 0.058 lb/MMBtu, SO<sub>x</sub> (as SO<sub>2</sub>): 0.014 lb/MMBtu, VOC: 0.003 lb/MMBtu, NO<sub>x</sub> (as NO<sub>2</sub>): 0.018 lb/MMBtu or 15 ppmv @ 3% O<sub>2</sub>, or CO: 0.030 lb/MMBtu or 40 ppmv @ 3% O<sub>2</sub>. [District NSR Rule, 2520, 4201, 4301, 4305, 4306, 4405, 4406, 4801 and Kern County Rules 424 and 425] Federally Enforceable Through Title V Permit
17. Natural gas fuel sulfur content shall not exceed 5.0 gr S/100 scf. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

18. Emission rates during startup, shutdown and refractory curing shall not exceed: particulate matter - 10 pounds per hour, or 0.1 grains/dscf calculated to 12% CO<sub>2</sub>; sulfur - 200 pounds of SO<sub>2</sub> per hour, or 2000 ppmv as SO<sub>2</sub>, or 0.11 pounds sulfur (as S) per MMBtu on average-wide basis for all units in Rule 4406 plan; NO<sub>2</sub> - 140 pounds per hour or 0.14 pounds per MMBtu. [District Rules 4101, 4102, 4301, 4405, 4406, 4801 and Kern County Rules 424 and 425] Federally Enforceable Through Title V Permit
19. Emission rates of NO<sub>x</sub> (as NO<sub>2</sub>) shall not exceed 54.0 lb/day or 9855 lb/year. [District Rule 2201] Federally Enforceable Through Title V Permit
20. Duration of start-up and shutdown shall not exceed 2 hours each per occurrence. [District Rule 4305 and 4306] Federally Enforceable Through Title V Permit
21. Duration of refractory curing shall not exceed 30 hours each per occurrence. Permittee shall notify the District in writing prior to refractory curing. [District Rule 2080] Federally Enforceable Through Title V Permit
22. Permittee shall maintain records of duration of each start-up and shutdown, and refractory curing, for a period of five years and make such records readily available for District inspection upon request. [District Rule 4306] Federally Enforceable Through Title V Permit
23. The permittee shall monitor and record the stack concentration of NO<sub>x</sub>, CO, and O<sub>2</sub> at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
24. If the NO<sub>x</sub> or CO concentrations corrected to 3% O<sub>2</sub>, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of the performing the notification and testing required by this condition. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
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 and 4306] Federally Enforceable Through Title V Permit
26. The permittee shall maintain records of: (1) the date and time of NO<sub>x</sub>, CO, and O<sub>2</sub> measurements, (2) the O<sub>2</sub> concentration in percent and the measured NO<sub>x</sub> and CO concentrations corrected to 3% O<sub>2</sub>, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
27. All emission measurements for NO<sub>x</sub> and CO shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. Unless otherwise specified in the Permit to Operate, no determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3 of District Rule 4305 (amended August 21, 2003). For the purposes of permittee performed alternate monitoring, emissions measurements may be performed at any time after the unit reaches conditions representative of normal operation. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

28. Whenever the unit is switched to operate with the flue gas recirculation (FGR) system in the closed position, compliance source testing for NO<sub>x</sub> and CO shall be conducted within 60 days of cessation of FGR operation date unless source testing with FGR system in the closed position has occurred within the previous 12 months. [District Rule 1070] Federally Enforceable Through Title V Permit
29. Source testing to measure natural gas-combustion NO<sub>x</sub> and CO emissions from this unit shall be conducted at least once every twelve (12) months (no more than 30 days before or after the required annual source test date). After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months (no more than 30 days before or after the required 36-month source test date). If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
30. 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
31. 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. 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. The following test methods shall be used: NO<sub>x</sub> (ppmv) - EPA Method 7E or ARB Method 100, NO<sub>x</sub> (lb/MMBtu) - EPA Method 19, CO (ppmv) - EPA Method 10 or 10B or ARB Method 100, stack gas oxygen - EPA Method 3 or 3A or ARB Method 100, SO<sub>x</sub> (lb/MMBtu) - ARB Method 8 or 100 or EPA Method 6, 6B or 8 or fuel gas sulfur content analysis and EPA Method 19, fuel gas sulfur content - ASTM D1072, D4468, D3246, D3246, D4084 or double GC for H<sub>2</sub>S and mercaptans performed in laboratory, fuel gas hhv - ASTM D1826 or D1945 in conjunction with ASTM D3588. [District Rule 1081, and 4305, 6.2] Federally Enforceable Through Title V Permit
33. 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
34. All records shall be maintained 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



# AUTHORITY TO CONSTRUCT

**PERMIT NO:** S-1547-837-20

**ISSUANCE DATE:** 07/26/2011

**LEGAL OWNER OR OPERATOR:** AERA ENERGY LLC  
**MAILING ADDRESS:** PO BOX 11164  
BAKERSFIELD, CA 93389-1164

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

**SECTION:** NW11 **TOWNSHIP:** 29S **RANGE:** 21E

**EQUIPMENT DESCRIPTION:**

MODIFICATION OF 62.5 MMBTU/HR NATURAL GAS/VAPOR RECOVERY GAS FIRED STEAM GENERATOR WITH A COEN ULN LOW NOX BURNER, FLUE GAS RECIRCULATION, AND NON-CONDENSIBLE PIPING FROM VAPOR CONTROL SYSTEM S-1547-359. (#11-1F) (BELRIDGE): REDUCE ALLOWABLE SULFUR CONTENT OF NATURAL GAS TO 5 GRAINS/100 SCF FOR RULE 4320 COMPLIANCE

## CONDITIONS

1. The facility shall submit an application to modify the Title V permit in accordance with the timeframes and procedures of District Rule 2520. [District Rule 2520] Federally Enforceable Through Title V Permit
2. Copies of all fuel invoices showing quantity and delivery points of gas delivered and copies of quality terms of gas delivery contracts shall be maintained. The operator shall record daily amount and type(s) of fuel(s) combusted 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
3. Nitrogen oxide (NOx) emissions shall not exceed 140 lb/hr, calculated as NO2. [District Rules 4301, 5.2.2 and 2520, 9.4.2] Federally Enforceable Through Title V Permit
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

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director / APCO

5. Emissions from gaseous fired units shall not exceed 200 lb sulfur compounds/hour, calculated as SO<sub>2</sub>. 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 4301, 5.2.1, and 2520, 9.4.2] Federally Enforceable Through Title V Permit
6. Sulfur emissions shall not exceed 0.11 lb of sulfur per million BTU of heat input, averaged over 3 - one hour periods. Compliance with this requirement may be demonstrated by firing the unit only on PUC or FERC regulated natural gas; multiplying the reported sulfur content of each fuel in lb/MMBtu by the maximum heat input rating of the unit; or by a combination of source testing for sulfur compounds and fuel analysis. Compliance may be demonstrated for this unit individually, or by showing that the total emissions of sulfur compounds from all steam generators located at the stationary source with ATC or PTO issued prior to September 12, 1979 does not exceed the emissions that would result if each unit was operating in compliance with the specified limit. [Kern County Rule 424 and District Rule 4406] 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 has been demonstrated for 8 consecutive weeks for a fuel source, then the 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. If fuel analysis is used to demonstrate compliance with conditions of this permit, the fuel higher heating value for each fuel shall be certified by a third party fuel supplier or determined by ASTM D 1826 or 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
9. The operator shall demonstrate compliance with this unit's sulfur compound exhaust concentration limit(s) using one of the following: test the sulfur content of each fuel source, or determine that the concentration of sulfur compounds in the exhaust does not exceed the concentration limit by a combination of source testing and fuel analysis. [District Rules 2520, 9.4.2, 4301, 5.2.1 and Rule 4801, 3.1] Federally Enforceable Through Title V Permit
10. Compliance with permit conditions in the Title V permit shall be deemed compliance with the requirements of 40 CFR 60, Subpart Dc (except 60.44c(g) and (h) and 60.48c). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
11. Steam generator shall be equipped with operational fuel gas volumetric flow meter. [District NSR Rule] Federally Enforceable Through Title V Permit
12. Steam generator shall be equipped with operational vapor control system gas supply volumetric flow meter whenever unit is connected to the vapor control system gas supply. [District Rule 2201] Federally Enforceable Through Title V Permit
13. Maximum TEOR gas flow rate for this unit shall not exceed 1,300 Mcf/day. [District NSR Rule] Federally Enforceable Through Title V Permit
14. When fired exclusively on natural gas, except during startup, shutdown, and refractory curing, emissions from this unit shall not exceed either of the following limits: PM<sub>10</sub>: 0.005 lb/MMBtu or SO<sub>x</sub> (as SO<sub>2</sub>): 0.002 lb/MMBtu. [District NSR Rule, Rules 2520, 4301, 4406, 4801 and Kern County Rule 424] Federally Enforceable Through Title V Permit
15. When natural gas and TEOR gas fired, except during startup, shutdown, and refractory curing, maximum PM<sub>10</sub> emissions shall not exceed the lb/hr limit calculated as follows:  $PM_{10} = \{(7.0 \text{ lb/day}) + (249.2 \text{ lb/day}) \times (\text{fraction of total TEOR gas incinerated in this unit during testing})\} / (24 \text{ hr/day})$ . [District Rules 2201, 2520, 4201 and 4301] Federally Enforceable Through Title V Permit
16. Steam generator shall be operated at no greater than 1,466.7 MMBtu hhw/day heat input. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

17. The total fuel burned in this unit shall not be PUC-quality natural gas be less than 50% by volume PUC quality natural gas determined on a calendar month basis. PUC quality natural gas is any gaseous fuel where the sulfur content is no more than one-fourth (0.25) grain of hydrogen sulfide per one hundred (100) standard cubic feet, no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet, and at least 80% methane by volume. [District Rule 4320] Federally Enforceable Through Title V Permit
18. Fuel H<sub>2</sub>S, total sulfur, and methane content shall be determined semi-annually using the following test methods (or other approved methods listed in this permit) H<sub>2</sub>S: ASTM D6228; total sulfur: ASTM D1072; ASTM D3246, or ASTM D6228; and methane content: ASTM D1945. A separate H<sub>2</sub>S test is not required if results of total sulfur demonstrates compliance with applicable H<sub>2</sub>S limits. [District Rule 4320] Federally Enforceable Through Title V Permit
19. Emission rates, except during startup, shutdown, and refractory curing shall not exceed any of the following: VOC: 0.003 lb/MMBtu, NO<sub>x</sub> (as NO<sub>2</sub>): 0.014 lb/MMBtu or 12 ppmv @ 3% O<sub>2</sub>, or CO: 0.030 lb/MMBtu or 40.0 ppmv @ 3% O<sub>2</sub>. [District NSR Rule and Rules 2520, 4301, 4305, 4306, 4405 and Kern County Rule 425] Federally Enforceable Through Title V Permit
20. Natural gas fuel sulfur content shall not exceed 5.0 gr S/100 scf. [District Rule 2201]
21. Emission rates during startup, shutdown and refractory curing shall not exceed: particulate matter - 10 pounds per hour, or 0.1 grains/dscf calculated to 12% CO<sub>2</sub>; sulfur - 200 pounds of SO<sub>2</sub> per hour, or 2000 ppmv as SO<sub>2</sub>, or 0.11 pounds sulfur (as S) per MMBtu on average-wide basis for all units in Rule 4406 plan; NO<sub>2</sub> - 140 pounds per hour or 0.14 pounds per MMBtu. [District Rules 4101, 4102, 4301, 4405, 4406, 4801 and Kern County Rules 424 and 425] Federally Enforceable Through Title V Permit
22. Duration of startup and shutdown (as defined in Rule 4320) shall not exceed 2 hours each per occurrence. Refractory curing period is defined as a maintenance-based reduced-load period of time during which a unit is brought from a shutdown status to staged rates of firing for the sole purpose of curing new refractory lining of the unit, and shall not exceed 30 hours per occurrence. The operator shall maintain records of the duration of start-up, shutdown, and refractory curing periods. [District Rules 4305, 4306 and 4320]
23. The permittee shall monitor and record the stack concentration of NO<sub>x</sub>, CO, and O<sub>2</sub> at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305, 5.4 and 4306, 5.4] Federally Enforceable Through Title V Permit
24. If the NO<sub>x</sub> or CO concentrations corrected to 3% O<sub>2</sub>, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of the performing the notification and testing required by this condition. [District Rules 4305, 5.4 and 4306, 5.4] 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 and 4306, 5.4] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

26. The permittee shall maintain records of: (1) the date and time of NO<sub>x</sub>, CO, and O<sub>2</sub> measurements, (2) the O<sub>2</sub> concentration in percent and the measured NO<sub>x</sub> and CO concentrations corrected to 3% O<sub>2</sub>, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 5.4 and 4306, 5.4] 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. Unless otherwise specified in the Permit to Operate no determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4320. For the purposes of permittee-performed alternate monitoring, emissions measurements may be performed at any time after the unit reaches conditions representative of normal operation. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
28. Source testing to measure natural gas-combustion NO<sub>x</sub> and CO emissions from this unit shall be conducted at least once every twelve (12) months (no more than 30 days before or after the required annual source test date). After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months (no more than 30 days before or after the required 36-month source test date). If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 6.3.1 and 4306, 6.3.1] Federally Enforceable Through Title V Permit
29. 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
30. 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. 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
31. The following test methods shall be used: NO<sub>x</sub> (ppmv) - EPA Method 7E or ARB Method 100, NO<sub>x</sub> (lb/MMBtu) - EPA Method 19, CO (ppmv) - EPA Method 10 or 10B or ARB Method 100, stack gas oxygen - EPA Method 3 or 3A or ARB Method 100, SO<sub>x</sub> (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 H<sub>2</sub>S and mercaptans performed in a laboratory, fuel gas hhv - ASTM D1826 or D1945 in conjunction with ASTM D3588. [District Rules 1081, 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, 5.5.5 and 4306, 5.5.5] Federally Enforceable Through Title V Permit
33. Annual test results submitted to the District from unit(s) representing a group of units may be used to measure NO<sub>x</sub> and CO 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 NO<sub>x</sub> 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. (This requirement shall not supersede a more stringent NSR or PSD permit testing requirement.). [District Rule 4305, 6.3.2; 4306, 6.3.2 and 4351, 6.3] Federally Enforceable Through Title V Permit
34. The following conditions must be met for representative unit(s) to be used to test for NO<sub>x</sub> and CO 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 4305, 6.3.2 and 4306, 6.3.2] Federally Enforceable Through Title V Permit
35. All units in a group for which representative units are source for NO<sub>x</sub> and CO emissions shall have received the same maintenance and tune-up procedures as the representative unit(s). These tune-up procedures shall be completed according to District Rule 4304 (Adopted October 19, 1995) and tune-up test results shall show comparable results for each unit in the group. Records shall be maintained for the each unit of the group including all preventative and corrective maintenance work done. [District Rules 4305, 6.3.2 and 4306, 6.3.2] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

36. All units in a group for which representative units are source tested to for NO<sub>x</sub> and CO emissions of 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 4305, 6.3.2 and 4306, 6.3.2] Federally Enforceable Through Title V Permit
37. Only natural gas or a combination of natural gas and scrubbed non-condensable gas from sulfur scrubbing system(s) S-1547-359 shall be used as fuel in this steam generator. [District NSR Rule] Federally Enforceable Through Title V Permit
38. For each steam generator site downstream of H<sub>2</sub>S scavenger chemical injection points, permittee shall monitor sulfur content of the gas prior to incineration in affected steam generators on a daily basis utilizing Draeger tubes calibrated for existing sulfur species or other District-approved fuel sulfur detection method(s) or device(s). If compliance with fuel sulfur content limit(s) for the affected steam generators is demonstrated for 5 consecutive days, then the monitoring frequency shall be weekly. [District NSR Rule] Federally Enforceable Through Title V Permit
39. Compliance with fuel sulfur limit(s) can be demonstrated either by monitoring sulfur content at location(s) after all fuel sources are combined prior to incineration, or by monitoring the sulfur content and volume of each fuel source and performing mass balance calculations. Records of monitoring locations, detected sulfur concentrations, and mass balance calculations, if necessary, shall be maintained and kept onsite and made readily available for District inspection upon request. [District Rules 1070 and 2520, 9.4.2] Federally Enforceable Through Title V Permit
40. Sample collection for compliance demonstration (source testing) shall be by an ARB certified testing laboratory and shall be District witnessed or authorized. [District Rule 1081] Federally Enforceable Through Title V Permit
41. All records shall be maintained 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
42. Permittee shall maintain accurate records of heating values (in Btu/scf) and daily consumption of natural gas/TEOR waste gas. [District NSR Rule, District Rules 1070 and 2520, 9.5.2] Federally Enforceable Through Title V Permit
43. NOTE: There are no sulfur compounds daily emission limits (DELS) expressed on this permit for incineration of TEOR gas, sulfur compounds emissions are limited by DELS on permit S-1547-359.
44. Formerly S-1511-253

# ATTACHMENT C

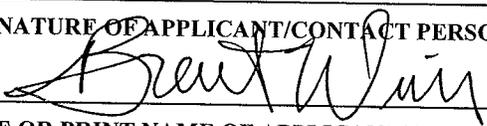
Permit Application

# San Joaquin Valley Air Pollution Control District

## APPLICATION FOR TITLE V MODIFICATION:

RECEIVED  
**APR 30 2012**  
 SJVAPCD  
 Southern Region

- ADMINISTRATIVE AMENDMENT
- MINOR MODIFICATION
- SIGNIFICANT MODIFICATION

1. PERMIT TO BE ISSUED TO: <b>AERA ENERGY LLC</b>	
2. MAILING ADDRESS: STREET/P.O. BOX: _____ CITY: <b>P.O. BOX 11164</b> STATE: <b>CA</b> 9-DIGIT ZIP CODE: <b>93389-1164</b>	
3. LOCATION WHERE THE EQUIPMENT WILL BE OPERATED: STREET: <b>Heavy Oil Western Source (S-1547)</b> CITY: _____ _____ 1/4 SECTION <input checked="" type="checkbox"/> TOWNSHIP <input checked="" type="checkbox"/> RANGE <input checked="" type="checkbox"/>	INSTALLATION DATE: _____
4. GENERAL NATURE OF BUSINESS:	
5. EQUIPMENT FOR WHICH APPLICATION IS MADE (Include Permit Nos.): Convert the following ATC(s) to PTO with operating conditions incorporated into the Title V permit: <b>S-1547-24-27, '-62-32, '-837-20</b>	
(Use additional sheets if necessary)	
6. DO YOU REQUEST A CERTIFICATE OF CONFORMITY WITH THIS ACTION? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
7. IS THIS APPLICATION SUBMITTED AS A RESULT OF A NOV/NTC? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO NOV/NTC No.: _____	
8. SIGNATURE OF APPLICANT/CONTACT PERSON: 	TYPE OR PRINT TITLE OF APPLICANT: <b>Environmental Engineer</b>
9. TYPE OR PRINT NAME OF APPLICANT/CONTACT: <b>Brent Winn</b>	DATE: <b>4/30/12</b>
10. FAX NUMBER: <b>(661) 665-7437</b>	TELEPHONE NUMBER: <b>(661) 665-4363</b>

FOR APCD USE ONLY:

No \$

DATE STAMP	FILING FEE RECEIVED: \$ _____ DATE PAID: _____ PROJECT NO.: <b>S-1121388</b> FACILITY REGION & ID: <b>S-1547</b>
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Title V - Minor Mod

**San Joaquin Valley  
Unified Air Pollution Control District**

RECEIVED  
**APR 30 2012**  
SJVAPCD  
Southern Region

**TITLE V COMPLIANCE CERTIFICATION FORM**

Add Rule 4320 Sulfur Limits	
Permit No.	Steam Gen ID
S-1547-24-27	47
S-1547-62-32	12-2C
S-1547-837-20	11-1F

**I. TYPE OF PERMIT ACTION (Check appropriate box)**

- SIGNIFICANT PERMIT MODIFICATION       ADMINISTRATIVE  
 MINOR PERMIT MODIFICATION                       AMENDMENT

COMPANY NAME: Aera Energy LLC	FACILITY ID: S-1547
1. Type of Organization: <input checked="" type="checkbox"/> Corporation <input type="checkbox"/> Sole Ownership <input type="checkbox"/> Government <input type="checkbox"/> Partnership <input type="checkbox"/> Utility	
2. Owner's Name: Aera Energy LLC	
3. Agent to the Owner: N/A	

**II. COMPLIANCE CERTIFICATION (Read each statement carefully and initial each circle for confirmation):**

- Based on information and belief formed after reasonable inquiry, the emission units identified in this application will continue to comply with the applicable federal requirement(s) which the emission units are in compliance.
- Based on information and belief formed after reasonable inquiry, the emission units identified in this application will comply with applicable federal requirement(s) that will become effective during the permit term, on a timely basis.
- Corrected information will be provided to the District when I become aware that incorrect or incomplete information has been submitted.
- 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:

Brian Kachelhoffer

Signature of Responsible Official

4/30/12

Date

B.P. Kachelhoffer

Name of Responsible Official (please print)

Process Supervisor

Title of Responsible Official (please print)

# ATTACHMENT D

Previous Title V (Draft) PTO  
S-1547-24-20, '-62-24, and '-837-22  
(in draft form)

# San Joaquin Valley Air Pollution Control District

**PERMIT UNIT:** S-1547-24-20

**EXPIRATION DATE:** 05/31/2016

**SECTION:** V **TOWNSHIP:** V **RANGE:** V

**EQUIPMENT DESCRIPTION:**

62.5 MMBTU/HR NATURAL GAS-FIRED STEAM GENERATOR, WITH A COEN ULN LOW NOX BURNER AND FLUE GAS RECIRCULATION, APPROVED TO OPERATE AT VARIOUS SPECIFIED LOCATIONS (#47, DIS# 21944-77)

## PERMIT UNIT REQUIREMENTS

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1. Approved locations for this steam generator are: NE12 T30S R21E (Calso Lease) and Sec. 33 T28S, R21E. [District Rule 2201] Federally Enforceable Through Title V Permit
2. Permittee shall notify the District at least 48 hours prior to transfer between approved locations. [District Rule 2201] Federally Enforceable Through Title V Permit
3. Copies of all fuel invoices showing quantity and delivery points of supplier-certified gas delivered and copies of quality terms of supplier-certified gas delivery contracts shall be maintained. The operator shall record daily amount and type(s) of fuel(s) combusted 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
4. 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
5. 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 EPA Method 6B; or EPA Method 8; or ARB Methods 8 or 100; or, for units using gaseous fuel scrubbed for sulfur pre-combustion, a grab sample analysis by double GC for H2S and mercaptans performed in the laboratory and EPA Method 19 to calculate 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
6. If the unit is fired on noncertified gaseous fuel and compliance with SOx emission limits is achieved through fuel sulfur content limitations, the following test methods (or other approved methods listed in this permit) shall be used; H2S: ASTM D6228 or grab sample analysis by double GC for H2S and mercaptans performed in the laboratory; total sulfur: ASTM 1072, D3246, D4084 or D6228. [District Rules 4305, 6.2, and 4306, 6.2] Federally Enforceable Through Title V Permit
7. If fuel analysis is used to demonstrate compliance with conditions of this permit, the fuel higher heating value for each fuel shall be certified by a third party fuel supplier or determined by ASTM D 1826 or D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District Rules 4305, 6.2 and 4306, 6.2] Federally Enforceable Through Title V Permit
8. Compliance with permit conditions in the Title V permit shall be deemed compliance with the requirements of 40 CFR 60, Subpart Dc (except 60.44c(g) and (h) and 60.48c). 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

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

9. Emission rates, except during startup, shutdown, and refractory curing, shall not exceed any of the following PM10: 0.058 lb/MMBtu, SO<sub>x</sub> (as SO<sub>2</sub>): 0.055 lb/MMBtu, VOC: 0.003 lb/MMBtu, NO<sub>x</sub> (as NO<sub>2</sub>): 0.018 lb/MMBtu or 15 ppmv @ 3% O<sub>2</sub>, or CO: 50 ppmv @ 3% O<sub>2</sub>. [District Rules 2201, 4305, 5.1 and 4306, 5.1] Federally Enforceable Through Title V Permit
10. Emission rates during refractory curing shall not exceed: particulate matter - 10 pounds per hour, or 0.1 grains/dscf calculated to 12% CO<sub>2</sub>; sulfur - 200 pounds of SO<sub>2</sub> per hour, or 2000 ppmv as SO<sub>2</sub>, or 0.11 pounds sulfur (as S) per MMBtu on average-wide basis for all units in Rule 4406 plan; NO<sub>2</sub> - 140 pounds per hour or 0.14 pounds per MMBtu. [District Rules 4301, 5.2; 4405, 5.2; 4406, 4.2 and 4801, 3.1] Federally Enforceable Through Title V Permit
11. Natural gas fuel sulfur content shall not exceed 19.3 gr S/100 scf. [District Rule 2201] Federally Enforceable Through Title V Permit
12. Duration of startup and shutdown (as defined in Rule 4306) shall not exceed 2 hours each per occurrence. Refractory curing period is defined as a maintenance-based reduced-load period of time during which a unit is brought from a shutdown status to staged rates of firing for the sole purpose of curing new refractory lining of the unit, and shall not exceed 30 hours per occurrence. The operator shall maintain records of the duration of start-up, shutdown, and refractory curing periods. [District Rules 4405, 5.5 & 6.1 and 4306, 5.3 & 6.1] Federally Enforceable Through Title V Permit
13. The permittee shall monitor and record the stack concentration of NO<sub>x</sub>, CO, and O<sub>2</sub> at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305, 5.4; 4306, 5.5 and 4320, 5.7] Federally Enforceable Through Title V Permit
14. If either the NO<sub>x</sub> or CO concentrations corrected to 3% O<sub>2</sub>, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100 (amended December 17, 1992), 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
15. All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the permit-to-operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 4305, 5.5 and 4306, 5.5] Federally Enforceable Through Title V Permit
16. The permittee shall maintain records of: (1) the date and time of NO<sub>x</sub>, CO, and O<sub>2</sub> measurements, (2) the O<sub>2</sub> concentration in percent and the measured NO<sub>x</sub> and CO concentrations corrected to 3% O<sub>2</sub>, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 5.4 and 4306, 5.4] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

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. Unless otherwise specified in the Permit to Operate No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of Rule 4306. For the purposes of permittee-performed alternate monitoring, emissions measurements may be performed at any time after the unit reaches conditions representative of normal operation. [District Rules 4305, 5.5.2 and 4306, 5.5.2] Federally Enforceable Through Title V Permit
18. Source testing to measure natural gas combustion NOx and CO emissions from this unit shall be conducted at least once every twelve (12) months (no more than 30 days before or after the required annual source test date). After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months (no more than 30 days before or after the required 36-month source test date). If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 6.3 and 4306, 6.3] 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 and 4306, 5.5] Federally Enforceable Through Title V Permit
20. 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. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081, 7.1] Federally Enforceable Through Title V Permit
21. 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, SOx (lb/MMBtu) - ARB Method 8 or 100 or EPA Method 6, 6B or 8 or fuel gas sulfur content analysis and EPA Method 19, fuel gas sulfur content - ASTM D1072, D4468, D3246, D4084 or double GC for H2S and mercaptans performed in laboratory, fuel gas hhv - ASTM D1826 or D1945 in conjunction with ASTM D3588. [1081, 6.1; 4305, 6.2 and 4306, 6.2] 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 and 4306, 5.5] Federally Enforceable Through Title V Permit
23. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rule 2201, District Rules 1070, 4.0; 4305, 6.1 and 4306, 6.1] Federally Enforceable Through Title V Permit
24. 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, 4.0; 4305, 6.1 and 4306, 6.1] Federally Enforceable Through Title V Permit
25. 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, 5.1 and 5.3] Federally Enforceable Through Title V Permit

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

# San Joaquin Valley Air Pollution Control District

**PERMIT UNIT:** S-1547-62-24

**EXPIRATION DATE:** 05/31/2016

**SECTION:** NW12 **TOWNSHIP:** 29S **RANGE:** 21E

**EQUIPMENT DESCRIPTION:**

62.5 MMBTU/HR C.E. NATCO NATURAL GAS FIRED STEAM GENERATOR WITH A COEN QLN-ULN LOW-NOX BURNER AND FLUE GAS RECIRCULATION (#12-2C, DIS# 19175-75)

## PERMIT UNIT REQUIREMENTS

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1. This equipment is approved to be operated at the following locations: Section 18, T28S/R21E and NW/4 Section 12, T29S/R21E. [District Rule 2201] Federally Enforceable Through Title V Permit
2. The permittee shall notify the District Compliance Division of each location at which the operation is located in excess of 24 hours. Such notification shall be made no later than 48 hours after starting operation at the location. [District Rule 2201] Federally Enforceable Through Title V Permit
3. Copies of all fuel invoices showing quantity and delivery points of gas delivered and copies of quality terms of gas delivery contracts shall be maintained. The operator shall record daily amount and type(s) of fuel(s) combusted 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
4. 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 has been demonstrated for 8 consecutive weeks for a fuel source, then the 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
5. 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 EPA Method 6B; or EPA Method 8; or ARB Methods 8 or 100; or, for units using gaseous fuel scrubbed for sulfur pre-combustion, a grab sample analysis by double GC for H2S and mercaptans performed in the laboratory and EPA Method 19 to calculate 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
6. If the unit is fired on noncertified gaseous fuel and compliance with SOx emission limits is achieved through fuel sulfur content limitations, the following test methods (or other approved methods listed in this permit) shall be used; H2S: ASTM D6228 or grab sample analysis by double GC for H2S and mercaptans performed in the laboratory; total sulfur: ASTM 1072, D3246, D4084 or D6228. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
7. If fuel analysis is used to demonstrate compliance with conditions of this permit, the fuel higher heating value for each fuel shall be certified by a third party fuel supplier or determined by ASTM D 1826 or D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District Rules 4305, 6.2 and 4306, 6.2] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

8. Compliance with permit conditions in the Title V permit shall be deemed compliance with the requirements of 40 CFR 60, Subpart Dc (except 60.44c(g) and (h) and 60.48c). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
9. This unit shall be fired exclusively on natural gas which may consist of one or a mixture of fuels including treated produced gas and purchased gas with a sulfur content not to exceed 19.3 gr/100 scf. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Emission rates, except during startup, shutdown, and refractory curing shall not exceed any of the following PM10: 0.058 lb/MMBtu, SOx (as SO2): 0.055 lb/MMBtu, VOC: 0.003 lb/MMBtu, NOx (as NO2): 0.018 lb/MMBtu or 15 ppmv @ 3% O2, or CO: 0.030 lb/MMBtu or 40 ppmv @ 3% O2. [District Rules 2201, 4305, 5.1 and 4306, 5.1] Federally Enforceable Through Title V Permit
11. Emission rates during startup, shutdown and refractory curing shall not exceed: particulate matter - 10 pounds per hour, or 0.1 grains/dscf calculated to 12% CO2; sulfur - 200 pounds of SO2 per hour, or 2000 ppmv as SO2, or 0.11 pounds sulfur (as S) per MMBtu on average-wide basis for all units in Rule 4406 plan; NO2 - 140 pounds per hour or 0.14 pounds per MMBtu. [District Rules 4301, 5.2; 4405, 5.2; 4406, 4.2 and 4801, 3.1] Federally Enforceable Through Title V Permit
12. Emission rates shall not exceed any of the following: PM10: 87.0 lb/day, SOx (as SO2): 82.5 lb/day, VOC: 4.5 lb/day, NOx (as NO2): 54.0 lb/day or 9855 lb/year, or CO: 45.0 lb/day [District Rule 2201] Federally Enforceable Through Title V Permit
13. Duration of startup and shutdown (as defined in Rule 4306) shall not exceed 2 hours each per occurrence. Refractory curing period is defined as a maintenance-based reduced-load period of time during which a unit is brought from a shutdown status to staged rates of firing for the sole purpose of curing new refractory lining of the unit, and shall not exceed 30 hours per occurrence. The operator shall maintain records of the duration of start-up, shutdown, and refractory curing periods. [District Rules 4305, 5.5, & 6.1 and 4306, 5.3 & 6.1] Federally Enforceable Through Title V Permit
14. 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, 5.5] Federally Enforceable Through Title V Permit
15. If 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
16. All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the permit-to-operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 4305, 5.5 and 4306, 5.5] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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17. The permittee shall maintain records of: (1) the date and time of NO<sub>x</sub>, CO, and O<sub>2</sub> measurements, (2) the O<sub>2</sub> concentration in percent and the measured NO<sub>x</sub> and CO concentrations corrected to 3% O<sub>2</sub>, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 5.4 and 4306, 5.4] Federally Enforceable Through Title V Permit
18. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. Unless otherwise specified in the Permit to Operate No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of Rule 4306. For the purposes of permittee-performed alternate monitoring, emissions measurements may be performed at any time after the unit reaches conditions representative of normal operation. [District Rules 4305, 5.5 and 4306, 5.5] Federally Enforceable Through Title V Permit
19. Source testing to measure natural gas-combustion NO<sub>x</sub> and CO emissions from this unit shall be conducted at least once every twelve (12) months (no more than 30 days before or after the required annual source test date). After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months (no more than 30 days before or after the required 36-month source test date). If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 6.3 and 4306, 6.3] 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, 5.5 and 4306, 5.5] Federally Enforceable Through Title V Permit
21. 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. 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
22. The following test methods shall be used: NO<sub>x</sub> (ppmv) - EPA Method 7E or ARB Method 100, NO<sub>x</sub> (lb/MMBtu) - EPA Method 19, CO (ppmv) - EPA Method 10 or 10B or ARB Method 100, stack gas oxygen - EPA Method 3 or 3A or ARB Method 100, SO<sub>x</sub> (lb/MMBtu) - ARB Method 8 or 100 or EPA Method 6, 6B or 8 or fuel gas sulfur content analysis and EPA Method 19, fuel gas sulfur content - ASTM D1072, D4468, D3246, D4084 or double GC for H<sub>2</sub>S and mercaptans performed in laboratory, fuel gas hhv - ASTM D1826 or D1945 in conjunction with ASTM D3588. [District Rule 1081, 6.1; 4305, 6.2 and 4306, 6.2] Federally Enforceable Through Title V Permit
23. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 5.5 and 4306, 5.5] Federally Enforceable Through Title V Permit
24. All records shall be maintained for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 4.0; 4305, 6.1 and 4306, 6.1] Federally Enforceable Through Title V Permit
25. 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
26. Pursuant to Rule 4320, beginning in 2010 the operator shall pay an annual emission fee to the District for NO<sub>x</sub> 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 NO<sub>x</sub> emission limit listed in Rule 4320. [District Rule 4320] Federally Enforceable Through Title V Permit

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# San Joaquin Valley Air Pollution Control District

**PERMIT UNIT:** S-1547-837-22

**EXPIRATION DATE:** 05/31/2016

**SECTION:** NW11 **TOWNSHIP:** 29S **RANGE:** 21E

**EQUIPMENT DESCRIPTION:**

62.5 MMBTU/HR NATURAL GAS/VAPOR RECOVERY GAS FIRED STEAM GENERATOR WITH A COEN ULN LOW NOX BURNER, FLUE GAS RECIRCULATION, AND NON-CONDENSIBLE PIPING FROM VAPOR CONTROL SYSTEM S-1547-359. (#11-1F) (BELBRIDGE)

## PERMIT UNIT REQUIREMENTS

1. Copies of all fuel invoices showing quantity and delivery points of gas delivered and copies of quality terms of gas delivery contracts shall be maintained. The operator shall record daily amount and type(s) of fuel(s) combusted 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
2. Emissions from gaseous fired units shall not exceed 200 lb sulfur compounds/hour, calculated as SO<sub>2</sub>. 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 4301, 5.2.1, and 2520, 9.3.2] Federally Enforceable Through Title V Permit
3. 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 has been demonstrated for 8 consecutive weeks for a fuel source, then the 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
4. If fuel analysis is used to demonstrate compliance with conditions of this permit, the fuel higher heating value for each fuel shall be certified by a third party fuel supplier or determined by ASTM D 1826 or D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District Rules 4305, 6.2; 4306, 6.2 and 4320, 6.2] Federally Enforceable Through Title V Permit
5. The operator shall demonstrate compliance with this unit's sulfur compound exhaust concentration limit(s) using one of the following: test the sulfur content of each fuel source, or determine that the concentration of sulfur compounds in the exhaust does not exceed the concentration limit by a combination of source testing and fuel analysis. [District Rules 2520, 9.4.2, 4301, 5.2.1 and Rule 4801, 3.1] Federally Enforceable Through Title V Permit
6. {565} Compliance with permit conditions in the Title V permit shall be deemed compliance with the requirements of 40 CFR 60, Subpart Dc (except 60.44c(g) and (h) and 60.48c). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
7. Steam generator shall be equipped with operational fuel gas volumetric flow meter . [District Rule 2201] Federally Enforceable Through Title V Permit
8. Steam generator shall be equipped with operational vapor control system gas supply volumetric flow meter whenever unit is connected to the vapor control system gas supply. [District Rule 2201] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE  
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9. Maximum TEOR gas flow rate for this unit shall not exceed 1,300 Mcf/day. [District Rule 2201] Federally Enforceable Through Title V Permit
10. When fired exclusively on natural gas, except during startup, shutdown, and refractory curing, emissions from this unit shall not exceed either of the following limits: PM10: 0.005 lb/MMBtu or SOx (as SO2): 0.002 lb/MMBtu. [District Rules 2201; 4201, 3.0; and 4320, 5.4] Federally Enforceable Through Title V Permit
11. When natural gas and TEOR gas fired, except during startup, shutdown, and refractory curing, maximum PM10 emissions shall not exceed the lb/hr limit calculated as follows:  $PM10 = \{(7.0 \text{ lb/day}) + (249.2 \text{ lb/day}) \times (\text{fraction of total TEOR gas incinerated in this unit during testing})\} / (24 \text{ hr/day})$ . [District Rules 2201, 2520, 4201 and 4301] Federally Enforceable Through Title V Permit
12. Steam generator shall be operated at no greater than 1,466.7 MMBtu hhw/day heat input. [District Rule 2201] Federally Enforceable Through Title V Permit
13. The total gas fired in this unit, on a monthly volume basis, shall be less than 50% PUC quality natural gas (as defined in Rule 4320), by volume. [District Rule 4320, 5.2] Federally Enforceable Through Title V Permit
14. The permittee shall maintain monthly records of the volume of PUC quality natural gas (as defined in Rule 4320) and the total gas fired in this unit. Permittee shall keep monthly records of the percentage by volume of PUC quality gas fired and indicate if the volume of PUC quality gas fired is less than 50%. [District Rule 4320, 5.2] Federally Enforceable Through Title V Permit
15. Fuel H2S, total sulfur, and methane content shall be determined semi-annually using the test methods specified in this permit. [District Rule 4320, 6.2] Federally Enforceable Through Title V Permit
16. If the unit is fired on noncertified gaseous fuel and compliance with SOx emission limits is achieved through fuel sulfur content limitations, the following test methods (or other approved methods listed in this permit) shall be used; H2S: ASTM D6228 or grab sample analysis by double GC for H2S and mercaptans performed in the laboratory; total sulfur: ASTM 1072, D3246, D4084 or D6228; and methane content: ASTM D1945. [District Rule 4320, 6.2] Federally Enforceable Through Title V Permit
17. Emission rates, except during startup, shutdown, and refractory curing shall not exceed any of the following: VOC: 0.003 lb/MMBtu, NOx (as NO2): 0.014 lb/MMBtu or 12 ppmv @ 3% O2, or CO: 0.030 lb/MMBtu or 40.0 ppmv @ 3% O2. [District Rule 2201; 4305, 5.1; 4306, 5.1 and 4320, 5.2] Federally Enforceable Through Title V Permit
18. Emission rates during startup, shutdown and refractory curing shall not exceed: particulate matter - 10 pounds per hour, or 0.1 grains/dscf calculated to 12% CO2; sulfur - 200 pounds of SO2 per hour, or 2000 ppmv as SO2, or 0.11 pounds sulfur (as S) per MMBtu on average-wide basis for all units in Rule 4406 plan; NO2 - 140 pounds per hour or 0.14 pounds per MMBtu. [District Rules 4201, 3.0; 4301, 5.2; 4405, 5.2; 4406, 4.2 and 4801, 3.1] Federally Enforceable Through Title V Permit
19. Duration of startup and shutdown (as defined in Rule 4320) shall not exceed 2 hours each per occurrence. Refractory curing period is defined as a maintenance-based reduced-load period of time during which a unit is brought from a shutdown status to staged rates of firing for the sole purpose of curing new refractory lining of the unit, and shall not exceed 30 hours per occurrence. The operator shall maintain records of the duration of start-up, shutdown, and refractory curing periods. [District Rules 4305, 5.5; 4306, 5.3 and 4320, 5.6] 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, 5.4; 4306, 5.4 and 5.7] Federally Enforceable Through Title V Permit

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PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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21. If the NO<sub>x</sub> or CO concentrations corrected to 3% O<sub>2</sub>, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of the performing the notification and testing required by this condition. [District Rules 4305, 5.4; 4306, 5.4 and 4320, 5.7] 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, 5.5; 4306, 5.5 and 4320, 5.8] Federally Enforceable Through Title V Permit
23. The permittee shall maintain records of: (1) the date and time of NO<sub>x</sub>, CO, and O<sub>2</sub> measurements, (2) the O<sub>2</sub> concentration in percent and the measured NO<sub>x</sub> and CO concentrations corrected to 3% O<sub>2</sub>, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 5.4; 4306, 5.4 and 5.7] 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. Unless otherwise specified in the Permit to Operate no determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4320. For the purposes of permittee-performed alternate monitoring, emissions measurements may be performed at any time after the unit reaches conditions representative of normal operation. [District Rules 4305, 5.5; 4306, 5.5 and 4320, 5.7] Federally Enforceable Through Title V Permit
25. Source testing to measure natural gas-combustion NO<sub>x</sub> and CO emissions from this unit shall be conducted at least once every twelve (12) months (no more than 30 days before or after the required annual source test date). After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months (no more than 30 days before or after the required 36-month source test date). If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 6.3; 4306, 6.3 and 4320, 6.3] 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, 5.5; 4306, 5.5 and 4320, 5.8] Federally Enforceable Through Title V Permit
27. 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. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
28. The following test methods shall be used: NO<sub>x</sub> (ppmv) - EPA Method 7E or ARB Method 100, NO<sub>x</sub> (lb/MMBtu) - EPA Method 19, CO (ppmv) - EPA Method 10 or 10B or ARB Method 100, stack gas oxygen - EPA Method 3 or 3A or ARB Method 100, SO<sub>x</sub> (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 H<sub>2</sub>S and mercaptans performed in a laboratory, fuel gas h<sub>h</sub>v - ASTM D1826 or D1945 in conjunction with ASTM D3588. [District Rules 1081, 6.1; 4305, 6.2; 4306, 6.2 and 4320, 6.2] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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29. 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; 4306, 5.5 and 4320, 5.5] Federally Enforceable Through Title V Permit
30. Only natural gas or a combination of natural gas and scrubbed non-condensable gas from sulfur scrubbing system(s) S-1547-359 shall be used as fuel in this steam generator. [District Rule 4320, 5.2] Federally Enforceable Through Title V Permit
31. For each steam generator site downstream of H<sub>2</sub>S scavenger chemical injection points, permittee shall monitor sulfur content of the gas prior to incineration in affected steam generators on a daily basis utilizing Draeger tubes calibrated for existing sulfur species or other District-approved fuel sulfur detection method(s) or device(s). If compliance with fuel sulfur content limit(s) for the affected steam generators is demonstrated for 5 consecutive days, then the monitoring frequency shall be weekly. [District Rule 4320] Federally Enforceable Through Title V Permit
32. Compliance with fuel sulfur limit(s) can be demonstrated either by monitoring sulfur content at location(s) after all fuel sources are combined prior to incineration, or by monitoring the sulfur content and volume of each fuel source and performing mass balance calculations. Records of monitoring locations, detected sulfur concentrations, and mass balance calculations, if necessary, shall be maintained and kept onsite and made readily available for District inspection upon request. [District Rules 1070 and 2520, 9.4.2] Federally Enforceable Through Title V Permit
33. Sample collection for compliance demonstration (source testing) shall be by an ARB certified testing laboratory and shall be District witnessed or authorized. [District Rule 1081] Federally Enforceable Through Title V Permit
34. All records shall be maintained for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070; 4305, 6.1; 4306, 6.1 and 4320, 6.1] Federally Enforceable Through Title V Permit
35. Permittee shall maintain accurate records of heating values (in Btu/scf) and daily consumption of natural gas/TEOR waste gas. [District Rule 4320, District Rules 1070 and 2520, 9.5.2] Federally Enforceable Through Title V Permit
36. NOTE: There are no sulfur compounds daily emission limits (DELs) expressed on this permit for incineration of TEOR gas, sulfur compounds emissions are limited by DELs on permit S-1547-359.
37. Formerly S-1511-253

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