



MAY 02 2012

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

Re: **Proposed Authority to Construct / Certificate of Conformity (Minor Mod)**
District Facility # S-1547
Project # 1120630

Dear Mr. Rios:

Enclosed for your review is the District's engineering evaluation of an application for Authority to Construct for Aera Energy, LLC, located at Various Sections in Ranges 20E and 21E at Aera's Heavy Oil Western Stationary Source in Kern County, which has been issued a Title V permit. Aera Energy, LLC is requesting that a Certificate of Conformity, with the procedural requirements of 40 CFR Part 70, be issued with this project. Aera proposes to allow the use of beam-driven casing gas compressors on TEOR production wells at additional locations within Section 12, Township 30S, Range 21E, and Section 26, Township 29S, Range 21E.

Enclosed is the engineering evaluation of this application, a copy of the current Title V permit, and proposed Authority to Construct # S-1547-1209-6 with Certificate of Conformity. After demonstrating compliance with the Authority to Construct, the conditions will be incorporated into the facility's Title V permit through an administrative amendment.

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

Northern Region

4800 Enterprise Way
Modesto, CA 95356-8718

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Mr. Gerardo C. Rios
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Thank you for your cooperation in this matter.

Sincerely,


David Warner
Director of Permit Services

Enclosures
cc: Steve Roeder, Permit Services



MAY 02 2012

John Haley
Aera Energy, LLC
PO Box 11164
Bakersfield, CA 93389-1164

**Re: Proposed Authority to Construct / Certificate of Conformity (Minor Mod)
District Facility # S-1547
Project # 1120630**

Dear Mr. Haley:

Enclosed for your review is the District's analysis of your application for Authority to Construct for the facility identified above. You have requested that a Certificate of Conformity with the procedural requirements of 40 CFR Part 70 be issued with this project. Aera proposes to allow the use of beam-driven casing gas compressors on TEOR production wells at additional locations within Section 12, Township 30S, Range 21E, and Section 26, Township 29S, Range 21E.

After addressing any EPA comments made during the 45-day comment period, the Authority to Construct will be issued to the facility with a Certificate of Conformity. Prior to operating with modifications authorized by the Authority to Construct, the facility must submit an application to modify the Title V permit as an administrative amendment, in accordance with District Rule 2520, Section 11.5.

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

Thank you for your cooperation in this matter.

Sincerely,



David Warner
Director of Permit Services

Enclosures
cc: Steve Roeder, Permit Services

San Joaquin Valley Air Pollution Control District

Authority to Construct Application Review

Authorization of Additional Locations for Beam-Driven Casing Gas Compressors

Facility Name: Aera Energy LLC Date: April 27, 2012
Mailing Address: P.O. Box 11164 Engineer: Steve Roeder
Bakersfield, CA 93389 Lead Engineer: ~~Dan Klevann~~ *AP SURR AQE*
Contact Person: John Haley APR 27 2012
Telephone: (661) 665-7424, (661) 747-5031 (cell)
Fax: (661) 665-7437
E-Mail: jehaley@aeraenergy.com
Application #: S-1547-1209-6
Project #: 1120630
Deemed Complete: 3/22/12

I. Proposal

Aera Energy LLC (Aera) recently received Authority to Construct (ATC) S-1547-1209-3 to install and operate up to 50 thermally enhanced oil wells with beam-driven casing gas compressors in NW Section 36 and Section 25 in T27S, R20E and Sections 7, 18, 20, 28, 29, 33, 34 and 35 in T28S, R21E in Aera's Belridge Oilfield. See explanation of beam-driven gas compressor under "Process Description" below.

Since Aera is still building the up-to 50 beam-driven gas compressors, and Aera has located other wells with increased casing pressure, Aera has proposed to allow the installation of some of the un-built beam-driven gas compressors in S12, T30S, R21E and S26, T29S, R21E. No other changes are proposed, and no increase in equipment or components is proposed.

S-1547-1209-4 was the minor modification that incorporated ATC S-1547-1209-3.
S-1547-1209-4 is the base document for this project, and is presented in Appendix A.

Pursuant to the definition of Modification in Rule 2201, a change which consists solely of a transfer of location of an emissions unit within a Stationary Source (in this case, as-yet un-built emissions units) does not constitute a modification and is therefore not subject to Rule 2201.

This facility is a major source. There are no outstanding ATCs associated with this unit.

Aera received their Title V Permit on 11/25/02. This modification can be classified as a Title V minor modification pursuant to Rule 2520, and can be processed with a Certificate of Conformity (COC). Since the facility has specifically requested that this project be processed in that manner, the 45-day EPA comment period will be satisfied prior to the issuance of the Authority to Construct. Aera must apply to administratively amend their Title V permit.

II. Applicable Rules

Rule 2201 New and Modified Stationary Source Review Rule (4/21/11)
Rule 2520 Federally Mandated Operating Permits (6/21/01)
Rule 4102 Nuisance (12/17/92)
Rule 4401 Steam-Enhanced Crude Oil Production Wells (6/16/11)
CH&SC Section 41700 Health Risk Assessment
CH&SC Section 42301.6 School Notice
Public Resources Code 21000-21177: California Environmental Quality Act (CEQA)
California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387: CEQA Guidelines

III. Project Location

The beam-driven casing gas compressors authorized by this project are located within the heavy oil western stationary source facility within NW Section 36 and Section 25 in T27S, R20E and Sections 7, 18, 20, 28, 29, 33, 34 and 35 in T28S, R21E, Section 12, T30S, R21E and Section 26, T29S, R21E.

The equipment is not located within 1,000 feet of the outer boundary of a K-12 school. Therefore, the public notification requirement of California Health and Safety Code 42301.6 is not applicable to this project.

IV. Process Description

Oil is pumped from the Belridge, McKittrick and Cymric oil fields using the standard pump-jack (horse head) oil pumps.

Since the oil produced from the wells contains entrained gas, it is sent to tanks equipped with a vapor control system with a VOC control efficiency of 99%. Aera has stated that production will be sent to tank S-1547-888 which is served by a vapor control system with a control efficiency of 99%.

In these oil fields, a build-up of gasses at the pumps is creating elevated casing pressures (back-pressure in the oil wells) that is making the oil harder to pump. Therefore, Aera is building up to 50 gas compressors that are powered by the motion of the oil pump beam. The new beam-driven gas compressors draw the wellhead gas from the wellhead, compress it and discharge the gas into the flow line. This lowers the casing pressure, making the oil easier to pump.

V. Equipment Listing

Pre-Project Equipment Description

S-1547-1209-4: UP TO FIFTY THERMALLY ENHANCED OIL RECOVERY WELLS WITH BEAM-DRIVEN CASING GAS COMPRESSORS OPERATED WITH PRODUCED GAS ROUTED TO PRODUCED FLUID LINE (BELRIDGE OIL FIELD)

Proposed Modification

S-1547-1209-6: MODIFICATION OF UP TO FIFTY THERMALLY ENHANCED OIL RECOVERY WELLS WITH BEAM-DRIVEN CASING GAS COMPRESSORS OPERATED WITH PRODUCED GAS ROUTED TO PRODUCED FLUID LINE (BELRIDGE OIL FIELD): ALLOW THE USE OF BEAM-DRIVEN CASING GAS COMPRESSORS ON THERMALLY-ENHANCED PRODUCTION WELLS WITHIN SECTION 12 T30S R21E AND SECTION 26 T29S R21E

Post Project Equipment Description

S-1547-1209-6: UP TO FIFTY THERMALLY ENHANCED OIL RECOVERY WELLS WITH BEAM-DRIVEN CASING GAS COMPRESSORS OPERATED WITH PRODUCED GAS ROUTED TO PRODUCED FLUID LINE (BELRIDGE, MCKITTRICK AND CYMRIC OIL FIELDS)

VI. Emission Control Technology Evaluation

Emissions from the TEOR equipment consist of fugitive emissions. Casing vent vapors are routed to the liquid production line. Production is sent to tanks equipped with a vapor control efficiency of at least 99%.

According to District policy SSP 2015 "Quantifying Fugitive VOC Emissions from Petroleum & SOCFI Facilities", fugitive emissions are not assessed from components handling gas containing 10 percent or less by weight VOCs which is applicable for this facility.

The formerly issued ATCs for this equipment has required that VOC testing of each well initially followed by representative testing of 20% of the wells for 8 consecutive quarters and annually thereafter if quarterly testing demonstrates compliance. The following two conditions are included on the ATC:

- The casing gas from each well shall be sampled for VOC content within 30 days of retrofitting the well with a beam-driven compressor. [District Rule 2201]
- Operator shall conduct representative quarterly VOC sampling of the well casing gas on 20% of the active wells equipped with beam-driven compressors. If the gas sampled is 10% or less VOC by weight for eight consecutive quarterly samplings, the sampling frequency shall only be required annually. If the test shows noncompliance with the percent VOC requirement, the source must return to quarterly testing until eight consecutive quarters show compliance. [District Rule 2201]

VII. General Calculations

A. Assumptions

- No change in the number of components is proposed (Applicant)
- No change in the emissions is proposed (Applicant)
- The VOC content of the fluid handled by the components is less than 10% (Applicant)
- No emissions are assessed to components that handle fluids with a VOC content of less than 10% (District Policy SSP 2015)
- For the previously conducted HRA, the emissions were calculated based on the emission factors in Table 2-4 of the US Environmental Protection Agency's (EPA) "Protocol for Equipment Emission Estimates" (EPA-453-R-95-017) for oil and gas production operations, using average emission factors, and amounted to a total of 5.9 lb-VOC/day and 2,146 lb/year (Project S-1111121)

B. Emission Factors

Pursuant to District Policy SSP 2015, there are no emissions from the components in this project.

C. Calculations

Since there is no change in emissions associated with this project and this project is not subject to Rule 2201, no calculations are necessary. The PE1 and the PE2 are only calculated for completeness for the emissions profile.

1. Pre-Project Potential to Emit (PE1)

The daily and annual PE1 for unit S-1547-1209-4 is taken from the current permit and posted in the following table.

PE1		
Permit Unit	VOC lb/day	VOC lb/year
S-1547-1209-4	0	0

2. Post-Project Potential to Emit (PE2)

The daily and annual PE2 for unit S-1547-1209-6 is zero and posted in the following table.

PE2		
Permit Unit	VOC lb/day	VOC lb/year
S-1547-1209-6	0	0

VIII. Compliance

Rule 2201 - New and Modified Stationary Source Review Rule

The purpose of this Rule is to review new and modified Stationary Sources of air pollution. Pursuant to Section 3.25.3.3, a change which consists solely of a transfer of location of an emissions unit within a Stationary Source is not considered to be a modification.

Since this project allows the previously-approved beam-driven compressors to be located in different spots within the same stationary source, this project is not a modification pursuant to Rule 2201, and is therefore not subject to Rule 2201.

The proposed ATC requires initial VOC testing of each new well followed by representative testing of 20% of the wells for 8 consecutive quarters and annually thereafter if quarterly testing demonstrates compliance. The following two conditions will remain on the permit to ensure compliance.

- The casing gas from each well shall be sampled for VOC content within 30 days of retrofitting the well with a beam-driven compressor. [District Rule 2201]
- Operator shall conduct representative quarterly VOC sampling of the well casing gas on 20% of the active wells equipped with beam-driven compressors. If the gas sampled is 10% or less VOC by weight for eight consecutive quarterly samplings, the sampling frequency shall only be required annually. If the test shows noncompliance with the percent VOC requirement, the source must return to quarterly testing until eight consecutive quarters show compliance. [District Rule 2201]

Rule 2520 - Federally Mandated Operating Permits

Aera is subject to Rule 2520, and has received their Title V Operating Permit. The proposed modification is a Minor Modification to the Title V Permit pursuant to Section 3.20:

In accordance with Rule 2520, 3.20, these modifications:

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

5. Are not Title I modifications as defined in District Rule 2520 or modifications as defined in section 111 or 112 of the Federal Clean Air Act; and
6. Do not seek to consolidate overlapping applicable requirements.

As discussed above, the facility has applied for a COC. Therefore, the facility must also apply to modify their Title V permit with an administrative amendment prior to operating with the proposed modifications. The facility may construct/operate under the ATC upon submittal of the Title V administrative amendment.

Upon a successful 45-day EPA COC notification period, ATC S-1547-1209-6 will be issued with the following conditions.

- {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201]
- {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4]

Rule 4102 - Nuisance

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

California Health & Safety Code 41700 (Health Risk Assessment)

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

A health risk analysis (HRA) has already been performed on the emissions from this equipment (Project S-111121). Since there is no change in the number of components or emissions associated with this project, and since the minimum receptor distances are not decreasing as the result of this project, another HRA is not necessary.

Continued compliance is expected.

Rule 4401 Steam-enhanced Crude Oil Production Well Vents

The existing conditions from Rule 4401 will remain on the permit.

Continued compliance is expected.

California Health & Safety Code 42301.6 (School Notice)

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

California Environmental Quality Act (CEQA)

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

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

The District performed an Engineering Evaluation (this document) for the proposed project and determined that the potential to emit of this unit is less than two pounds in any one day for each criteria pollutant. Thus, Best Available Control Technology (BACT) requirements do not apply. Furthermore, the District determined that a Risk Management Review is not necessary, thus concluding that potential health impacts are less than significant.

Issuance of permits for projects not subject to BACT requirements and with health impact less than significant is a matter of ensuring conformity with applicable District rules and regulations and does not require discretionary judgment or deliberation. Thus, the District concludes that this permitting action constitutes a ministerial approval. Section 21080 of the Public Resources Code exempts from the application of CEQA those projects over which a public agency exercises only ministerial approval. Therefore, the District finds that this project is exempt from the provisions of CEQA.

IX. Recommendation

Compliance with all applicable rules and regulations is expected. Pending a successful EPA COC notification, issue Authority to Construct S-1547-1209-6 subject to the permit conditions on the attached draft Authority to Construct.

X. Billing Information

Annual Permit Fees			
Permit Number	Fee Schedule	Fee Description	Annual Fee
S-1547-1209-6	3020-09A	50 wells	\$467.00

Appendixes

- A: Current Permit
- B: Emission Profile
- C: Draft ATC

Appendix A Current Permit

San Joaquin Valley Air Pollution Control District

PERMIT UNIT: S-1547-1209-4

EXPIRATION DATE: 05/31/2016

SECTION: NW 36 **TOWNSHIP:** 27S **RANGE:** 20E

EQUIPMENT DESCRIPTION:

UP TO FIFTY THERMALLY ENHANCED OIL RECOVERY WELLS WITH BEAM-DRIVEN CASING GAS COMPRESSORS OPERATED WITH PRODUCED GAS ROUTED TO PRODUCED FLUID LINE (BELRIDGE OIL FIELD)

PERMIT UNIT REQUIREMENTS

1. Beam-driven casing gas compressors authorized by this PTO shall only be located in NW Section 36 and Section 25 in T27S, R20E and Sections 7, 18, 20, 28, 29, 33, 34 and 35 in T28S, R21E. [District Rule 2201] Federally Enforceable Through Title V Permit
2. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
3. Produced gas shall be routed to produced fluid line prior to entering crude oil storage tanks. [District Rules 2201 and 4401] Federally Enforceable Through Title V Permit
4. All produced fluids (gas, water, oil) from TEOR wells shall be sent to tanks served by a vapor control system with 99% control efficiency. [District Rule 2201] Federally Enforceable Through Title V Permit
5. Permittee shall implement an I&M program consistent with all applicable requirements of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
6. The VOC content of the casing gas shall not exceed 10% by weight. [District Rule 2201] Federally Enforceable Through Title V Permit
7. The casing gas from each well shall be sampled for VOC content within 30 days of retrofitting each well with a beam-driven compressor. [District Rule 2201] Federally Enforceable Through Title V Permit
8. Operator shall conduct representative VOC quarterly sampling of the well casing gas on 20% of the active wells equipped with beam-driven compressors. If the gas sampled is 10% or less VOC by weight for eight consecutive quarterly samplings, the sampling frequency shall only be required annually. If a test shows noncompliance with the percent VOC requirement, the source must return to quarterly testing until eight consecutive quarters show compliance. [District Rule 2201] Federally Enforceable Through Title V Permit
9. During the time any steam-enhanced crude oil production well is undergoing service or repair while the well is not producing, it shall be exempt from the emission control requirements of District Rule 4401, 5.0 (as amended December 14, 2006). [District Rule 4401, 4.1] Federally Enforceable Through Title V Permit
10. The annual inspection requirements of Section 5.8.1 through Section 5.8.5 of Rule 4401 shall not apply to components exclusively handling gas/vapor or liquid with a VOC content of ten percent by weight (10 wt %) or less, as determined by the test methods in Section 6.3.5 of Rule 4401. [District Rule 4401 4.9] Federally Enforceable Through Title V Permit

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

11. An operator shall not operate a steam-enhanced crude oil production well unless the operator complies with the following requirements: The steam-enhanced crude oil production well vent is closed and the front line production equipment downstream of the wells that carry produced fluids (crude oil or mixture of crude oil and water) is connected to a VOC collection and control system as defined in Section 3.0 of Rule 4401, the well vent may be temporarily opened during periods of attended service or repair of the well provided such activity is done as expeditiously as possible with minimal spillage of material and VOC emissions to the atmosphere, the steam-enhanced crude oil production well vent is open and the well vent is connected to a VOC collection and control system as defined in Section 3.0 of Rule 4401. [District Rule 4401, 5.5.1 and 5.5.2] Federally Enforceable Through Title V Permit
12. An operator shall be in violation of this rule if any District inspection demonstrates the existence of a component with a major liquid leak, a component with a gas leak greater than 50,000 ppmv, or an open-ended line or a valve located at the end of the line that is not sealed with a blind flange, plug, cap or a second closed valve that is not closed at all times, except during attended operations as defined by Section 5.6.2.1 of Rule 4401 requiring process fluid flow through the open-ended lines. [District Rule 4401 5.6.2] Federally Enforceable Through Title V Permit
13. Gas and liquid leaks are as defined in Section 3.20 of Rule 4401. [District Rule 4401 3.20] Federally Enforceable Through Title V Permit
14. An operator shall be in violation of this rule if any District inspection demonstrates the existence of any combination of components with minor liquid leaks, minor gas leaks, or gas leaks greater than 10,000 ppmv up to 50,000 ppmv that totals more than number of leaks allowed by Table 3 of Rule 4401. [District Rule 4401 5.6.2] Federally Enforceable Through Title V Permit
15. An operator shall not use any component with a leak as defined in Section 3.0 of Rule 4401, or that is found to be in violation of the provisions of Section 5.6.2 of Rule 4401. However, components that were found leaking may be used provided such leaking components have been identified with a tag for repair, are repaired, or awaiting re-inspection after being repaired within the applicable time frame specified in Section 5.9 of Rule 4401. [District Rule 4401 5.7.1] Federally Enforceable Through Title V Permit
16. Each hatch shall be closed at all times except during sampling or adding of process material through the hatch, or during attended repair, replacement, or maintenance operations, provided such activities are done as expeditiously as possible with minimal spillage of material and VOC emissions to the atmosphere. [District Rule 4401 5.7.2] Federally Enforceable Through Title V Permit
17. An operator shall comply with the requirements of Section 6.7 of Rule 4401 if there is any change in the description of major components or critical components. [District Rule 4401 5.7.3] Federally Enforceable Through Title V Permit
18. An operator shall affix a readily visible weatherproof tag to a leaking component upon detection of the leak and shall include the following information on the tag: date and time of leak detection, date and time of leak measurement, for a gaseous leak, the leak concentration in ppmv, for a liquid leak, whether it is a major liquid leak or a minor liquid leak, whether the component is an essential component, an unsafe-to monitor component, or a critical component. [District Rule 4401 5.9.1] Federally Enforceable Through Title V Permit
19. An operator shall keep the tag affixed to the component until an operator has met all of the following conditions: repaired or replaced the leaking component, re-inspected the component using the test method in Section 6.3.3, and 5.9.2.3 of Rule 4401, or the component is found to be in compliance with the requirements of this rule. [District Rule 4401 5.9.2] Federally Enforceable Through Title V Permit
20. An operator shall minimize a component leak in order to stop or reduce leakage to the atmosphere immediately to the extent possible, but not later than one (1) hour after detection of the leak. [District Rule 4401 5.9.3] Federally Enforceable Through Title V Permit
21. Except for leaking critical components or leaking essential components subject to the requirements of Section 5.9.7 of Rule 4401, if an operator has minimized a leak but the leak still exceeds the applicable leak limits as defined in Section 3.0 of Rule 4401, an operator shall comply with at least one of the following requirements as soon as practicable but not later than the time period specified in Table 4 of Rule 4401: Repair or replace the leaking component; or vent the leaking component to a VOC collection and control system as defined in Section 3.0 of Rule 4401, or remove the leaking component from operation. [District Rule 4401 5.9.4] 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.

22. The repair period in calendar days shall not exceed 14 days for minor gas leaks, 5 days for major gas leaks less than or equal to 50,000 ppmv, 2 days for gas leak greater than 50,000 ppmv, 3 days for minor liquid leaks, 2 days for major liquid leaks. [District Rule 4401 5.9.4] Federally Enforceable Through Title V Permit
23. The leak rate measured after leak minimization has been performed shall be the leak rate used to determine the applicable repair period specified in Table 4 of Rule 4401. [District Rule 4401 5.9.5] Federally Enforceable Through Title V Permit
24. The time of the initial leak detection shall be the start of the repair period specified in Table 4 of Rule 4401. [District Rule 4401 5.9.6] Federally Enforceable Through Title V Permit
25. If the leaking component is an essential component or a critical component that cannot be immediately shut down for repairs, and if the leak has been minimized but the leak still exceeds the applicable leak standard of this rule, the operator shall repair or replace the essential component or critical component to eliminate the leak during the next process unit turnaround, but in no case later than one year from the date of the original leak detection, whichever comes earlier. [District Rule 4401 5.9.7] Federally Enforceable Through Title V Permit
26. The operator of any steam-enhanced crude oil production well shall maintain records of the date and well identification where steam injection or well stimulation occurs. [District Rule 4401 6.1.1] Federally Enforceable Through Title V Permit
27. An operator of any steam-enhanced crude oil production well shall keep source test records which demonstrate compliance with the control efficiency requirements of the VOC collection and control system as defined in Section 3.0 of Rule 4401. [District Rule 4401 6.1.3] Federally Enforceable Through Title V Permit
28. The results of source tests conducted pursuant to Section 4.6.2 of Rule 4401 shall be submitted to the APCO within 60 days after the completion of the source test. [District Rule 4401 6.1.4] Federally Enforceable Through Title V Permit
29. An operator shall maintain copies at the facility of the training records of the training program operated pursuant to Section 6.5 of Rule 4401. [District Rule 4401 6.1.7] Federally Enforceable Through Title V Permit
30. Operator shall keep a copy of the APCO-approved Operator Management Plan at the facility. [District Rule 4401 6.1.8] Federally Enforceable Through Title V Permit
31. An operator that discovers that a PRD has released shall record the date that the release was discovered, and the identity and location of the PRD that released. An operator shall submit such information recorded during the calendar year to the APCO no later than 60 days after the end of the calendar year. [District Rule 4401 6.1.11] Federally Enforceable Through Title V Permit
32. An operator shall source test annually all vapor collection and control systems used to control emissions from steam-enhanced crude oil production well vents to determine the control efficiency of the device(s) used for destruction or removal of VOC. Compliance testing shall be performed annually by source testers certified by ARB. Testing shall be performed during June, July, August, or September of each year if the system's control efficiency is dependent upon ambient air temperature. [District Rule 4401 6.2.1] Federally Enforceable Through Title V Permit
33. If approved by EPA, ARB, and the APCO, an operator need not comply with the annual testing requirement of Section 6.2.1 if all uncondensed VOC emissions collected by a vapor collection and control system are incinerated in fuel burning equipment, an internal combustion engine or in a smokeless flare. [District Rule 4401 6.2.2] Federally Enforceable Through Title V Permit
34. If approved by EPA, ARB, and the APCO, an operator need not comply with the annual testing requirement of Section 6.2.1 for a vapor control system which does not have a VOC destruction device. [District Rule 4401 6.2.3] Federally Enforceable Through Title V Permit
35. An operator seeking approval pursuant to Section 6.2.2 or Section 6.2.3 shall submit a written request and supporting information to the APCO. The District shall evaluate the request and if approved by the APCO, the District shall provide EPA and ARB with a copy of the evaluation and shall request EPA and ARB approval. The District evaluation and the APCO request shall be deemed approved unless EPA or ARB objects to such approval in writing within 45 days of the receipt of the APCO request. [District Rule 4401 6.2.4] 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.

36. An operator shall comply with the following requirements for each gauge tank, as defined in Section 3.17 of Rule 4401: Conduct an initial TVP testing of the produced fluid in each gauge tank not later than June 14, 2007. Thereafter, an operator shall conduct periodic TVP testing of each gauge tank at least once every 24 months during summer (July - September), and whenever there is a change in the source or type of produced fluid in the gauge tank. The TVP testing shall be conducted at the actual storage temperature of the produced fluid in the gauge tank using the applicable TVP test method specified in Section 6.4 of Rule 4623 (Storage of Organic Liquids). The operator shall submit the TVP testing results to the APCO as specified in Section 6.1.10 of Rule 4401. [District Rule 4401 6.2.5] Federally Enforceable Through Title V Permit
37. The control efficiency of any VOC control device, measured and calculated as carbon, shall be determined by EPA Method 25, except when the outlet concentration must be below 50 ppm in order to meet the standard, in which case EPA Method 25a may be used. EPA Method 18 may be used in lieu of EPA Method 25 or EPA Method 25a provided the identity and approximate concentrations of the analytes/compounds in the sample gas stream are known before analysis with the gas chromatograph and the gas chromatograph is calibrated for each of those known analyte/compound to ensure that the VOC concentrations are neither under- or over-reported. [District Rule 4401 6.3.1] Federally Enforceable Through Title V Permit
38. Leak inspection, other than audio-visual, and measurements of gaseous leak concentrations shall be conducted according to EPA Method 21 using an appropriate portable hydrocarbon detection instrument calibrated with methane. The instrument shall be calibrated in accordance with the procedures specified in EPA Method 21 or the manufacturer's instruction, as appropriate, not more than 30 days prior to its use. The operator shall record the calibration date of the instrument. Where safety is a concern, such as measuring leaks from compressor seals or pump seals when the shaft is rotating, a person shall measure leaks by placing the instrument probe inlet at a distance of one (1) centimeter or less from the surface of the component interface. [District Rule 4401 6.3.3] Federally Enforceable Through Title V Permit
39. The VOC content by weight percent (wt.%) shall be determined using American Society of Testing and Materials (ASTM) D1945 for gases and South Coast Air Quality Management District (SCAQMD) Method 304-91 or the latest revision of ASTM Method E168, E169 or E260 for liquids. [District Rule 4401 6.3.5] Federally Enforceable Through Title V Permit
40. All records of required monitoring data and support information shall be maintained for a period of at least five years and shall be made readily available for District inspection upon request. [District Rules 2520, 9.4.2 and 4401, 6.1] Federally Enforceable Through Title V Permit

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

Appendix B Emissions Profile

SJVUAPCD
SOUTHERN

Application Emissions

4/24/12
5:25 pm

Permit #: S-1547-1209-6	Last Updated
Facility: AERA ENERGY LLC	04/24/2012 ROEDERS

Equipment Pre-Baselined: NO

	<u>NOX</u>	<u>SOX</u>	<u>PM10</u>	<u>CO</u>	<u>VOC</u>
Potential to Emit (lb/Yr):	0.0	0.0	0.0	0.0	0.0
Daily Emis. Limit (lb/Day)	0.0	0.0	0.0	0.0	0.0
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	0.0	0.0	0.0	0.0	0.0
Q2:	0.0	0.0	0.0	0.0	0.0
Q3:	0.0	0.0	0.0	0.0	0.0
Q4:	0.0	0.0	0.0	0.0	0.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					
Quarterly Offset Amounts (lb/Qtr)					
Q1:					
Q2:					
Q3:					
Q4:					

Appendix C
Draft ATC

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT
DRAFT

PERMIT NO: S-1547-1209-6

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: NW 36 **TOWNSHIP:** 27S **RANGE:** 20E

EQUIPMENT DESCRIPTION:

MODIFICATION OF UP TO FIFTY THERMALLY ENHANCED OIL RECOVERY WELLS WITH BEAM-DRIVEN CASING GAS COMPRESSORS OPERATED WITH PRODUCED GAS ROUTED TO PRODUCED FLUID LINE (BELRIDGE OIL FIELD): ALLOW THE USE OF BEAM-DRIVEN CASING GAS COMPRESSORS ON THERMALLY-ENHANCED PRODUCTION WELLS WITHIN SECTION 12 T30S R21E AND SECTION 26 T29S R21E

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. Beam-driven casing gas compressors authorized by this PTO shall only be located in NW Section 36 and Section 25 in T27S, R20E, Sections 7, 18, 20, 28, 29, 33, 34 and 35 in T28S, R21E, Section 12, T30S, R21E and Section 26, T29S, R21E. [District Rule 2201] Federally Enforceable Through Title V Permit
4. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
5. Produced gas shall be routed to produced fluid line prior to entering crude oil storage tanks. [District Rules 2201 and 4401] Federally Enforceable Through Title V Permit
6. All produced fluids (gas, water, oil) from TEOR wells shall be sent to tanks served by a vapor control system with 99% control efficiency. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director APCO

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DAVID WARNER, Director of Permit Services
S-1547-1209-6 : Apr 24 2012 5:25PM - ROEDERS : Joint Inspection NOT Required

7. Permittee shall implement an I&M program consistent with all applicable requirements of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
8. The VOC content of the casing gas shall not exceed 10% by weight. [District Rule 2201] Federally Enforceable Through Title V Permit
9. The casing gas from each well shall be sampled for VOC content within 30 days of retrofitting each well with a beam-driven compressor. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Operator shall conduct representative VOC quarterly sampling of the well casing gas on 20% of the active wells equipped with beam-driven compressors. If the gas sampled is 10% or less VOC by weight for eight consecutive quarterly samplings, the sampling frequency shall only be required annually. If a test shows noncompliance with the percent VOC requirement, the source must return to quarterly testing until eight consecutive quarters show compliance. [District Rule 2201] Federally Enforceable Through Title V Permit
11. During the time any steam-enhanced crude oil production well is undergoing service or repair while the well is not producing, it shall be exempt from the emission control requirements of District Rule 4401, 5.0 (as amended December 14, 2006). [District Rule 4401, 4.1] Federally Enforceable Through Title V Permit
12. The annual inspection requirements of Section 5.8.1 through Section 5.8.5 of Rule 4401 shall not apply to components exclusively handling gas/vapor or liquid with a VOC content of ten percent by weight (10 wt %) or less, as determined by the test methods in Section 6.3.5 of Rule 4401. [District Rule 4401 4.9] Federally Enforceable Through Title V Permit
13. An operator shall not operate a steam-enhanced crude oil production well unless the operator complies with the following requirements: The steam-enhanced crude oil production well vent is closed and the front line production equipment downstream of the wells that carry produced fluids (crude oil or mixture of crude oil and water) is connected to a VOC collection and control system as defined in Section 3.0 of Rule 4401, the well vent may be temporarily opened during periods of attended service or repair of the well provided such activity is done as expeditiously as possible with minimal spillage of material and VOC emissions to the atmosphere, the steam-enhanced crude oil production well vent is open and the well vent is connected to a VOC collection and control system as defined in Section 3.0 of Rule 4401. [District Rule 4401, 5.5.1 and 5.5.2] Federally Enforceable Through Title V Permit
14. An operator shall be in violation of this rule if any District inspection demonstrates the existence of a component with a major liquid leak, a component with a gas leak greater than 50,000 ppmv, or an open-ended line or a valve located at the end of the line that is not sealed with a blind flange, plug, cap or a second closed valve that is not closed at all times, except during attended operations as defined by Section 5.6.2.1 of Rule 4401 requiring process fluid flow through the open-ended lines. [District Rule 4401 5.6.2] Federally Enforceable Through Title V Permit
15. Gas and liquid leaks are as defined in Section 3.20 of Rule 4401. [District Rule 4401 3.20] Federally Enforceable Through Title V Permit
16. An operator shall be in violation of this rule if any District inspection demonstrates the existence of any combination of components with minor liquid leaks, minor gas leaks, or gas leaks greater than 10,000 ppmv up to 50,000 ppmv that totals more than number of leaks allowed by Table 3 of Rule 4401. [District Rule 4401 5.6.2] Federally Enforceable Through Title V Permit
17. An operator shall not use any component with a leak as defined in Section 3.0 of Rule 4401, or that is found to be in violation of the provisions of Section 5.6.2 of Rule 4401. However, components that were found leaking may be used provided such leaking components have been identified with a tag for repair, are repaired, or awaiting re-inspection after being repaired within the applicable time frame specified in Section 5.9 of Rule 4401. [District Rule 4401 5.7.1] Federally Enforceable Through Title V Permit
18. Each hatch shall be closed at all times except during sampling or adding of process material through the hatch, or during attended repair, replacement, or maintenance operations, provided such activities are done as expeditiously as possible with minimal spillage of material and VOC emissions to the atmosphere. [District Rule 4401 5.7.2] Federally Enforceable Through Title V Permit
19. An operator shall comply with the requirements of Section 6.7 of Rule 4401 if there is any change in the description of major components or critical components. [District Rule 4401 5.7.3] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

20. An operator shall affix a readily visible weatherproof tag to a leaking component upon detection of the leak and shall include the following information on the tag: date and time of leak detection, date and time of leak measurement, for a gaseous leak, the leak concentration in ppmv, for a liquid leak, whether it is a major liquid leak or a minor liquid leak, whether the component is an essential component, an unsafe-to monitor component, or a critical component. [District Rule 4401 5.9.1] Federally Enforceable Through Title V Permit
21. An operator shall keep the tag affixed to the component until an operator has met all of the following conditions: repaired or replaced the leaking component, re-inspected the component using the test method in Section 6.3.3, and 5.9.2.3 of Rule 4401, or the component is found to be in compliance with the requirements of this rule. [District Rule 4401 5.9.2] Federally Enforceable Through Title V Permit
22. An operator shall minimize a component leak in order to stop or reduce leakage to the atmosphere immediately to the extent possible, but not later than one (1) hour after detection of the leak. [District Rule 4401 5.9.3] Federally Enforceable Through Title V Permit
23. Except for leaking critical components or leaking essential components subject to the requirements of Section 5.9.7 of Rule 4401, if an operator has minimized a leak but the leak still exceeds the applicable leak limits as defined in Section 3.0 of Rule 4401, an operator shall comply with at least one of the following requirements as soon as practicable but not later than the time period specified in Table 4 of Rule 4401: Repair or replace the leaking component; or vent the leaking component to a VOC collection and control system as defined in Section 3.0 of Rule 4401, or remove the leaking component from operation. [District Rule 4401 5.9.4] Federally Enforceable Through Title V Permit
24. The repair period in calendar days shall not exceed 14 days for minor gas leaks, 5 days for major gas leaks less than or equal to 50,000 ppmv, 2 days for gas leak greater than 50,000 ppmv, 3 days for minor liquid leaks, 2 days for major liquid leaks. [District Rule 4401 5.9.4] Federally Enforceable Through Title V Permit
25. The leak rate measured after leak minimization has been performed shall be the leak rate used to determine the applicable repair period specified in Table 4 of Rule 4401. [District Rule 4401 5.9.5] Federally Enforceable Through Title V Permit
26. The time of the initial leak detection shall be the start of the repair period specified in Table 4 of Rule 4401. [District Rule 4401 5.9.6] Federally Enforceable Through Title V Permit
27. If the leaking component is an essential component or a critical component that cannot be immediately shut down for repairs, and if the leak has been minimized but the leak still exceeds the applicable leak standard of this rule, the operator shall repair or replace the essential component or critical component to eliminate the leak during the next process unit turnaround, but in no case later than one year from the date of the original leak detection, whichever comes earlier. [District Rule 4401 5.9.7] Federally Enforceable Through Title V Permit
28. The operator of any steam-enhanced crude oil production well shall maintain records of the date and well identification where steam injection or well stimulation occurs. [District Rule 4401 6.1.1] Federally Enforceable Through Title V Permit
29. An operator of any steam-enhanced crude oil production well shall keep source test records which demonstrate compliance with the control efficiency requirements of the VOC collection and control system as defined in Section 3.0 of Rule 4401. [District Rule 4401 6.1.3] Federally Enforceable Through Title V Permit
30. The results of source tests conducted pursuant to Section 4.6.2 of Rule 4401 shall be submitted to the APCO within 60 days after the completion of the source test. [District Rule 4401 6.1.4] Federally Enforceable Through Title V Permit
31. An operator shall maintain copies at the facility of the training records of the training program operated pursuant to Section 6.5 of Rule 4401. [District Rule 4401 6.1.7] Federally Enforceable Through Title V Permit
32. Operator shall keep a copy of the APCO-approved Operator Management Plan at the facility. [District Rule 4401 6.1.8] Federally Enforceable Through Title V Permit
33. An operator that discovers that a PRD has released shall record the date that the release was discovered, and the identity and location of the PRD that released. An operator shall submit such information recorded during the calendar year to the APCO no later than 60 days after the end of the calendar year. [District Rule 4401 6.1.11] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

34. An operator shall source test annually all vapor collection and control systems used to control emissions from steam-enhanced crude oil production well vents to determine the control efficiency of the device(s) used for destruction or removal of VOC. Compliance testing shall be performed annually by source testers certified by ARB. Testing shall be performed during June, July, August, or September of each year if the system's control efficiency is dependent upon ambient air temperature. [District Rule 4401 6.2.1] Federally Enforceable Through Title V Permit
35. If approved by EPA, ARB, and the APCO, an operator need not comply with the annual testing requirement of Section 6.2.1 if all uncondensed VOC emissions collected by a vapor collection and control system are incinerated in fuel burning equipment, an internal combustion engine or in a smokeless flare. [District Rule 4401 6.2.2] Federally Enforceable Through Title V Permit
36. If approved by EPA, ARB, and the APCO, an operator need not comply with the annual testing requirement of Section 6.2.1 for a vapor control system which does not have a VOC destruction device. [District Rule 4401 6.2.3] Federally Enforceable Through Title V Permit
37. An operator seeking approval pursuant to Section 6.2.2 or Section 6.2.3 shall submit a written request and supporting information to the APCO. The District shall evaluate the request and if approved by the APCO, the District shall provide EPA and ARB with a copy of the evaluation and shall request EPA and ARB approval. The District evaluation and the APCO request shall be deemed approved unless EPA or ARB objects to such approval in writing within 45 days of the receipt of the APCO request. [District Rule 4401 6.2.4] Federally Enforceable Through Title V Permit
38. An operator shall comply with the following requirements for each gauge tank, as defined in Section 3.17 of Rule 4401: Conduct an initial TVP testing of the produced fluid in each gauge tank not later than June 14, 2007. Thereafter, an operator shall conduct periodic TVP testing of each gauge tank at least once every 24 months during summer (July - September), and whenever there is a change in the source or type of produced fluid in the gauge tank. The TVP testing shall be conducted at the actual storage temperature of the produced fluid in the gauge tank using the applicable TVP test method specified in Section 6.4 of Rule 4623 (Storage of Organic Liquids). The operator shall submit the TVP testing results to the APCO as specified in Section 6.1.10 of Rule 4401. [District Rule 4401 6.2.5] Federally Enforceable Through Title V Permit
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