



# San Joaquin Valley

AIR POLLUTION CONTROL DISTRICT



## HEALTHY AIR LIVING™

OCT 12 2012

Mr. John Ludwick  
Berry Petroleum Company  
5201 Truxtun Ave.  
Bakersfield, CA 93309-0640

**Re: Final - Authority to Construct / COC (Significant Mod)  
District Facility # S-1246  
Project # S-1111928**

Dear Mr. Ludwick:

The Air Pollution Control Officer has issued Authorities to Construct (Authorities to Construct S-1246-290-16 & S-1246-354-0) with Certificates of Conformity to Berry Petroleum Company located at the Midway Sunset oilfield within Berry's Heavy Oil Western Stationary Source (SE/4 Sec 36, T 12N, R 24W). The modification consisted of the installation of a 85.0 MMBtu/hr natural gas fired steam generator (S-1246-354-0) and the modification of a Thermally Enhanced Oil Recovery (TEOR) system (-290-6) to include the new steam generator as an additional VOC disposal device.

Enclosed are the Authorities to Construct. The application and proposal were sent to US EPA Region IX on December 21, 2011. No comments were received following the District's preliminary decision on this project. Please note that the engineering evaluation for the project was revised to include updated language for CEQA

The notice of final decision for this project will be published approximately three days from the date of this letter.

Prior to operating with modifications authorized by the Authority to Construct, you must submit an application to modify the Title V permit as an administrative amendment in accordance with District Rule 2520, Section 11.5.

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

Sincerely,

David Warner  
Director of Permit Services

DW: SD/cm

Enclosures

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

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

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



**OCT 12 2012**

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

**Re: Final - Authority to Construct / COC (Significant Mod)  
District Facility # S-1246  
Project # S-1111928**

Dear Mr. Rios:

The Air Pollution Control Officer has issued Authorities to Construct (Authorities to Construct S-1246-290-16 & S-1246-354-0 ) with Certificates of Conformity to Berry Petroleum Company located at the Midway Sunset oilfield within Berry's Heavy Oil Western Stationary Source (SE/4 Sec 36, T 12N, R 24W). The modification consisted of the installation of a 85.0 MMBtu/hr natural gas fired steam generator (S-1246-354-0) and the modification of a Thermally Enhanced Oil Recovery (TEOR) system (-290-6) to include the new steam generator as an additional VOC disposal device.

Enclosed is a copy of the Authorities to Construct. The application and proposal were sent to US EPA Region IX on December 21, 2011. No comments were received following the District's preliminary decision on this project. Please note that the engineering evaluation for the project was revised to include updated language for CEQA

The notice of final decision for this project will be published approximately three days from the date of this letter.

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

Sincerely,



David Warner  
Director of Permit Services

DW: SD/cm

Enclosures



# San Joaquin Valley

AIR POLLUTION CONTROL DISTRICT



## HEALTHY AIR LIVING™

OCT 12 2012

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

**Re: Final - Authority to Construct / COC (Significant Mod)  
District Facility # S-1246  
Project # S-1111928**

Dear Mr. Tollstrup:

The Air Pollution Control Officer has issued Authorities to Construct (Authorities to Construct S-1246-290-16 & S-1246-354-0) with Certificates of Conformity to Berry Petroleum Company located at the Midway Sunset oilfield within Berry's Heavy Oil Western Stationary Source (SE/4 Sec 36, T 12N, R 24W). The modification consisted of the installation of a 85.0 MMBtu/hr natural gas fired steam generator (S-1246-354-0) and the modification of a Thermally Enhanced Oil Recovery (TEOR) system (-290-6) to include the new steam generator as an additional VOC disposal device.

Enclosed is a copy of the Authorities to Construct. The application and proposal were sent to US EPA Region IX on December 21, 2011. No comments were received following the District's preliminary decision on this project. Please note that the engineering evaluation for the project was revised to include updated language for CEQA.

The notice of final decision for this project will be published approximately three days from the date of this letter.

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

Sincerely,

David Warner  
Director of Permit Services

DW: SD/cm

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

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

NOTICE IS HEREBY GIVEN that the San Joaquin Valley Air Pollution Control District has made its final decision to issue Authorities to Construct to Berry Petroleum Company for heavy oil facility located located at the Midway Sunset oilfield within Berry's Heavy Oil Western Stationary Source (SE/4 Sec 36, T 12N, R 24W), California. The modification consisted of the installation of a 85.0 MMBtu/hr natural gas fired steam generator (S-1246-354-0) and the modification of a Thermally Enhanced Oil Recovery (TEOR) system (-290-6) to include the new steam generator as an additional VOC disposal device.

The District's analysis of the legal and factual basis for this proposed action, project #S-1111928, is available for public inspection at the District office at the address below. For additional information regarding this matter, please contact Mr. Leonard Scandura, Permit Services Manager, at (661) 392-5500, or contact David Warner, Director of Permit Services, in writing at SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT, 1990 E. GETTYSBURG AVE, FRESNO, CA 93726-0244.



## AUTHORITY TO CONSTRUCT

PERMIT NO: S-1246-290-16

ISSUANCE DATE: 10/08/2012

LEGAL OWNER OR OPERATOR: BERRY PETROLEUM COMPANY  
MAILING ADDRESS: 5201 TRUXTUN AVENUE SUITE 100  
ATTN: EH&S MANAGER  
BAKERSFIELD, CA 93309-0422

LOCATION: HEAVY OIL WESTERN STATIONARY SOURCE  
KERN COUNTY, CA

SECTION: SE36 TOWNSHIP: 12N RANGE: 24W

### EQUIPMENT DESCRIPTION:

MODIFICATION OF TEOR OPERATION WITH WELL VENT CASING GAS COLLECTION AND CONTROL SYSTEM INCLUDING UP TO 250 STEAM ENHANCED WELLS, GAS/LIQUID SEPARATORS, TRANSFER PUMPS, AIR-COOLED HEAT EXCHANGERS, CONDENSATE TANKS (< 100 BBL), VAPOR COMPRESSORS, SULFUR SCRUBBERS VENTED TO STEAM GENERATORS S-1246-19, '-24, '-269, '-332, PERMIT EXEMPT 4.2 MMBTU/HR HEATER TREATER, OR DOGGR APPROVED WASTE GAS DISPOSAL WELLS (ETHEL D PROPERTY): INCLUDE STEAM GENERATOR S-1246-354 AS A DISPOSAL DEVICE

## CONDITIONS

1. 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. 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. Well vent vapor collection and control system includes piping from sulfur scrubber(s) to steam generators S-1246-19, '-24 -269 and -354, and a permit exempt 4.2 MMBtu/hr heater treaters. Well vent vapor collection and control system includes bypass piping around sulfur scrubber(s) to booster compressor for up to 3 DOGGR-approved vapor disposal well(s). Only one sulfur scrubber need operate at any time provided compliance with emissions limits have been demonstrated when operating only one sulfur scrubber. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director / APCO

DAVID WARNER, Director of Permit Services

S-1246-290-16 : Oct 8 2012 8:58AM - DAVIDSOS : Joint Inspection NOT Required

4. Scrubbed well vent vapor collection and control system (TEOR) gas shall be incinerated only in steam generators S-1246-19, -24, -269, and -354 and a 4.2 MMBtu/hr heater treater, and unscrubbed gas may be disposed of in up to 3 DOGGR-approved vapor disposal wells. [District Rule 2201] Federally Enforceable Through Title V Permit
5. Sulfur scrubber(s) shall meet at least one of the following performance criteria: sulfur compounds reduction efficiency shall be maintained at 95% or greater, or the sulfur compounds concentration in the vapors exiting the sulfur scrubber(s) shall not exceed 3 ppmv. [District Rule 2201] Federally Enforceable Through Title V Permit
6. Compliance with sulfur scrubber efficiency requirement shall be demonstrated by measurement of total sulfur compound concentrations at scrubber inlet and outlet. The measurement shall be conducted on grab samples taken at scrubber inlet and outlet using one of the following test methods: ASTM D1072, ASTM D3246, ASTM D6228 (GC-FPD), double GC for H<sub>2</sub>S and mercaptans, or equivalent test method with prior District approval. Grab samples shall be taken and analyzed upon initial use of the scrubber and, thereafter, every six months. If scrubber is not in use at six month anniversary date, then efficiency shall be demonstrated within two weeks of returning scrubber to service. For each month in which scrubber is operated and laboratory analysis of grab samples is not required, operator shall monitor and adjust scrubber performance as needed using gas-detection tubes calibrated for existing sulfur species or other equivalent District approved sulfur detection method(s) or device(s). [District Rule 2201] Federally Enforceable Through Title V Permit
7. During recharging of the sulfur scrubber(s), untreated well casing vent collection system vapors shall not be introduced into the fuel system or vented to the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit
8. Scrubbed well casing vent vapor collection and control system gas burned in 4.2 MMBtu/hr heater treater shall be demonstrated by fuel gas analysis to qualify for permit exemption immediately upon burning TEOR gas in unit and at least every six months thereafter. [District Rule 2020, 8.0] Federally Enforceable Through Title V Permit
9. Fugitive emissions from all components in gas service including polish rods associated with this TEOR operation shall not exceed 79.5 lb VOC/day. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Collected vapors sent to District approved incineration devices shall be processed through sulfur scrubber(s) prior to incineration. [District Rule 2201] Federally Enforceable Through Title V Permit
11. The sulfur scrubber(s) shall be operated to maintain continued compliance with fuel sulfur content limits on steam generator S-1246-24 and -354. [District Rule 2201] Federally Enforceable Through Title V Permit
12. Permittee shall cease injection vapors and notify the District immediately if DOGGR vapor disposal well approval is revoked, denied, terminated, surrendered or altered to disallow injection. [District Rule 2201] Federally Enforceable Through Title V Permit
13. 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
14. 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, 5.1.1 and 5.1.2] Federally Enforceable Through Title V Permit
15. An operator shall be in violation of this rule if any District inspection demonstrates that one or more of the following conditions in Section 5.2.2 exist at the facility or if any operator inspection conducted pursuant to Section 5.4 of Rule 4401 demonstrates that one or more of the following conditions in Section 5.2.2 exist at the facility: Existence of 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 5.2.2.1 of Rule 4401 requiring process fluid flow through the open-ended lines. [District Rule 4401, 5.4.2] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

16. An operator shall be in violation of this rule if any District inspection demonstrates that one or more of the following conditions exist at the facility or if any operator inspection conducted pursuant to Section 5.4 of Rule 4401 demonstrates that one or more of the conditions in Section 5.2.2 exist at the facility: existence of a component with any of the following: a major liquid leak, a gas leak greater than 50,000 ppmv, a minor liquid leak or a minor gas leak in excess of the allowable number of leaks allowed by Table 3 of Rule 4401, or a gas leak greater than 10,000 ppmv up to 50,000 ppmv in excess of the allowable number of leaks allowed by Table 3 of Rule 4401. [District Rule 4401, 5.2.2] Federally Enforceable Through Title V Permit
17. 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
18. 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
19. 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
20. 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
21. An operator shall comply with the following requirements for each gauge tank, as defined in Section 3.0 of Rule 4401: 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 6.1.9 of Rule 4401. [District Rule 4401 6.2.3] Federally Enforceable Through Title V Permit
22. 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
23. VOC content shall be analyzed by using the latest revision of ASTM Method E168, E169, or E260 as applicable. Analysis of halogenated exempt compounds shall be performed by using ARB Method 432. [District Rule 4401 6.3.2] Federally Enforceable Through Title V Permit
24. 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

CONDITIONS CONTINUE ON NEXT PAGE



25. 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 6.3.4] Federally Enforceable Through Title V Permit
26. 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
27. 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 5.2.2 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 5.5 of Rule 4401. [District Rule 4401 5.3.1] Federally Enforceable Through Title V Permit
28. 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 5.3.2] Federally Enforceable Through Title V Permit
29. 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 5.3.3] Federally Enforceable Through Title V Permit
30. Except for pipes and unsafe-to-monitor components, an operator shall inspect all other components pursuant to the requirements of Section 6.3.3 of Rule 4401 at least once every year. [District Rule 4401 5.4.1] Federally Enforceable Through Title V Permit
31. An operator shall visually inspect all pipes at least once every year. Any visual inspection of pipes that indicates a leak that cannot be immediately repaired to meet the leak standards of this rule shall be inspected within 24 hours after detecting the leak. If a leak is found, the leak shall be repaired as soon as practicable but not later than the time frame specified in Table 4 of Rule 4401. [District Rule 4401 5.4.2] Federally Enforceable Through Title V Permit
32. An operator shall inspect for leaks all accessible operating pumps, compressors, and PRDs in service as follows: 1) An operator shall audio-visually (by hearing and by sight) inspect for leaks all accessible operating pumps, compressors, and PRDs in service at least once each calendar week. 2) Any audio-visual inspection of an accessible operating pump, compressor, and PRD performed by an operator that indicates a leak that cannot be immediately repaired to meet the leak standards of this rule shall be inspected not later than 24 hours after conducting the audio-visual inspection. If a leak is found, the leak shall be repaired as soon as practicable but not later than the time frame specified in Table 4 of this Rule. [District Rule 4401, 5.4.3] Federally Enforceable Through Title V Permit
33. The operator shall also perform the following inspections: 1) An operator shall initially inspect a PRD that releases to the atmosphere as soon as practicable but not later than 24 hours after the discovery of the release. An operator shall re-inspect the PRD not earlier than 24 hours after the initial inspection but not later than 15 calendar days after the initial inspection. 2) An operator shall inspect all new, replaced, or repaired fittings, flanges, and threaded connections within 72 hours of placing the component in service, and 3) Except for PRDs subject to the requirements of Section 5.8.4.1 of this Rule, an operator shall inspect a component that has been repaired or replaced not later than 15 calendar days after the component was repaired or replaced. [District Rule 4401, 5.4.4] Federally Enforceable Through Title V Permit
34. An operator shall inspect all unsafe-to-monitor components during each turnaround. [District Rule 4401 5.4.7] Federally Enforceable Through Title V Permit
35. District inspection in no way fulfills any of the mandatory inspection requirements that are placed upon operators and cannot be used or counted as an inspection required of an operator. [District Rule 4401 5.4.8] Federally Enforceable Through Title V Permit
36. Upon detection of a leak, an operator shall affix a readily visible weatherproof tag to that leaking component that includes the following information: 1) The date and time of leak detection; 2) The date and time of the leak measurement; 3) For a gaseous leak, the leak concentration in ppmv; 4) For a liquid leak, whether it is a major or minor liquid leak; and 5) Whether the component is an essential component, and unsafe-to-monitor component, or a critical component. [District Rule 4401, 5.5.1] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE



37. The tag shall remain affixed to the leaky component until all the following requirements are met: 1) The component is repaired or replaced, 2) The component is re-inspected as set forth in Section 6.3, and 3) The component is found to be in compliance with this Rule. [District Rule 4401, 5.5.2] Federally Enforceable Through Title V Permit
38. 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 5.5.3] Federally Enforceable Through Title V Permit
39. Except for leaking critical components or leaking essential components subject to the requirements of Section 5.5.7 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 5.5.4] Federally Enforceable Through Title V Permit
40. 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 5.5.4] Federally Enforceable Through Title V Permit
41. 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 5.5.5] Federally Enforceable Through Title V Permit
42. 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 5.5.6] Federally Enforceable Through Title V Permit
43. 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 5.5.7] Federally Enforceable Through Title V Permit
44. By January 30 of each year, an operator shall submit to the APCO for approval, in writing, an annual report indicating any changes to an existing Operator Management Plan. [District Rule 4401 6.7] Federally Enforceable Through Title V Permit
45. An inspection and maintenance program consistent with Rule 4409 shall be implemented and maintained for polish rod stuffing boxes (identified by annual well roster required by this permit). [District Rule 2201] Federally Enforceable Through Title V Permit
46. Permittee shall provide District with copy of DOGGR approval of vapor disposal well prior to injecting any TEOR gas. [District Rule 2010] Federally Enforceable Through Title V Permit
47. Permittee shall maintain a written record of inlet and outlet sulfur compound measurements and recharging dates and such records shall be made readily available for District inspection upon request. [District Rule 2201] Federally Enforceable Through Title V Permit
48. Permittee shall maintain with the permit a current listing of all steam enhanced wells with casing vents connected to the well vent collection and control system. [District Rules 1070 and 2520, 9.3.2] Federally Enforceable Through Title V Permit
49. Permittee shall maintain accurate component count for TEOR operation according to CAPCOA's "California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities," Table IV-2c (Feb 1999), Screening Value Range emission factors. Permittee shall update such records when new components are installed. [District Rule 2201] Federally Enforceable Through Title V Permit

50. Operator shall maintain an inspection log in which an operator records, at a minimum, all of the following information for each inspection performed: The total number of components inspected, total number and percentage of leaking components found by component type, location, type, and name or description of each leaking component and description of any unit where the leaking component is found, date of leak detection and the method of leak detection. For gaseous leaks, the leak concentration in ppmv, and for liquid leaks record whether the leak is a major liquid leak or a minor liquid leak. the date of repair, replacement, or removal from operation of leaking components, identify and location of essential components and critical components found leaking that cannot be repaired until the next process unit turnaround or not later than one year after leak detection, whichever comes earlier, methods used to minimize the leak from essential components and critical components found leaking that cannot be repaired until the next process unit turnaround or not later than one year after leak detection, whichever comes earlier, the date of re-inspection and the leak concentration in ppmv after the component is repaired or is replaced, the inspector's name, business mailing address, and business telephone number, date and signature of the facility operator responsible for the inspection and repair program certifying the accuracy of the information recorded in the log. [District Rule 4401 6.4] Federally Enforceable Through Title V Permit
51. 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
52. 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 6.1.3] Federally Enforceable Through Title V Permit
53. Operator of any steam-enhanced crude oil production well shall keep an inspection log maintained pursuant to Section 6.4 of Rule 4401. [District Rule 4401 6.1.4] Federally Enforceable Through Title V Permit
54. Records of each calibration of the portable hydrocarbon detection instrument utilized for inspecting components, including a copy of current calibration gas certification from the vendor of said calibration gas cylinder, the date of calibration, concentration of calibration gas, instrument reading of calibration gas before adjustment, instrument reading of calibration gas after adjustment, calibration gas expiration date, and calibration gas cylinder pressure at the time of calibration shall be maintained. [District Rule 4401 6.1.5] Federally Enforceable Through Title V Permit
55. 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 6.1.6] Federally Enforceable Through Title V Permit
56. Operator shall keep a copy of the APCO-approved Operator Management Plan at the facility. [District Rule 4401 6.1.7] Federally Enforceable Through Title V Permit
57. Operator shall submit to the APCO not later than June 14, 2007 a list of all gauge tanks, as defined in Section 3.17. The list shall contain the size, identification number, the location of each gauge tank and specify whether the gauge tank is upstream of all front line production equipment. [District Rule 4401 6.1.8] Federally Enforceable Through Title V Permit
58. The results of gauge tank TVP testing conducted pursuant to Section 6.2.3 shall be submitted to the APCO within 60 days after the completion of the testing. [District Rule 4401 6.1.9] Federally Enforceable Through Title V Permit
59. 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 6.1.10] Federally Enforceable Through Title V Permit
60. All records required to be maintained by this permit shall be maintained for a period of at least five years and shall be made readily available for District inspection upon request. [District Rules 1070, 4401, and 2520, 9.4.2] Federally Enforceable Through Title V Permit
61. ATC S-1246-290-10 shall be implemented prior to or concurrently with this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit
62. ATC S-1246--1246-354-0 shall be implemented prior to or concurrently with this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit

63. Berry Petroleum Company shall comply with all applicable District permitting requirements and shall surrender Emission Reduction Credits to offset operational emissions as required by District NSR requirements prior to construction. [Public Resources Code 21000-21177: California Environmental Quality Act]
64. Permittee shall retain records on-site demonstrating compliance with California Department of Fish and Game mitigation measures BIO 1 through 23 to ensure the protection of potential biological species impacts. [Public Resources Code 21000-21177: California Environmental Quality Act]
65. In the event that archaeological/paleontological resources are discovered during ground-disturbing activities associated with construction of the proposed Project, all work within 100 feet of the find shall cease. BPC will notify and retain a qualified archaeologist/paleontologist to assess and provide an evaluation of the significance of the find. BPC shall determine whether avoidance is necessary and feasible in light of the factors such as the nature of the find, project design, costs, and other considerations, and, if necessary, develop appropriate mitigation measures in consultation with Kern County and other appropriate agencies and individuals. Work may resume on the project site once the evaluation of the find is complete by the qualified archaeologist/paleontologist. [Public Resources Code 21000-21177: California Environmental Quality Act]
66. In the event that human remains are discovered during construction of the Project, all work within 100 feet shall be ceased and the discovery will immediately be reported to the County Coroner. If the remains are determined to be Native American in origin, the County Coroner shall notify the Native American Heritage Commission (NAHC) within 24 hours of the determination. The NAHC will solicit those persons it believe to be the nearest descendants of the remains for recommendations. BPC shall, in consultation with the identified descendants of the remains and/or NAHC, will identify the appropriate measures for the treatment or disposition of the remains. [Public Resources Code 21000-21177: California Environmental Quality Act]
67. During construction activities, if unknown, unrecorded or abandoned wells are discovered or if any wells are damaged, BPC shall immediately notify DOGGR. [Public Resources Code 21000-21177: California Environmental Quality Act]
68. Any wells discovered or exposed during construction activities will be tested for flammable vapors. [Public Resources Code 21000-21177: California Environmental Quality Act]



## AUTHORITY TO CONSTRUCT

**PERMIT NO:** S-1246-354-0

**ISSUANCE DATE:** 10/08/2012

**LEGAL OWNER OR OPERATOR:** BERRY PETROLEUM COMPANY  
**MAILING ADDRESS:** 5201 TRUXTUN AVENUE SUITE 100  
ATTN: EH&S MANAGER  
BAKERSFIELD, CA 93309-0422

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

**SECTION:** SE 36 **TOWNSHIP:** 12N **RANGE:** 24W

**EQUIPMENT DESCRIPTION:**

85 MMBTU/HR NATURAL/ETHANE-RICH NATURAL/TEOR/TVR GAS-FIRED STEAM GENERATOR (EDJ-431) WITH A NORTH AMERICAN MAGNA FLAME LE ULTRA LOW NOX BURNER, FLUE GAS RECIRCULATION (FGR) AND AN O2 CONTROLLER

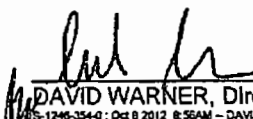
### CONDITIONS

1. 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. 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. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap, roof overhang, or any other obstruction. [District Rule 4102] Federally Enforceable Through Title V Permit
4. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
5. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director / APCO

  
DAVID WARNER, Director of Permit Services

6. This unit shall be fired on natural gas, TEOR gas, and/or TVR gas treated to remove 95% by weight of sulfur compounds or treated such that the sulfur content does not exceed 1 gr of sulfur compounds (as S) per 100 scf. [District Rule 2201] Federally Enforceable Through Title V Permit
7. The unit shall only be fired on natural/TEOR/TVR/ ethane rich gas with a maximum sulfur content of 2.34 gr S/100scf. [District Rule 2201] Federally Enforceable Through Title V Permit
8. The higher heating value of each non-certified fuel shall be certified by a third party fuel supplier or determined by ASTM D1826 or D1945 in conjunction with ASTM D 3588. [District Rule 2201 and 4320] Federally Enforceable Through Title V Permit
9. Except for periods of startup and shutdown, emissions from the natural gas-fired unit shall not exceed any of the following limits: 7 ppmvd NOx @ 3% O2 or 0.008 lb-NOx/MMBtu, 0.005 lb-PM10/MMBtu, 35 ppmvd CO @ 3% O2 or 0.026 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4201, 4301, 4305, 4306, 4320, and 4801] Federally Enforceable Through Title V Permit
10. Duration of start-up or shutdown shall not exceed two hours each per occurrence. During start-up or shutdown, the emissions control system shall be in operation, and emissions shall be minimized insofar as technologically possible. The operator shall maintain daily records of the duration of start-up and shutdown periods. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
11. Start-up is defined as the period of time during which a unit is brought from a shutdown status to its operating temperature and pressure, including the time required by the unit's emission control system to reach full operation. Shutdown is defined as the period of time during which a unit is taken from an operational to a non-operational status by allowing it to cool down from its operating temperature to ambient temperature as the fuel supply to the unit is completely turned off. [District Rule 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
12. Source testing to measure natural gas-combustion NOx and CO emissions from this unit shall be conducted within 60 days of initial startup and at least once every twelve (12) months thereafter. After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
13. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
14. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
15. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. 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. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
16. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 5.5.5, 4306, 5.5.5, and 4320] Federally Enforceable Through Title V Permit
17. NOx emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
18. CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
19. Stack gas oxygen (O2) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

20. Fuel sulfur content shall be determined using EPA Method 11 or Method 15. [District Rule 4320] Federally Enforceable Through Title V Permit
21. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
22. The permittee shall monitor and record the stack concentration of NO<sub>x</sub>, CO, and O<sub>2</sub> at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
23. All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the permit-to-operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
24. If either the NO<sub>x</sub> or CO concentrations corrected to 3% O<sub>2</sub>, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of the performing the notification and testing required by this condition. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
25. At least quarterly, the permittee shall monitor using the methods specified in this permit the higher heating value of each non-certified fuel supplied to this unit, or, alternatively, have the higher heating value certified by the fuel supplier. The records of higher heating value and quantity of fuel combusted shall be used to demonstrate that the rated heat input capacity of this unit, as averaged over a calendar quarter, is not exceeded. [District Rules 2201] Federally Enforceable Through Title V Permit
26. Permittee shall determine sulfur content of combusted gas weekly for eight consecutive weeks. After demonstrating compliance for eight consecutive weeks testing may be conducted on a quarterly basis. Weekly sulfur testing shall resume if quarterly testing does not indicate compliance. Weekly gas analysis shall be performed using Draeger tubes and quarterly analysis using ASTM method D3246 or double GC for H<sub>2</sub>S and mercaptans. First of the weekly gas analyses shall be done using laboratory analysis. [District Rules 1081 and 2201] Federally Enforceable Through Title V Permit
27. Compliance with fuel sulfur limit(s) can be demonstrated either by monitoring sulfur content at location(s) after all fuel sources are combined prior to incineration, or by monitoring the sulfur content and volume of each fuel source and performing mass balance calculations. Records of monitoring locations, detected sulfur concentrations, and mass balance calculations, if necessary, shall be maintained and kept onsite and made readily available for District inspection upon request. [District Rules 1081 and 2201] Federally Enforceable Through Title V Permit
28. The permittee shall maintain records of: (1) the date and time of NO<sub>x</sub>, CO, and O<sub>2</sub> measurements, (2) the O<sub>2</sub> concentration in percent and the measured NO<sub>x</sub> and CO concentrations corrected to 3% O<sub>2</sub>, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
29. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, 4306, 4320 and 40 CFR 60.48c(i)] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE



30. Prior to operating equipment under this Authority to Construct, permittee shall surrender emission reduction credits for the following quantities of emissions: NOx: 2234 lb/quarter; SOx: 1871 lb/quarter; PM10: 1396 lb/quarter, and VOC: 1536 lb/qtr. Offsets include the applicable offset ratio specified in Section 4.8 of Rule 2201 (as amended 4/21/11). PM10 may be offset using SOx at an interpollutant offset ratio of 1.0 tons SOx/ton PM10 . . [District Rule 2201] Federally Enforceable Through Title V Permit
31. ERC Certificate Numbers C-1101-2, S-3659-2, S-3665-5, and N-979-1 (or certificates split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
32. Berry Petroleum Company shall comply with all applicable District permitting requirements and shall surrender Emission Reduction Credits to offset operational emissions as required by District NSR requirements prior to construction. [Public Resources Code 21000-21177: California Environmental Quality Act]
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