



December 11, 2023

Ms. Melinda Palmer  
Kern Energy  
7724 E Panama Ln  
Bakersfield, CA 93307

**Re: Final - Authority to Construct / Certificate of Conformity (Significant Mod)**  
**Facility Number: S-37**  
**Project Number: S-1234053**

Dear Ms. Palmer:

The Air Pollution Control Officer has issued Authority to Construct (ATC) S-37-1-18 with a Certificate of Conformity to Kern Energy at 7724 E Panama Ln, Bakersfield, CA. The project authorizes the replacement of the existing burners on the 60 MMBtu/hr Tulsa process heater and 60 MMBtu/hr Born process heater listed on permit unit S-37-1 with ClearSign model Core low NOx burners for compliance with Rule 4306. Enclosed are the ATC and a copy of the notice of final action that has been posted on the District's website ([www.valleyair.org](http://www.valleyair.org)).

Notice of the District's preliminary decision to issue the ATC was posted on November 8, 2023. The District's analysis of the proposal was also sent to CARB and US EPA Region IX on November 8, 2023. No comments were received following the District's preliminary decision on this project.

Also enclosed is an invoice for the engineering evaluation fees pursuant to District Rule 3010. Please remit the amount owed, along with a copy of the attached invoice, within 60 days.

Prior to operating with the modifications authorized by the ATC, you must submit an application to modify the Title V permit as an administrative amendment in accordance with District Rule 2520, Section 11.5. Application forms are found on the District's website at [www.valleyair.org/permits/TVforms](http://www.valleyair.org/permits/TVforms).

**Samir Sheikh**  
Executive Director/Air Pollution Control Officer

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**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

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Thank you for your cooperation in this matter. If you have any questions, please contact Mr. Errol Villegas, Permit Services Manager, at (559) 230-5900.

Sincerely,



Brian Clements  
Director of Permit Services

Enclosures

cc: Courtney Graham, CARB (w/enclosure) via email  
cc: Gerardo Rios, EPA (w/enclosure) via EPS



## AUTHORITY TO CONSTRUCT

**PERMIT NO:** S-37-1-18

**ISSUANCE DATE:** 12/11/2023

**LEGAL OWNER OR OPERATOR:** KERN ENERGY  
**MAILING ADDRESS:** PANAMA LN & WEEDPATCH HWY  
BAKERSFIELD, CA 93307-9210

**LOCATION:** PANAMA LN & WEEDPATCH HWY  
BAKERSFIELD, CA 93307-9210

**SECTION:** 25 **TOWNSHIP:** 30S **RANGE:** 28E

**EQUIPMENT DESCRIPTION:**

MODIFICATION OF 120 MMBTU/HR CRUDE UNIT INCLUDING ONE DESALTER, 4 FRACTIONATION VESSELS, STRIPPER, 2 ACCUMULATORS, LIGHT NAPHTHA STABILIZER, KNOCKOUT DRUM SCRUBBER, 60 MMBTU/HR TULSA HEATERS INC. PROCESS HEATER, 60 MMBTU/HR BORN HEATER AND 35 HEAT EXCHANGERS: REPLACE EXISTING BURNERS ON PROCESS HEATERS WITH CLEARSIGN MODEL CORE LOW NOX BURNERS FOR RULE 4306 COMPLIANCE

## CONDITIONS

1. This Authority to Construct (ATC) cancels and supersedes ATC S-37-1-17. [District Rule 2201] Federally Enforceable Through Title V Permit
2. 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
3. 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
4. Pursuant to Rule 4320, beginning in 2010 the operator shall pay an annual emission fee to the District for NOx emissions from this unit for the previous calendar year. Payments are due by July 1 of each year. Payments shall continue annually until either the unit is permanently removed from service in the District or the operator demonstrates compliance with the applicable NOx emission limit listed in Rule 4320. [District Rule 4320] Federally Enforceable Through Title V Permit

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.

Samir Sheikh, Executive Director / APCO

Brian Clements, Director of Permit Services

S-37-1-18 : Dec 11 2023 9:19AM -- HONGM : Joint Inspection NOT Required

5. Particulate matter emissions shall not exceed 0.1 grain/dscf. Emissions of combustion contaminants shall not exceed 0.1 grain per cubic foot of gas calculated to 12% CO<sub>2</sub> at dry standard conditions. Emissions of combustion contaminants shall not exceed ten (10) pounds per hour. [District Rules 4201 and 4301] Federally Enforceable Through Title V Permit
6. Emissions of sulfur compounds from this unit shall not exceed 200 lb per hour, calculated as SO<sub>2</sub>. [District Rules 2520 and 4301] Federally Enforceable Through Title V Permit
7. The duration of each startup and shutdown period of each 60 MMBtu/hr process heater shall not exceed 9.7 hours and 6.4 hours respectfully. Emission limits of District Rules 4305 and 4306 shall be waived during periods of startup and shutdown. [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
8. Annual startup and shutdown hours of operation for each 60 MMBtu/hr process heater shall not exceed 48.3 hours per year. [District Rule 2201] Federally Enforceable Through Title V Permit
9. The emission control systems shall be in operation and emissions shall be minimized insofar as technologically feasible during startup and shutdown. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
10. Crude unit heaters shall be fired solely on treated refinery fuel gas or purchased natural gas. [District Rule 2201] Federally Enforceable Through Title V Permit
11. Refinery fuel gas supply shall be equipped with continuous H<sub>2</sub>S monitor meeting the requirements of 40 CFR 60 Subpart J. [District Rule 4320 and 40 CFR 60 Subpart J] Federally Enforceable Through Title V Permit
12. Sulfur content of refinery fuel gas burned in crude unit heaters shall not to exceed 5 gr S/100 scf (84.5 ppmv H<sub>2</sub>S). [District Rules 2201 and 4320, and 40 CFR Part 60 Subpart J] Federally Enforceable Through Title V Permit
13. Sulfur content of natural gas burned in crude unit heaters shall not exceed 1 gr S/100 scf (15.9 ppmv H<sub>2</sub>S). [District Rules 2201 and 4320, and 40 CFR 60 Subpart J] Federally Enforceable Through Title V Permit
14. The concentration of sulfur compounds in the exhaust from this unit shall not exceed 0.2% by volume as measured on a dry basis over a 15 minute period. [District Rules 2520 and 4801, and Kern County Rule 407] Federally Enforceable Through Title V Permit
15. This unit is subject to Rule 4455 Leak Detection and Repair Conditions on the facility wide permit S-37-0. [District Rule 4455] Federally Enforceable Through Title V Permit
16. The compressors associate with Skids C-02 and C-03 are subject 40 CFR 60 Subpart GGGa. The requirements are identified in the facility-wide permit. [40 CFR 60 Subpart GGGa] Federally Enforceable Through Title V Permit
17. For valves and connectors associated with compressor skids C-02 and C-03, a leak shall be defined as a reading of methane in excess of 100 ppmv above background when measured per EPA Method 21. For pump and compressor seals associated with compressor skids C-02 and C-03, a leak shall be defined as a reading of methane in excess of 500 ppmv above background when measure per EPA Method 21. [District Rule 2201] Federally Enforceable Through Title V Permit
18. VOC emission rate from fugitive components associated with compressor skids C-02 and C-03 shall not exceed 10.5 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit
19. Permit holder shall maintain accurate component count for compressor skids C-02 and C-03 and resultant emissions according to CAPCOA's "California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities," Table IV-3a (Feb 1999), Correlation Equations Method. Permit holder shall update such records when new components are approved and installed. Components shall be screened and leak rate shall be measured in accordance with the frequency of inspection specified in Rule 4455. [District Rule 2201] Federally Enforceable Through Title V Permit
20. 60 MMBtu/hr Tulsa Heaters Inc. process heater shall be fired exclusively on PUC or FERC regulated natural gas or refinery fuel gas. [District Rules 2201, 4305, 4306, and 4351] Federally Enforceable Through Title V Permit
21. 60 MMBtu/hr Born heater shall be fired exclusively on PUC or FERC regulated natural gas or refinery fuel gas. [District Rules 2201, 4305, 4306 and 4351] Federally Enforceable Through Title V Permit

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22. During steady-state periods, the NOx emission rate of the Born process heater shall not exceed 15 ppmv @ 3% O2 or 0.018 lb/MMBtu. [District Rules 2201, 4301, 4305, 4306, and 4351] Federally Enforceable Through Title V Permit
23. During steady-state periods, the NOx emission rate of the Tulsa process heater shall not exceed 9 ppmv @ 3% O2 or 0.011 lb/MMBtu. [District Rules 2201, 4301, 4305, 4306, and 4351] Federally Enforceable Through Title V Permit
24. During startup and shutdown periods, the NOx emission rate of the Born process heater and Tulsa process heater shall not exceed 91 ppmv (0.11 lb/MMBtu). [District Rules 2201, 4301, and 4351] Federally Enforceable Through Title V Permit
25. The emission rates of each 60 MMBtu/hr process heater shall not exceed any of the following limits: CO: 150 ppmvd @ 3% O2; VOC: 0.0026 lb/MMBtu; PM10: 0.014 lb/MMBtu; or SOx: 0.0167 lb SO2/MMBtu. [District Rules 2201, 4301, 4305, 4306, and 4351] Federally Enforceable Through Title V Permit
26. Heat input to Tulsa Heater Inc. process heater shall not exceed 60 MMBtu/hr (calculated with higher heating value), as measured on an annual average basis. [District Rule 2201] Federally Enforceable Through Title V Permit
27. Heat input to Born process heater shall not exceed 60 MMBtu/hr (calculated with higher heating value), as measured on an annual average basis. [District Rule 2201]
28. Permittee shall demonstrate compliance with the heat input limit of Tulsa Heaters Inc. process heater by maintaining records of hhv of fuel burned and of the cumulative annual fuel use (scf/yr). Records shall be kept for a period of five years and shall be made readily available for District inspection upon request. [District Rule 2201] Federally Enforceable Through Title V Permit
29. For each heater, the permittee shall monitor and record the stack concentration of NOx, CO, and O2 at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. In-stack O2 monitors are acceptable for O2 measurement. 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, 4320, and 4351] Federally Enforceable Through Title V Permit
30. If either the NOx or CO concentrations corrected to 3% O2, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4305, 4306, 4320, and 4351] Federally Enforceable Through Title V Permit
31. The portable analyzer shall be calibrated prior to each use with a two-point calibration method (zero and span). Calibration shall be performed with certified calibration gases. [District Rule 2520] Federally Enforceable Through Title V Permit
32. All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 4305, 4306, 4320, and 4351] Federally Enforceable Through Title V Permit
33. Operator shall perform annual source testing for NOx (ppmv) according to EPA Method 7E (or ARB Method 100), stack gas oxygen by EPA Method 3 or 3A (or ARB Method 100), NOx emission rate (heat input basis) by EPA Method 19, CO by EPA method 10 or ARB method 100, stack gas velocities by EPA Method 2, and stack gas moisture content by EPA Method 4. [District Rules 4305, 4306 and 4351] Federally Enforceable Through Title V Permit

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34. Nitrogen oxide (NO<sub>x</sub>) emission concentrations in ppmv shall be referenced at dry stack gas conditions, and shall be calculated to 3.00 percent by volume stack gas oxygen and averaged over 60 minutes, and lb/MMBtu rates shall be calculated as lb NO<sub>2</sub>/MMBtu of heat input (hhv). [District Rules 4305, 4306, and 4351] Federally Enforceable Through Title V Permit
35. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306, and 4351] Federally Enforceable Through Title V Permit
36. All emissions measurements shall be made with each process heater unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4320. [District Rules 4305, 4306, 4320, and 4351] Federally Enforceable Through Title V Permit
37. Exhaust stack shall be equipped with adequate provisions facilitating the collection of gas samples consistent with EPA Test Methods. [District Rule 1081] Federally Enforceable Through Title V Permit
38. Source testing to measure NO<sub>x</sub> and CO emissions from the Born heater and Tulsa heater shall be conducted within 60 days of implementation of this ATC. [District Rules 2201, 4305, 4306, and 4351] Federally Enforceable Through Title V Permit
39. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306, and 4351] Federally Enforceable Through Title V Permit
40. Source testing to measure NO<sub>x</sub> and CO emissions from each process heater shall be conducted at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306, 4320, and 4351] Federally Enforceable Through Title V Permit
41. Compliance demonstration (source testing) shall be by District witnessed, or authorized, sample collection by ARB certified testing laboratory. [District Rule 1081] Federally Enforceable Through Title V Permit
42. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified 30 days prior to any compliance source test, and a source test plan must be submitted for approval 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
43. 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
44. Annual test results submitted to the District from unit(s) representing a group of units may be used to demonstrate compliance with NO<sub>x</sub> limits of this permit for that group, provided the selection of the representative unit(s) is approved by the APCO prior to testing. Should any of the representative units exceed the required NO<sub>x</sub> emission limits of this permit, each of the units in the group shall demonstrate compliance by emissions testing within 90 days of the failed test. (This requirement shall not supersede a more stringent NSR or PSD permit testing requirement.) [District Rules 4305, 4306, and 4351] Federally Enforceable Through Title V Permit
45. The following conditions must be met for representative unit(s) to be used to demonstrate compliance for NO<sub>x</sub> limits for a group of units: 1) all units are initially source tested and emissions from each unit in group are less than 90% of the permitted value and vary 25% or less from the average of all runs, 2) all units in group are similar in terms of rated heat input (rating not to exceed 100 MMBtu/hr), make and series, operation conditions, and control method, and 3) the group is owned by a single owner and located at a single stationary source. [District Rules 2520, 4305, and 4306] Federally Enforceable Through Title V Permit
46. All units in a group for which representative units are source tested to demonstrate compliance for NO<sub>x</sub> limits of this permit shall have received the same maintenance and tune-up procedures as the representative unit(s). These tune-up procedures shall be completed according to District Rule 4304 (Adopted October 19, 1995) and tune-up test results shall show comparable results for each unit in the group. Records shall be maintained for the each unit of the group including all preventative and corrective maintenance work done. [District Rules 2520, 4305, and 4306] Federally Enforceable Through Title V Permit

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47. All units in a group for which representative units are source tested to demonstrate compliance for NO<sub>x</sub> limits of this permit shall be fired on the same fuel type during the entire compliance period. If a unit switches for any time to an alternate fuel type (e.g. from natural gas to refinery gas) then that unit shall not be considered part of the group and shall be required to undergo a source test for all fuel types used, within one year of the switch. [District Rules 2520, 4305, and 4306] Federally Enforceable Through Title V Permit
48. The number of representative units source tested to demonstrate compliance for NO<sub>x</sub> limits shall be at least 30% of the total number of units in the group. The units included in the 30% shall be rotated, so that in 3 years, all units in the entire group will have been tested at least once. [District Rule 2520] Federally Enforceable Through Title V Permit
49. Copies of all purchased fuel invoices, gas purchase contract, supplier certifications, and test results to determine compliance with the conditions of this permit shall be maintained. Operator shall record daily amount and type(s) of fuel(s) combusted and all dates on which unit is fired on any noncertified fuel. [District Rules 2520, 4306, and 4320] Federally Enforceable Through Title V Permit
50. Draeger tubes shall be used as an alternative method for measuring fuel gas H<sub>2</sub>S during scheduled maintenance or unscheduled interruptions of CEMs. Draeger tube use shall be limited to no more than 96 continuous hours and fuel gas H<sub>2</sub>S shall be checked a minimum of every two hours during scheduled maintenance or unscheduled interruptions of CEMs. Alternate method of measuring fuel gas H<sub>2</sub>S shall occur no more than 192 hours in any calendar year. [District Rule 4320 and 40 CFR 60.13(i)] Federally Enforceable Through Title V Permit
51. Operator shall maintain all records of the reason for alternative monitoring and required fuel gas H<sub>2</sub>S monitoring data and support information for inspection at any time for a period of five years. [District Rules 2520 and 4320] Federally Enforceable Through Title V Permit
52. 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, 4320, and 4351] Federally Enforceable Through Title V Permit
53. The permittee shall maintain records of the date, total duration of startup time (hours per day), total duration of shutdown time (hours per day), total duration of startup time per year (hours per year), and total duration of shutdown time per year (hours per year). The annual records shall be updated at least on a monthly basis. [District Rules 2201, 4306, and 4320] Federally Enforceable Through Title V Permit
54. Permittee shall maintain records of annual heat input (MMBtu) for this unit on a calendar year basis. [District Rules 1070 and Rule 4320] Federally Enforceable Through Title V Permit