



DEC 14 2011

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 / Certificate of Conformity (Minor Mod)  
Project # 1113297**

Dear Mr. Rios:

The Air Pollution Control Officer has issued Authorities to Construct (ATC's S-36-1-16, 41-18 and 51-19) with Certificates of Conformity to San Joaquin Refining Company. San Joaquin Refining has proposed to install SCR on three boilers and process heaters to reduce NOx emissions for Rule 4320 compliance.

Enclosed are copies of the Authorities to Construct. The application and proposal were sent to US EPA Region IX on 12/07/11. No comments were received following the District's preliminary decision on this project.

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

Enclosures  
SAR

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



DEC 14 2011

Mr. David Campbell  
San Joaquin Refining Company  
PO Box 5576  
Bakersfield, CA 93388

**Re: Final - Authority to Construct / Certificate of Conformity (Minor Mod)  
Project # 1113297**

Dear Mr. Campbell:

The Air Pollution Control Officer has issued Authorities to Construct (ATC's S-36-1-16, 41-18 and 51-19) with Certificates of Conformity to San Joaquin Refining Company. San Joaquin Refining has proposed to install SCR on three boilers and process heaters to reduce NOx emissions for Rule 4320 compliance.

Enclosed are the Authorities to Construct and invoice. The application and proposal were sent to US EPA Region IX on 12/07/11. No comments were received following the District's preliminary decision on this project.

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

Enclosures  
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## AUTHORITY TO CONSTRUCT

**PERMIT NO:** S-36-1-16

**ISSUANCE DATE:** 12/12/2011

**LEGAL OWNER OR OPERATOR:** SAN JOAQUIN REFINING COMPANY

**MAILING ADDRESS:** PO BOX 5576  
BAKERSFIELD, CA 93388

**LOCATION:** STANDARD AND SHELL ST  
BAKERSFIELD, CA 93308

**SECTION:** NE24 **TOWNSHIP:** 29S **RANGE:** 27E

**EQUIPMENT DESCRIPTION:**

MODIFICATION OF 79.2 MMBTU/HR ATMOSPHERIC/VACUUM CRUDE UNIT #4 WITH PREFLASH COLUMN, FRACTIONATOR, VACUUM DISTILLATION COLUMN WITH MECHANICAL VACUUM PRODUCING SYSTEM, 27 MMBTU/HR GAS/OIL/WASTE GAS FIRED NATURAL DRAFT VACUUM HEATER #VH-4 WITH THREE ZEECO CLSF 11 LOW NOX BURNERS AND 52.2 MMBTU/HR GAS/OIL FIRED NATURAL DRAFT HEATER #4 WITH ZEECO MODEL CLSF LOW NOX BURNERS: INSTALL SCR AND 0.9 MMBTU/HR REHEAT BURNER ON VACUUM HEATER #VH-4 FOR RULE 4320 COMPLIANCE AND REMOVE OIL-FIRING PROVISIONS FROM HEATER #VH-4

## 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. Pursuant to Rule 4320, beginning in 2010 the operator shall pay an annual emission fee to the District for NOx emissions from the 52.2 MMBTU/hr Crude Heater #4 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
4. The emission control systems shall be in operation and emissions shall be minimized insofar as technologically feasible during startup and shutdown. [District Rule 4305] 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-36-1-16 : Dec 12 2011 1 23PM - ROEDERS Joint Inspection NOT Required

5. The duration of each startup and shutdown period for the 52.2 MMBtu/hr crude heater #4 shall not exceed 8.0 hours and 2.0 hours respectively. Short term NOx and CO emissions limits (lb/MM Btu or ppmv @ 3% O2) shall not apply during periods of startup and and shutdown. [District Rules 2201, 4305, 4360 and 4351] Federally Enforceable Through Title V Permit
6. The duration of each startup and shutdown period for the 27.0 MMBtu/hr vacuum heater VH-4 shall not exceed 9.0 hours and 2.0 hours respectively. Short term NOx and CO emissions limits (lb/MM Btu or ppmv @ 3% O2) shall not apply during periods of startup and and shutdown. [District Rules 2201, 4305, 4360 and 4351] Federally Enforceable Through Title V Permit
7. All equipment shall be constructed, maintained, and operated according to the specifications and plans contained in the permit application except as otherwise specified herein. [District Rule 2201] Federally Enforceable Through Title V Permit
8. Vacuum Heater #VH-4 shall be fired on natural gas only. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
9. Natural gas combusted in crude heater #4 and the vacuum heater #VH-4 shall be of PUC quality. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
10. Vacuum Heater #VH-4 shall be equipped with a SCR system and a 0.9 MMBtu/hr reheat burner. The heater shall not be operated unless the SCR system is operating. [District Rule 2201] Federally Enforceable Through Title V Permit
11. The exhaust stack from the SCR unit shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]
12. Ammonia slip from the SCR unit shall not exceed 10 ppmv @ 3% O2. [District Rule 4102]
13. Monthly records of the total amount of ammonia used by the SCR system shall be maintained. [District Rules 1070 and 2520] Federally Enforceable Through Title V Permit
14. The burning of fuel oil in heater #4 is limited to 168 cumulative hours in a calendar year plus 48 hour per calendar year for equipment testing of operation during natural gas curtailments. [District Rules 4305, 4306 and 4351] Federally Enforceable Through Title V Permit
15. Sulfur content of liquid back-up fuel for the 52.2 MMBtu/hr heater #4 shall not exceed 15 ppmw. [District Rule 4320] Federally Enforceable Through Title V Permit
16. Vacuum system exhaust gas emissions shall be controlled by incineration in the 27 MMBtu/hr vacuum heater (VH-4). [District Rule 4453 and Kern County Rule 414.2] Federally Enforceable Through Title V Permit
17. Heat exchangers utilizing cooling water shall be operated and maintained as to prevent VOC emissions from cooling towers. [District Rule 2201] Federally Enforceable Through Title V Permit
18. Gas firing emissions from 52.2 MMBtu/hr crude heater #4 shall not exceed any of the following: PM10: 0.004 lb/MMBtu; VOC: 0.01 lb/MMBtu; NOx (as NO2) - 30 ppmv @ 3% O2 or 0.036 lb/MMBtu; or CO - 400 ppmv @ 3% O2. [District Rules 2201, 2520, 9.4.2, 4305, 4306 and 4351] Federally Enforceable Through Title V Permit
19. Oil-fired emissions for the 52.2 MMBtu/hr Crude Heater #4 shall not exceed any of the following limits: 0.215 lb-NOx/MMBtu, 0.0015 lb-SOx/MMBtu, 0.083 lb-PM10/MMBtu, 400 ppmv CO @ 3% O2 (0.312 lb-CO/MMBtu) or 0.008 lb-VOC/MMBtu. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
20. Emissions from 27 MMBtu/hr vacuum heater shall not exceed any of the following limits: 0.011 lb-NOx/MMBtu (9 ppmv @ 3% O2), 0.00285 lb-SOx/MMBtu, 0.004 lb-PM10/MMBtu, 0.296 lb-CO/MMBtu (400 ppmv @ 3% O2), or 0.0075 lb-VOC/MMBtu (17.8 ppmv @ 3% O2). [District Rules 2201, 2520, 9.4.2, 4305, 4306 and 4351] Federally Enforceable Through Title V Permit
21. Source testing to measure NOx and CO emissions from the 27 MMBtu/hr Vacuum Heater #VH-4 shall be conducted within 60 days of initial start-up. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

22. Source testing to measure NO<sub>x</sub> and CO emissions from this unit while fired on natural gas shall be conducted at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
23. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
24. The 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
25. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
26. NO<sub>x</sub> 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
27. 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
28. Stack gas oxygen (O<sub>2</sub>) 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
29. Fuel sulfur content shall be determined using EPA Method 11 or Method 15, ASTM D 2880, (ASTM) D 6920-03 or ASTM D 5453-99. [District Rule 4320] Federally Enforceable Through Title V Permit
30. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
31. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4306. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
32. The permittee shall monitor and record the stack concentration of NH<sub>3</sub> from the SCR unit at least once during each month. This monitoring shall be conducted utilizing Draeger tubes or a District-approved equivalent method at the time NO<sub>x</sub>, CO and O<sub>2</sub> readings are taken. 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 one (1) day of restarting the unit unless monitoring has been performed within the last month. [District Rules 2201 and 4102] Federally Enforceable Through Title V Permit
33. 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
34. In stack oxygen monitors are acceptable for O<sub>2</sub> measurement. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

35. 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 performing the notification and testing required by this condition. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
36. All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
37. 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
38. The portable analyzer shall be calibrated daily when in use with a two-point calibration method (zero and span). Calibration shall be performed with certified gases. [District Rule 2520] Federally Enforceable Through Title V Permit
39. Permittee shall maintain records of fuel hhv and cumulative annual fuel use for each heater for a period of at least five years and shall make such records readily available for District inspection upon request. [District Rules 4320 and 4351] Federally Enforceable Through Title V Permit
40. All required source testing shall conform to the compliance testing procedures described in District Rule 1081. [District Rule 1081] Federally Enforceable Through Title V Permit
41. Copies of all fuel invoices, gas purchase contracts, supplier certifications, and test results to determine compliance with the conditions of this permit shall be maintained. The operator shall record daily amount and type(s) of fuel(s) combusted and all dates on which unit is fired on any noncertified fuel. [District Rule 2520] Federally Enforceable Through Title V Permit
42. The operator shall maintain all records of required monitoring data and support information for inspection at any time for a period of five years. [District Rule 2520] Federally Enforceable Through Title V Permit
43. Particulate matter emissions shall not exceed 0.1 grain/dscf, 0.1 grain/dscf calculated to 12% CO<sub>2</sub>, nor 10 lb/hr. [District Rules 4201, 3.1 and 4301, 5.1 and 5.2.3] Federally Enforceable Through Title V Permit
44. Source testing shall be performed using EPA Method 5 while firing on residual oil (including crude or topped crude) to demonstrate compliance with PM emission limits. Source testing shall be performed within 90 days of firing on residual oil unless such testing has been performed within the 12 month period prior to firing on said oil and the test results showed compliance with PM emission limits of this permit. [District Rule 2520] Federally Enforceable Through Title V Permit
45. Emissions of sulfur compounds from each heater shall not exceed 200 lb per hour, calculated as SO<sub>2</sub>. [District Rule 4301] Federally Enforceable Through Title V Permit
46. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, each fuel source shall be tested weekly for sulfur content and higher heating value. If compliance with the fuel sulfur content limit and sulfur emission limits has been demonstrated for 8 consecutive weeks for a fuel source, then the fuel testing frequency shall be semi-annually. If a semi-annual fuel content source test fails to show compliance, weekly testing shall resume. [District Rule 2520] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

47. When complying with SO<sub>x</sub> emission limits by testing of stack emissions, testing shall be performed not less than once every 12 months using EPA Method 6B; or Method 8; or, for units using gaseous fuel scrubbed for sulfur pre-combustion, a grab sample analysis by GC-FPD/TCD performed in the laboratory and EPA Method 19 to calculated emissions. Gaseous fuel fired units demonstrating compliance on two consecutive annual source tests shall be tested not less than once every thirty-six months; however, annual source testing shall resume if any test fails to show compliance. [District Rule 2520] Federally Enforceable Through Title V Permit
48. If the unit is fired on noncertified gaseous fuel and compliance with SO<sub>x</sub> emission limits is achieved through fuel sulfur content limitations, then the sulfur content of the gaseous fuel being fired in the unit shall be determined using ASTM D 1072, D 3031, D 4084, D 3246 or grab sample analysis by GC-FPD/TCD performed in the laboratory. [District Rule 2520] Federally Enforceable Through Title V Permit
49. If the unit is fired on noncertified liquid fuel and compliance with SO<sub>x</sub> emission limits is achieved through fuel sulfur content limitations, then the sulfur content of the liquid fuel being fired in the unit shall be determined using ASTM D 2880, (ASTM) D 6920-03 or ASTM D 5453-99. [District Rule 2520] Federally Enforceable Through Title V Permit
50. If fuel analysis is used to demonstrate compliance with the conditions of this permit, the fuel higher heating value for each fuel shall be certified by third party fuel supplier or determined by: ASTM D 240 or D 2382 for liquid hydrocarbon fuels; ASTM D 1826 or D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District Rules 2520, 4305, 4306 and 4351] Federally Enforceable Through Title V Permit
51. 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 Rule 4801] Federally Enforceable Through Title V Permit
52. A component shall be considered leaking if one or more of the conditions specified in Sections 5.1.4.1 through 5.1.4.4 of Rule 4455 exist at the facility. For this permit unit, except for pumps and compressors, a minor gas leak shall be defined for any component listed in Rule 4455 Section 3.22 Table 1 in either liquid or gas/vapor service as a reading in excess of 100 ppmv above background up to and including a reading of 10,000 ppmv above background. For pumps, compressors and other component types not specifically listed in Rule 4455 Section 3.22 Table 1 in either liquid or gas/vapor service, a minor gas leak shall be defined as a reading in excess of 500 ppmv above background up to and including a reading of 10,000 ppmv above background. Readings shall be taken as methane using a portable hydrocarbon detection instrument and shall be made in accordance with the methods specified in Section 6.4.1 of Rule 4455. [District Rules 2201 and 4455, 5.1.4] Federally Enforceable Through Title V Permit
53. The operator shall not use any component that leaks in excess of the allowable leak standards of Rule 4455, or is found to be in violation of the provisions specified in Section 5.1.3. A component identified as leaking in excess of an allowable leak standard may be used provided it has been identified with a tag for repair, has been repaired, or is awaiting re-inspection after repair, within the applicable time period specified within the rule. [District Rule Rule 4455, 5.1.1] Federally Enforceable Through Title V Permit
54. 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 and with minimal spillage of material and VOC emissions to the atmosphere. [District Rule 4455, 5.1.2] Federally Enforceable Through Title V Permit
55. The operator shall be in violation of Rule 4455 if any District inspection demonstrates that one or more of the conditions in Sections 5.1.4 exist at the facility. [District Rule 4455, 5.1.3.1] Federally Enforceable Through Title V Permit
56. Except for annual operator inspection described in Section 5.1.3.2.3, any operator inspection that demonstrates that one or more of the conditions in Section 5.1.4 exist at the facility shall not constitute a violation of Rule 4455 if the leaking components are repaired as soon as practicable but not later than the time frame specified in Rule 4455. Such components shall not be counted towards determination of compliance with the provisions of Section 5.1.4. [District Rule 4455, 5.1.3.2.1] Federally Enforceable Through Title V Permit
57. Leaking components detected during operator inspection pursuant Section 5.1.3.2.1 that are not repaired, replaced, or removed from operation as soon as practicable but not later than the time frame specified in Rule 4455 shall be counted toward determination of compliance with the provisions of Section 5.1.4. [District Rule 4455, 5.1.3.2.2] Federally Enforceable Through Title V Permit

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58. Any operator inspection conducted annually for a component type (including operator annual inspections pursuant to Section 5.2.5, 5.2.6, 5.2.7, or 5.2.8) that demonstrates one or more of the conditions in Section 5.1.4 exist at the facility shall constitute a violation of Rule 4455 regardless of whether or not the leaking components are repaired, replaced, or removed from operation within the allowable repair time frame specified in Rule 4455. [District Rule 4455, 5.1.3.2.3] Federally Enforceable Through Title V Permit
59. The operator shall audio-visually inspect for leaks all accessible operating pumps, compressors and Pressure Relief Devices (PRDs) in service at least once every 24 hours, except when operators do not report to the facility for that given 24 hours. Any identified leak that cannot be immediately repaired shall be reinspected within 24 hours using a portable analyzer. If a leak is found, it shall be repaired as soon as practical but not later than the time frame specified in Table 3. [District Rule 4455, 5.2.1 & 5.2.2] Federally Enforceable Through Title V Permit
60. The operator shall inspect all components at least once every calendar quarter, except for inaccessible components, unsafe-to-monitor components and pipes. Inaccessible components, unsafe-to-monitor components and pipes shall be inspected in accordance with the requirements set forth in Sections 5.2.5, 5.2.6, and 5.2.7. New, replaced, or repaired fittings, flanges and threaded connections shall be inspected immediately after being placed into service. Components shall be inspected using EPA Method 21. [District Rule 4455, 5.2.3, 5.2.4, 5.2.5, 5.2.6 & 5.2.7] Federally Enforceable Through Title V Permit
61. The operator may apply for a written approval from the APCO to change the inspection frequency from quarterly to annually for a component type, provided the operator meets all the criteria specified in Sections 5.2.8.1 through 5.2.8.3. This approval shall apply to accessible component types, specifically designated by the APCO, except pumps, compressors, and PRDs which shall continue to be inspected on a quarterly basis. [District Rule 4455, 5.2.8] Federally Enforceable Through Title V Permit
62. An annual inspection frequency approved by the APCO shall revert to quarterly inspection frequency for a component type if either the operator inspection or District inspection demonstrates that a violation of the provisions of Sections 5.1, 5.2 and 5.3 of the rule exists for that component type, or the APCO issued a Notice of Violation for violating any of the provisions of Rule 4455 during the annual inspection period for that component type. When the inspection frequency changes from annual to quarterly inspections, the operator shall notify the APCO in writing within five (5) calendar days after changing the inspection frequency, giving the reason(s) and date of change to quarterly inspection frequency. [District Rule 4455, 5.2.9 & 5.2.10] Federally Enforceable Through Title V Permit
63. The operator shall initially inspect a process PRD that releases to the atmosphere as soon as practicable but not later than 24 hours after the time of the release. To insure that the process PRD is operating properly, and is leak-free, the operator shall re-inspect the process PRD not earlier than 24 hours after the initial inspection but not later than 15 calendar days after the date of the release using EPA Method 21. If the process PRD is found to be leaking at either inspection, the PRD leak shall be treated as if the leak was found during quarterly operator inspections. [District Rule 4455, 5.2.11] Federally Enforceable Through Title V Permit
64. Except for process PRD, a component shall be inspected within 15 calendar days after repairing the leak or replacing the component using EPA Method 21. [District Rule 4455, 5.2.12] Federally Enforceable Through Title V Permit
65. Upon detection of a leaking component, the operator shall affix to that component a weatherproof readily visible tag that contains the information specified in Section 5.3.3. The tag shall remain affixed to the component until the leaking component has been repaired or replaced; has been re-inspected using EPA Method 21; and is found to be in compliance with the requirements of Rule 4455. [District Rule 4455, 5.3.1 5.3.2 and 5.3.3] Federally Enforceable Through Title V Permit
66. An operator shall minimize all component leaks immediately to the extent possible, but not later than one (1) hour after detection of leaks in order to stop or reduce leakage to the atmosphere. [District Rule 4455, 5.3.4] Federally Enforceable Through Title V Permit
67. If the leak has been minimized but the leak still exceeds the applicable leak standards of Rule 4455, an operator shall repair or replace the leaking component, vent the leaking component to a closed vent system, or remove the leaking component from operation as soon as practicable but not later than the time period specified in Table 3. For each calendar quarter, the operator may be allowed to extend the repair period as specified in Table 3, for a total number of leaking components, not to exceed 0.05 percent of the number of components inspected, by type, rounded upward to the nearest integer where required. [District Rule 4455, 5.3.5] Federally Enforceable Through Title V Permit

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68. If the leaking component is an essential component or a critical component and which cannot be immediately shut down for repairs, the operator shall minimize the leak within one hour after detection of the leak. If the leak has been minimized, but the leak still exceeds any of the applicable leak standards of Rule 4455, the essential component or critical component shall be repaired or replaced 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 4455 5.3.6] Federally Enforceable Through Title V Permit
69. For any component that has incurred five repair actions for major gas leaks or major liquid leaks, or any combination of major gas leaks and major liquid leaks within a continuous 12-month period, the operator shall comply with at least one of the requirements specified in Sections 5.3.7.1, 5.3.7.2, 5.3.7.3, or 5.3.7.4 by the applicable deadlines specified in Sections 5.3.7.5 and 5.3.7.6. If the original leaking component is replaced with a new like-in-kind component before incurring five repair actions for major leaks within 12-consecutive months, the repair count shall start over for the new component. An entire compressor or pump need not be replaced provided the compressor part(s) or pump part(s) that have incurred five repair actions as described in Section 5.3.7 are brought into compliance with at least one of the requirements of Sections 5.3.7.1 through 5.3.7.6. [District Rule 4455, 5.3.7] Federally Enforceable Through Title V Permit
70. The operator shall monitor process PRD by using electronic process control instrumentation that allows for real time continuous parameter monitoring or by using telltale indicators for the process PRD where parameter monitoring is not feasible. [District Rule 4455, 5.4.1] Federally Enforceable Through Title V Permit
71. All major components and critical components shall be physically identified clearly and visibly for inspection, repair, and recordkeeping purposes. The physical identification shall consist of labels, tags, manufacturer's nameplate identifier, serial number, or model number, or other system approved by the APCO that enables an operator or District personnel to locate each individual component. The operator shall replace tags or labels that become missing or unreadable as soon as practicable but not later than 24 hours after discovery. The operator shall comply with the requirements of Sections 6.1.4 if there is any change in the description of major components or critical components. [District Rule 4455, 5.5.1 & 5.5.2] Federally Enforceable Through Title V Permit
72. The operator shall keep a copy of the operator management plan at the facility and make it available to the APCO, ARB and US EPA upon request. By January 30 of each year, the operator shall submit to the APCO for approval, in writing, an annual report indicating any changes to the existing, approved operator management plan. [District Rule 4455, 6.1.2 & 6.1.4] Federally Enforceable Through Title V Permit
73. The operator shall maintain an inspection log containing, at a minimum, 1) total number of components inspected, and total number and percentage of leaking components found by component types, 2) location, type, name or description of each leaking component, and description of any unit where the leaking component is found, 3) date of leak detection and method of leak detection, 4) for gaseous leaks, record the leak concentration in ppmv, and for liquid leaks record whether the leak is a major liquid leak or a minor liquid leak, 5) date of repair, replacement, or removal from operation of leaking components, 6) identification and location of essential component and critical components found leaking that cannot be repaired until the next process unit turnaround or not later one year after leak detection, whichever comes earlier, 7) methods used to minimize the leak from essential components and critical components that cannot be repaired until the next process unit turnaround or not later one year after leak detection, whichever comes earlier, 8) after the component is repaired or is replaced, the date of reinspection and the leak concentration in ppmv, 9) inspector's name, business mailing address, and business telephone number, and 10) the facility operator responsible for the inspection and repair program shall sign and date the inspection log certifying the accuracy of the information recorded in the log. [District Rule 4455, 6.2.1] Federally Enforceable Through Title V Permit
74. 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, analyzer 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. [District Rule 4455, 6.2.3] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

75. The operator shall notify the APCO, by telephone or other methods approved by the APCO, of any process PRD release described in Sections 5.4.4 and 5.4.5, and any release in excess of the reportable quantity limits as stipulated in 40 CFR, Part 117, Part 302 and Part 355, including any release in excess of 100 pounds of VOC, within one hour of such occurrence or within one hour of the time said person knew or reasonably should have known of its occurrence. [District Rule 4455, 6.3.1] Federally Enforceable Through Title V Permit
76. The operator shall submit a written report to the APCO within thirty (30) calendar days following a PRD release subject to 6.3.1. The written report shall include 1) process PRD type, size, and location, 2) date, time and duration of the process PRD release, 3) types of VOC released and individual amounts, in pounds, including supporting calculations, 4) cause of the process PRD release, and 5) corrective actions taken to prevent a subsequent process PRD release. [District Rule 4455 6.3.2] Federally Enforceable Through Title V Permit
77. Copies of all records shall be retained for a minimum of five (5) years after the date of an entry. Such records shall be made available to the APCO, ARB, or US EPA upon request. [District Rule 4455, 6.2.2, 6.2.3 & 6.2.4] Federally Enforceable Through Title V Permit
78. Measurements of gaseous leak concentrations shall be conducted according to US 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 US 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. [District Rule 4455, 6.4.1] Federally Enforceable Through Title V Permit
79. The VOC content shall be determined using American Society of Testing and Materials (ASTM) D 1945 for gases and South Coast Air Quality Management District (SCAQMD) Method 304-91 for liquids. [District Rule 4455, 6.4.2] Federally Enforceable Through Title V Permit
80. The percent by volume liquid evaporated at 150 C shall be determined using ASTM D 86. [District Rule 4455, 6.4.3] Federally Enforceable Through Title V Permit
81. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following requirements of SJVUAPCD Rules 4201 (Amended December 17, 1992), and 4301 (Amended December 17, 1992). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
82. Compliance with permit conditions in the Title V permit shall be deemed compliance with the requirements of District Rule 4801, section 3.1 (Amended December 17, 1992). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit



## AUTHORITY TO CONSTRUCT

**PERMIT NO:** S-36-41-18

**ISSUANCE DATE:** 12/12/2011

**LEGAL OWNER OR OPERATOR:** SAN JOAQUIN REFINING COMPANY

**MAILING ADDRESS:** PO BOX 5576  
BAKERSFIELD, CA 93388

**LOCATION:** STANDARD AND SHELL ST  
BAKERSFIELD, CA 93308

**SECTION:** 23 **TOWNSHIP:** 29S **RANGE:** 27E

**EQUIPMENT DESCRIPTION:**

MODIFICATION OF 31.25 MMBTU/HR FORCED DRAFT WICKES BOILER WITH NORTH AMERICAN MODEL 6131-FC2 NATURAL GAS/OIL-FIRED LOW NOX BURNER WITH FGR: INSTALL SCR FOR RULE 4320 COMPLIANCE AND REMOVE OIL-FIRING PROVISIONS

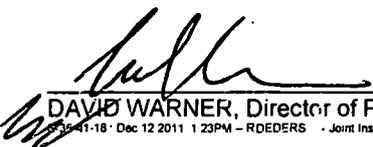
## CONDITIONS

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 emission control systems shall be in operation and emissions shall be minimized insofar as technologically feasible during startup and shutdown. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
4. The duration of each startup and shutdown period for the 31.25 MMBtu/hr heater shall not exceed 4.0 hours and 2.0 hours respectively. Emission limits of Rule 4305 and 4306 are waived during periods of startup and shutdown. [District Rule 4305, Section 5.5.6 and 4306 Section 5.3] Federally Enforceable Through Title V Permit
5. The boiler shall be equipped with a SCR system. The boiler shall not be operated unless the SCR system is operating [District Rule 2201] Federally Enforceable Through Title V Permit
6. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]

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

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7. Ammonia slip from the SCR unit shall not exceed 10 ppmv @ 3% O<sub>2</sub>. [District Rule 4102]
8. Monthly records of the total amount of ammonia used by the SCR system shall be maintained. [District Rules 1070 and 2520, 9.4.1] Federally Enforceable Through Title V Permit.
9. Emissions from the boiler shall not exceed any of the following limits: 0.011 lb-NO<sub>x</sub>/MMBtu (9 ppmv @ 3% O<sub>2</sub>), 0.00285 lb-SO<sub>x</sub>/MMBtu, 0.0076 lb-PM<sub>10</sub>/MMBtu, 0.074 lb-CO/MMBtu (100 ppmv @ 3% O<sub>2</sub>), 0.0055 lb-VOC/MMBtu (13 ppmv @ 3% O<sub>2</sub>). [District Rules 2201, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
10. Boiler may be fired on Fruitvale oilfield produced gas or purchased natural gas. Natural gas and lease produced gas sulfur content shall not exceed 1.0 gr sulfur compounds/100 scf. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
11. Source testing to measure NO<sub>x</sub> and CO emissions from the 31.25 MMBtu/hr Wickes Boiler shall be conducted within 60 days of initial startup. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
12. Source testing to measure NO<sub>x</sub> and CO emissions from this unit while fired on natural gas shall be conducted at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
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. 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
16. NO<sub>x</sub> 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
17. 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
18. Stack gas oxygen (O<sub>2</sub>) 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
19. Fuel sulfur content shall be determined using EPA Method 11 or Method 15. [District Rule 4320] Federally Enforceable Through Title V Permit
20. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
21. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4306. [District Rules 4305, 4306 and 4320] 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

CONDITIONS CONTINUE ON NEXT PAGE

23. The permittee shall monitor and record the stack concentration of NH<sub>3</sub> from the SCR unit at least once during each month. This monitoring shall be conducted utilizing Draeger tubes or a District-approved equivalent method at the time NO<sub>x</sub>, CO and O<sub>2</sub> readings are taken. 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 one (1) day of restarting the unit unless monitoring has been performed within the last month. [District Rules 2201 and 4102] Federally Enforceable Through Title V Permit
24. In stack oxygen monitors are acceptable for O<sub>2</sub> measurement. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
25. 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 performing the notification and testing required by this condition. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
26. All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
27. The permittee shall maintain records of: (1) the date and time of 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
28. The following test methods shall be used: NO<sub>x</sub> (ppmv) - EPA Method 7E or ARB Method 100, NO<sub>x</sub> (lb/MMBtu) - EPA Method 19, CO (ppmv) - EPA Method 10 or ARB Method 100, stack gas oxygen - EPA Method 3 or 3A or ARB Method 100, fuel gas sulfur content- ASTM D3246 , fuel oil sulfur content - ASTM D4294 , PAHs - ARB method 429 , and chromium VI compounds - CARB method 425. [District Rules 1081, 4305, 4306, and 4351] Federally Enforceable Through Title V Permit
29. Permittee shall maintain records of total quantity of liquid fuel combusted in S-36-2, S-36-4, and S-36-41 on a rolling twelve month basis for a period of five years and shall make such records readily available for District inspection upon request. [District Rule 1070] Federally Enforceable Through Title V Permit
30. Permittee shall maintain records of fuel oil and lease produced gas sulfur content, fuels hhw and cumulative annual fuels use for a period of five years and shall make such records readily available for District inspection upon request. [District Rule 4351] Federally Enforceable Through Title V Permit
31. All required source testing shall conform to the compliance testing procedures described in District Rule 1081(Last Amended December 19,1993). [District Rule 1081] Federally Enforceable Through Title V Permit
32. Copies of all fuel invoices, gas purchase contracts, supplier certifications, and test results to determine compliance with the conditions of this permit shall be maintained. The operator shall record daily amount and type(s) of fuel(s) combusted and all dates on which unit is fired on any noncertified fuel. [District Rule 2520] Federally Enforceable Through Title V Permit
33. Operator shall maintain all records for at least five years and conform to the recordkeeping requirements described in District Rule 2520. [District Rule 2520] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

34. Particulate matter emissions shall not exceed 0.1 grain/dscf, 0.1 grain/dscf calculated to 12% CO<sub>2</sub>, nor 10 lb/hr. [District Rules 4201, 3.1 and 4301, 5.1 and 5.2.3] Federally Enforceable Through Title V Permit
35. Emissions of sulfur compounds from this unit shall not exceed 200 lb per hour, calculated as SO<sub>2</sub>. [District Rule 4301, 5.2.1] Federally Enforceable Through Title V Permit
36. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, each fuel source shall be tested weekly for sulfur content and higher heating value. If compliance with the fuel sulfur content limit and sulfur emission limits has been demonstrated for 8 consecutive weeks for a fuel source, then the fuel testing frequency shall be semi-annually. If a semi-annual fuel content source test fails to show compliance, weekly testing shall resume. [District Rule 2520] Federally Enforceable Through Title V Permit
37. When complying with SO<sub>x</sub> emission limits by testing of stack emissions, testing shall be performed not less than once every 12 months using EPA Method 6B; or Method 8; or, for units using gaseous fuel scrubbed for sulfur pre-combustion, a grab sample analysis by GC-FPD/TCD performed in the laboratory and EPA Method 19 to calculated emissions. Gaseous fuel fired units demonstrating compliance on two consecutive annual source tests shall be tested not less than once every thirty-six months; however, annual source testing shall resume if any test fails to show compliance. [District Rule 2520] Federally Enforceable Through Title V Permit
38. If the unit is fired on noncertified gaseous fuel and compliance with SO<sub>x</sub> emission limits is achieved through fuel sulfur content limitations, then the sulfur content of the gaseous fuel being fired in the unit shall be determined using ASTM D 1072, D 3031, D 4084, D 3246 or grab sample analysis by GC-FPD/TCD performed in the laboratory. [District Rule 2520] Federally Enforceable Through Title V Permit
39. If fuel analysis is used to demonstrate compliance with the conditions of this permit, the fuel higher heating value for each fuel shall be certified by third party fuel supplier or determined by ASTM D 1826 or D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District Rule 4305, 4306, and 4351] Federally Enforceable Through Title V Permit
40. 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 Rule 4801] Federally Enforceable Through Title V Permit
41. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following requirements of SJVUAPCD Rules 4201 (Amended December 17, 1992), 4301 (Amended December 17, 1992), and 4801, section 3.1 (Amended December 17, 1992). A permit shield is granted from these requirements. [District Rule 2520] Federally Enforceable Through Title V Permit



## AUTHORITY TO CONSTRUCT

**PERMIT NO:** S-36-51-19

**ISSUANCE DATE:** 12/12/2011

**LEGAL OWNER OR OPERATOR:** SAN JOAQUIN REFINING COMPANY

**MAILING ADDRESS:** PO BOX 5576  
BAKERSFIELD, CA 93388

**LOCATION:** STANDARD AND SHELL ST  
BAKERSFIELD, CA 93308

**SECTION:** 23 **TOWNSHIP:** 29S **RANGE:** 27E

**EQUIPMENT DESCRIPTION:**

MODIFICATION OF 103.4 MMBTU/HR DIESEL TREATING UNIT WITH SULFUR RECOVERY UNIT, CAUSTIC SCRUBBER, AND SAFETY FLARE: INSTALL SCR ON H-101 FOR RULE 4320 COMPLIANCE AND REMOVE OIL-FIRING PROVISIONS

### 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. No modification to heater H-501 shall be performed without an Authority to Construct for such modification(s), except for changes specified in conditions below. [District Rule 2010] Federally Enforceable Through Title V Permit
4. When heater H-501 is not operated, the fuel supply line shall be physically disconnected from this unit. [District Rule 4306] Federally Enforceable Through Title V Permit
5. Operator shall notify the District at least seven (7) calendar days prior to recommencing operation of this dormant heater, at which time this permit will be administratively modified to remove DEU references. [District Rule 4306] Federally Enforceable Through Title V Permit
6. A source test to demonstrate compliance with the indicated emission limits shall be performed within 60 days of recommencing operation of heater H-501. [District Rule 4306] 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

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7. The emission control systems shall be in operation and emissions shall be minimized insofar as technologically feasible during startup and shutdown. [District Rule 4305 and 4306] Federally Enforceable Through Title V Permit
8. The duration of each startup and shutdown period for the 47.1 MMBtu/hr furnace #H-101 shall not exceed 12.0 hours and 2.0 hours respectively. Emission limits of Rule 4305 and 4306 are waived during periods of startup and shutdown. [District Rule 4305, Section 5.5.6 and 4306, 5.3.3] Federally Enforceable Through Title V Permit
9. The duration of each startup and shutdown period for the 7.4 MMBtu/hr heater #H-201 shall not exceed 8.0 hours and 2.0 hours respectively. Emission limits of Rule 4305 and 4306 are waived during periods of startup and shutdown. [District Rule 4305, Section 5.5.6 and 4306, 5.3.3] Federally Enforceable Through Title V Permit
10. The duration of each startup and shutdown period for the 17.0 MMBtu/hr heater #H-501 shall not exceed 7.25 hours and 2.0 hours respectively. Emission limits of Rule 4305 and 4306 are waived during periods of startup and shutdown. [District Rule 4305, Section 5.5.6 and 4306, 5.3.3] Federally Enforceable Through Title V Permit
11. The duration of each startup and shutdown period for the 8.4 MMBtu/hr heater #H-601 shall not exceed 7.5 hours and 2.0 hours respectively. Emission limits of Rule 4305 and 4306 are waived during periods of startup and shutdown. [District Rule 4305, Section 5.5.6 and 4306, 5.3.3] Federally Enforceable Through Title V Permit
12. The duration of each startup and shutdown period for the 7.4 MMBtu/hr heater #H-602 shall not exceed 7.5 hours and 2.0 hours respectively. Emission limits of Rule 4305 and 4306 are waived during periods of startup and shutdown. [District Rule 4305, Section 5.5.6 and 4306, 5.3.3] Federally Enforceable Through Title V Permit
13. All equipment shall be constructed, maintained and operated according to the specifications and plans contained in the permit application except as otherwise specified herein. [District Rule 2201] Federally Enforceable Through Title V Permit
14. Equipment includes caustic scrubber S-303, caustic recirculation vessels A and B, and caustic recirculation pumps 970A and 970 B. [District Rule 2201] Federally Enforceable Through Title V Permit
15. Equipment includes: 47.1 MMBtu/hr natural gas-fired and PSA offgas fired reformer furnace #H-101; 30.0 MMBtu/hr (limited to 17.0 MMBtu/hr by fuel limit) refinery fuel gas-fired 1st fractionator heater #H-501; and 7.44 MMBtu/hr refinery fuel gas-fired heater for #H-201 HDS reactor. [District Rule 2010] Federally Enforceable Through Title V Permit
16. Heater H-101 shall be equipped with a SCR system. The heater shall not be operated unless the SCR system is operating. [District Rule 2201] Federally Enforceable Through Title V Permit
17. The exhaust stack from heater H-101 shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]
18. Ammonia slip from the SCR unit shall not exceed 10 ppmv @ 3% O<sub>2</sub>. [District Rule 4102]
19. Monthly records of the total amount of ammonia used by the SCR system shall be maintained. [District Rules 1070 and 2520, 9.4.1] Federally Enforceable Through Title V Permit
20. Equipment includes: 10.5 MMBtu/hr (limited to 8 MMBtu/hr by fuel limit) refinery fuel gas-fired 3rd fractionator heater #H-602; and 8.4 MMBtu/hr refinery fuel gas-fired 2nd fractionator heater #H-601. [District Rule 2010] Federally Enforceable Through Title V Permit
21. Equipment includes draft fan C-101, reformer M-101, desulfur vessel V-101, shift convertor vessel V-102, process condenser drum V-103, and deaerator V-104. [District Rule 2010] Federally Enforceable Through Title V Permit
22. Equipment includes steam drum V-105, blowdown drum V-106, steam separator V-107, PSA adsorbers V-108 A,B,C & D, and offgas drum V-109. [District Rule 2010] Federally Enforceable Through Title V Permit
23. Equipment includes one 1,275 bbl sour water pressure vessel, one 711 bbl, one 1,275 bbl, and one 719 bbl light naphtha pressure vessels, and light naphtha loading rack with nitrogen purge system. [District Rule 2010] Federally Enforceable Through Title V Permit
24. Unit 200 (HDS section) includes oil filter A-201, O/H stripper B-201, coke drum B-202, intermediate stripper F-201, and HDS reactor R-201. [District Rule 2010] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

25. Unit 300 (HDA section) includes hot separator B-301, recycle gas separator B-302, recycle gas compressor K/O drum B-310, hydrogen (H<sub>2</sub>) gas compressors K-301 A/B, and HDA reactor R-301. [District Rule 2010] Federally Enforceable Through Title V Permit
26. Unit 400 (amine wash & sour water stripper) includes amine solution filter A-401, OH separator B-401, amine K/O drum B-402, amine solution flash drum B-403, amine adsorber F-401, amine regenerator F-402, and amine storage tank T-401. [District Rule 2010] Federally Enforceable Through Title V Permit
27. Unit 400 includes sour water flash drum B-411, slop oil drum B-412, sour water stripper F-410, and sour water feed tank T-411. [District Rule 2010] Federally Enforceable Through Title V Permit
28. Unit 500 (1st fractionator) includes OH separator B-501, HDA feed surge drum B-502, OH separator for light ends stripper B-503, coke drum B-504, 1st fractionator F-501, light ends stripper F-502, and 1st fractionator feed heater H-501. [District Rule 2010] Federally Enforceable Through Title V Permit
29. Unit 600 (2nd/3rd fractionators) includes 2nd fractionator accumulator B-601, 3rd fractionator accumulator B-602, 2nd fractionator F-601, 3rd fractionator F-602, and kero stripper F-603. [District Rule 2010] Federally Enforceable Through Title V Permit
30. Unit 600 includes heavy solvent stripper F-604, 2nd fractionator reboiler H-601, 3rd fractionator reboiler H-602, compressors K-601 A/B, and vacuum pumps K-602 A/B. [District Rule 2010] Federally Enforceable Through Title V Permit
31. Sulfur recovery unit includes liquefied oxygen storage facility combustion oxygen enriched air blower 10-K-01A, spare combustion oxygen enriched air blower 10-K-01B, amine acid gas and NH<sub>3</sub> gas KO drums 10-V-01/02, and converter 1/2/3-common shell with hydrogenation reactor 10-V-04/05/06. [District Rule 2010] Federally Enforceable Through Title V Permit
32. Sulfur recovery unit includes sulfur pit vent eductor 10-K-02 (venting to thermal oxidizer 10-F-02), reaction furnace 10-F-01, thermal oxidizer and stack 10-F-02, sulfur pit 10-T-01, K/O drum sour water pumps 10-P-01 A/B, sulfur pump 10-P-03, and boiler feedwater pumps 10-P-04 A/B. [District Rule 2010] Federally Enforceable Through Title V Permit
33. Tailgas unit includes reducing gas generator (RGG) 11-F-01, contact condenser pumps 11-P-01 A/B, rich amine pumps 11-P-02 A/B, regenerator reflux pumps 11-P-03 A/B, amine sump pump 11-P-04, and lean amine pump 11-P-05. [District Rule 2010] Federally Enforceable Through Title V Permit
34. Tail gas unit includes amine surge drum 11-T-01, hydrogenation reactor 11-V-01, contact condenser 11-V-02, amine absorber 11-V-03, amine regenerator 11-V-04, and regenerator reflux drum 11-V-05. [District Rule 2010] Federally Enforceable Through Title V Permit
35. The Claus sulfur recovery unit sulfur production shall not exceed six long tons per day. [District Rule 2201] Federally Enforceable Through Title V Permit
36. Fugitive emission rate from caustic scrubber S-303, caustic recirculation vessels A and B, and caustic recirculation pumps P-970-A and P-970-B, calculated using the California Implementation Guideline for Estimating Mass Emissions of Fugitive Hydrocarbon leaks at Petroleum Facilities, Table IV-2a. 1995 EPA Protocol, Refinery Screening Value Range Emissions Factors, shall not exceed 1.1 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit
37. Permittee shall maintain accurate fugitive emissions component counts and calculation of resulting emissions from caustic scrubber S-303, caustic recirculation vessels A and B, and caustic recirculation pumps P-970-A and P-970-B using fugitive emissions factors described in this permit. [District Rule 2201] Federally Enforceable Through Title V Permit
38. Gas leaks exceeding 10,000 ppmv and liquid leaks exceeding 3 drops per minute from the caustic scrubber S-303, caustic recirculation vessels A and B, and caustic recirculation pumps P-970-A and P-970-B are a violation of this permit and shall be reported as a deviation. [District Rule 2201] Federally Enforceable Through Title V Permit

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39. Flare shall burn no more than 190,000 scf in any day of hydrogen plant gas, purchased natural gas, and all gases from diesel stripper, diesel hydrogenation flash drum, sour water stripper tank, vapors collected from S-36-104, and gases from heavy oil hydrofinisher processing unit on S-36-109. [District Rule 2010] Federally Enforceable Through Title V Permit
40. Upon recommencing operation, permittee shall demonstrate fuel limitation for heater H-501 by either a non-resettable fuel meter for each heater and daily records of fuel use, or provide District approved documentation demonstrating how the fuel flow is limited to the permitted rating. [District Rule 2201] Federally Enforceable Through Title V Permit
41. Permittee shall demonstrate fuel limitation for heater H-602 by either a non-resettable fuel meter for each heater and daily records of fuel use, or provide District approved documentation demonstrating how the fuel flow is limited to the permitted rating. [District Rule 2201] Federally Enforceable Through Title V Permit
42. All gases from diesel stripper, diesel hydrogenation flash drum, and sour water stripper tank shall be sent to MEA section for sulfur compound removal except during plant shutdown or breakdown conditions pursuant to Rule 1100 when it shall be burned in the flare. [District Rule 2201] Federally Enforceable Through Title V Permit
43. Flare equipped with flared gas flow meter serving hydrogen plant gas, purchased natural gas, and all gases from diesel stripper, diesel hydrogenation flash drum, sour water stripper tank, vapors collected from S-36-104, and gases from heavy oil hydrofinisher processing unit on S-36-109. These gases shall only be flared during breakdown conditions pursuant to Rule 1100 and during plant shutdowns. [District Rule 4001] Federally Enforceable Through Title V Permit
44. Hydrogen sulfide analyzer/recorder shall be located at exit of tail gas unit prior to thermal oxidizer 10-F-02 and shall be operational and utilized except during bypass of the tail gas treating unit during startup or shutdown. [District NSR Rule] Federally Enforceable Through Title V Permit
45. Bypass of the tailgas unit will occur only when natural gas is supplied to the main reactor furnace during startup or shutdown of the sulfur recovery unit or tail gas treating unit. [District NSR Rule] Federally Enforceable Through Title V Permit
46. Pressure in sour water tank and light naphtha tanks shall be maintained above 15 psig. Sour water tank pressure relief valve shall be set at 40 psig and the light naphtha pressure relief valves shall be set at 50 psig and shall vent to atmosphere. [District Rule 4001] Federally Enforceable Through Title V Permit
47. Light naphtha liquid from overhead accumulator shall be sent to light naphtha pressure storage vessels. [District NSR Rule] Federally Enforceable Through Title V Permit
48. Overhead accumulator offgas shall be sent to the fuel gas compressor for introduction into fuel gas system, or shall be flared under plant breakdown conditions pursuant to Rule 1100. [District NSR Rule] Federally Enforceable Through Title V Permit
49. All sour water must be treated in sour water stripper prior to being exposed to the atmosphere. [District NSR Rule] Federally Enforceable Through Title V Permit
50. Sour water pressure tank shall vent to sulfur plant or shall vent to flare during breakdown conditions pursuant to Rule 1100. [District NSR Rule] Federally Enforceable Through Title V Permit
51. If thermal oxidizer 10-F-2 is inoperative, sour water shall not be pumped from sour water storage vessel and diesel hydrotreating unit and heavy oil hydrofinishing processing unit shall be shut down. [District NSR Rule] Federally Enforceable Through Title V Permit
52. Sulfur recovery unit and tailgas unit overall sulfur removal shall be no less than 99.8% by weight except during startup or shutdown conditions. [District NSR Rule] Federally Enforceable Through Title V Permit
53. The inlet gas stream to the thermal oxidizer shall not contain greater than 10 ppmv H<sub>2</sub>S on a three hour rolling average basis except during startup or shutdown conditions of the sulfur recovery unit or tail gas treating unit. [District NSR Rule] Federally Enforceable Through Title V Permit
54. Startup and shutdown conditions for the sulfur recovery unit and tail gas treating unit combined shall not occur for more than 12 hours in any day. [District NSR Rule] Federally Enforceable Through Title V Permit

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55. Thermal oxidizer sulfur compound emissions during startup or shutdown conditions of the sulfur recovery unit or tail gas treating unit shall not exceed 2000 ppm as SO<sub>2</sub>. [District NSR Rule and 4801] Federally Enforceable Through Title V Permit
56. SO<sub>x</sub> emissions from the sulfur recovery unit and tail gas treating unit through the thermal oxidizer shall not exceed 109.6 pounds per day. [District NSR Rule] Federally Enforceable Through Title V Permit
57. Only natural gas consisting primarily of methane and less than 5% by weight hydrocarbons heavier than butane and PSA offgas shall be combusted in reformer furnace #H-101. [District Rule 2201] Federally Enforceable Through Title V Permit
58. VOC emissions from fugitive emissions sources in this permit unit shall not exceed 27.99 lb per day. [District Rule 2201] Federally Enforceable Through Title V Permit
59. Emissions from process heater H-101 shall not exceed any of the following limits: 0.011 lb-NO<sub>x</sub>/MMBtu (9 ppmv @ 3% O<sub>2</sub>), 0.0034 lb-SO<sub>x</sub>/MMBtu, 0.0137 lb-PM<sub>10</sub>/MMBtu, 0.015 lb-CO/MMBtu (20 ppmv @ 3% O<sub>2</sub>), or 0.0040 lb-VOC/MMBtu (9.5 ppmv @ 3% O<sub>2</sub>). [District Rules 2201, 4305, 4306, 4320 and 4351] Federally Enforceable Through Title V Permit
60. Emissions from process heater H-201 shall not exceed any of the following: PM<sub>10</sub>: 0.0137 lb/MMBtu; NO<sub>x</sub> (as NO<sub>2</sub>): 0.0353 lb/MMBtu or 29.4 ppmv @ 3% O<sub>2</sub>; VOC: 0.0040 lb/MMBtu; or CO: 137 ppmv @ 3% O<sub>2</sub>. [District Rule 2201] Federally Enforceable Through Title V Permit
61. Upon recommencing operation, emissions from process heater H-501 shall not exceed any of the following: PM<sub>10</sub>: 0.0137 lb/MMBtu; NO<sub>x</sub> (as NO<sub>2</sub>): 0.036 lb/MMBtu or 30 ppmv @ 3% O<sub>2</sub>; VOC: 0.0040 lb/MMBtu; or CO: 137 ppmv @ 3% O<sub>2</sub>. [District Rules 2201, 4305, 4306, and 4351] Federally Enforceable Through Title V Permit
62. Emissions from process heaters H-602 shall not exceed any of the following: PM<sub>10</sub>: 0.0137 lb/MMBtu; NO<sub>x</sub> (as NO<sub>2</sub>): 0.036 lb/MMBtu or 30 ppmv @ 3% O<sub>2</sub>; VOC: 0.0040 lb/MMBtu; or CO: 137 ppmv @ 3% O<sub>2</sub>. [District Rules 2201, 4305, 4306, and 4351] Federally Enforceable Through Title V Permit
63. Emissions from process heater H-601 shall not exceed any of the following: PM<sub>10</sub>: 0.0137 lb/MMBtu; NO<sub>x</sub> (as NO<sub>2</sub>): 0.036 lb/MMBtu or 30 ppmv @ 3% O<sub>2</sub>; VOC: 0.0040 lb/MMBtu; or CO: 400 ppmv @ 3% O<sub>2</sub>. [District Rules 2201, 4305, 4306, and 4351] Federally Enforceable Through Title V Permit
64. Emissions from flare shall not exceed any of the following: PM<sub>10</sub>: 2.7 lb/day, SO<sub>x</sub>: 104.9 lb/day, NO<sub>x</sub>: 6.8 lb/day, VOC: 7.4 lb/day, or CO: 70.3 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit
65. Sulfur content of PSA offgas combusted in reformer furnace H-101 shall not exceed 0.0123 grains/dscf. Sampling of PSA offgas to determine compliance with sulfur content limit shall be conducted annually. [District Rule 2201] Federally Enforceable Through Title V Permit
66. Sulfur content of fuel gas combusted by 1st fractionator feed heater H-501 shall not exceed 0.10 grains/dscf as determined on a rolling three (3) hour average basis. [40 CFR 60.104(a)(1)] Federally Enforceable Through Title V Permit
67. Sulfur content of fuel gas combusted by 2nd fractionator feed heater H-602 and heater H-201 shall not exceed 0.0553 grains/dscf as determined on a rolling three (3) hour average basis. [District NSR Rule and 40 CFR 60.104(a)(1)] Federally Enforceable Through Title V Permit
68. Sulfur content of fuel gas combusted by 3rd fractionator feed heater H-601 shall not exceed 0.069 grains/dscf as determined on a rolling three (3) hour average basis. [District Rule 2201 and 40 CFR 60.104(a)(1)] Federally Enforceable Through Title V Permit
69. Permittee shall maintain accurate records of number of fugitive emissions components and calculated emissions using Technical Guidance Document to AB2588 for refineries Tables D1-D3, AP-42 Table 9.1-2, or other District approved emission factors. [District Rules 1070, and 2520, 9.3.2] Federally Enforceable Through Title V Permit
70. Upon recommencing operation, heater H-501 shall be equipped with sampling facilities for source testing in accordance with the provisions of Rule 1081 (Source Sampling). [District Rule 1081] Federally Enforceable Through Title V Permit

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71. All fired equipment, H-101, H-201, H-601, and H-602, shall be equipped with sampling facilities for source testing in accordance with the provisions of Rule 1081 (Source Sampling). [District Rule 1081] Federally Enforceable Through Title V Permit
72. Source testing to measure NOx and CO emissions from the 47.1 MMBtu/hr Heater #H-101 shall be conducted within 60 days of initial startup. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
73. Source testing to measure NOx and CO emissions from heaters H-101, H-201, H-501, H-601 and H-602 shall be conducted at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
74. 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
75. 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
76. 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
77. 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
78. 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
79. 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
80. Fuel sulfur content shall be determined using EPA Method 11 or Method 15. [District Rule 4320] Federally Enforceable Through Title V Permit
81. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
82. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4306. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
83. The permittee shall monitor and record the stack concentration of NOx, CO, and O2 of the heaters 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
84. The permittee shall monitor and record the stack concentration of NH3 from the SCR unit at least once during each month. This monitoring shall be conducted utilizing Draeger tubes or a District-approved equivalent method at the time NOx, CO and O2 readings are taken. 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 one (1) day of restarting the unit unless monitoring has been performed within the last month. [District Rules 2201 and 4102] Federally Enforceable Through Title V Permit
85. In stack oxygen monitors are acceptable for O2 measurement. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

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86. 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 performing the notification and testing required by this condition. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
87. All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
88. 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
89. Permittee shall comply with all applicable notification, reporting, recordkeeping, testing, and maintenance requirements of Rule 4001 (40 CFR 60; subparts J, GGG, and QQQ). Heaters H-201, H-501, H-601, H-602, and the flare are subject to Subpart J. [District Rule 4001] Federally Enforceable Through Title V Permit
90. Equipment shall include monitoring system as required by 40 CFR 60, Subpart J for monitoring and recording of sulfur content (dry basis) of fuel gas (except PUC regulated natural gas, psa offgas, and combinations of only PUC gas and psa offgas) prior to combustion. [District Rule 4001] Federally Enforceable Through Title V Permit
91. The combustion in the thermal oxidizer, or other fuel gas combustion device of gases released as a result of start-up, shutdown, or malfunction is exempt from the 0.1 gr/dscf H<sub>2</sub>S requirement. The combustion in the flare of gases released as a result of start-up, shutdown, upset, malfunction, or the result of relief valve leakage is exempt from the 0.1 gr/dscf H<sub>2</sub>S requirement. [District Rule 4001, Subpart J] Federally Enforceable Through Title V Permit
92. Continuous emissions monitoring system shall be installed, calibrated, operated, and reported according to EPA guidelines as specified under 40 CFR 60, Subpart J, Specification 7, and general requirements. CEM results shall be calculated on a rolling three (3) hour basis. [District Rule 4001] Federally Enforceable Through Title V Permit
93. PSA gas monitoring shall be maintained pursuant to EPA approved alternate monitoring, one analysis for the sulfur content of the feedstock gas each reporting period and a statement confirming that the pipeline natural gas is the only feed to the hydrogen plant. [District Rule 4001] Federally Enforceable Through Title V Permit
94. Permittee shall maintain accurate daily records of amount of gas burned in the flare. [District Rule 1070, and 2520, 9.3.2] Federally Enforceable Through Title V Permit
95. Permittee shall sample flared gas for H<sub>2</sub>S content twice daily. [District Rule 1070, and 2520, 9.3.2] Federally Enforceable Through Title V Permit
96. Permittee shall maintain accurate records of fuel consumption data, operational data, startup and shutdown condition frequency and duration of the sulfur recovery unit, and gas sulfur content to verify daily emission limit compliance. [District NSR Rule and 1070] Federally Enforceable Through Title V Permit
97. All records required by this permit shall be made available for District inspection upon request for a period of five years. [District Rule 1070, and 2520, 9.4.2] Federally Enforceable Through Title V Permit

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98. Operator shall not burn in any fuel gas combustion device any fuel gas that contains hydrogen sulfide (H<sub>2</sub>S) in excess of 0.10 gr/dscf (230 mg/dscm). [40 CFR Part 60, subpart J, 60.104(a)(1)] Federally Enforceable Through Title V Permit
99. Operator shall report all rolling 3-hour periods during which the average concentration of H<sub>2</sub>S as measured by the H<sub>2</sub>S continuous monitoring system exceeds 0.10 gr/dscf (230 mg/dscm). [40 CFR Part 60, subpart J, 60.105(e)(3)(ii)] Federally Enforceable Through Title V Permit
100. Operator shall determine compliance with the H<sub>2</sub>S standard using EPA Method 11. [40 CFR Part 60, subpart J, 60.106(e)] Federally Enforceable Through Title V Permit
101. All required source testing shall conform to the compliance testing procedures described in District Rule 1081(Amended December 16, 1993). [District Rule 1081] Federally Enforceable Through Title V Permit
102. Copies of all fuel invoices, gas purchase contracts, supplier certifications, and test results used to determine compliance with the conditions of this permit shall be maintained. The operator shall record daily amount and type(s) of fuel(s) combusted and all dates on which unit is fired on any noncertified fuel. [District Rule 2520, 9.4.2 and 40 CFR 60.48c(g)] Federally Enforceable Through Title V Permit
103. Operator shall maintain all records for at least five years and conform to the recordkeeping requirements described in District Rule 2520. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
104. Particulate matter emissions shall not exceed 0.1 grain/dscf, 0.1 grain/dscf calculated to 12% CO<sub>2</sub>, nor 10 lb/hr. [District Rules 4201, 3.1 and 4301, 5.1 and 5.2.3] Federally Enforceable Through Title V Permit
105. Emissions of sulfur compounds from any of the following units, H-101, H-201, H-501, H-601, H-602 shall not exceed 200 lb per hour, calculated as SO<sub>2</sub>. [District Rule 4301] Federally Enforceable Through Title V Permit
106. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, each fuel source shall be tested weekly for sulfur content and higher heating value. If compliance with the fuel sulfur content limit and sulfur emission limits has been demonstrated for 8 consecutive weeks for a fuel source, then the fuel testing frequency shall be semi-annually. If a semi-annual fuel content source test fails to show compliance, weekly testing shall resume. [District Rule 2520] Federally Enforceable Through Title V Permit
107. When complying with SO<sub>x</sub> emission limits by testing of stack emissions, testing shall be performed not less than once every 12 months using EPA Method 6B; or Method 8; or, for units using gaseous fuel scrubbed for sulfur pre-combustion, a grab sample analysis by GC-FPD/TCD performed in the laboratory and EPA Method 19 to calculated emissions. Gaseous fuel fired units demonstrating compliance on two consecutive annual source tests shall be tested not less than once every thirty-six months; however, annual source testing shall resume if any test fails to show compliance. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
108. If the unit is fired on noncertified gaseous fuel and compliance with SO<sub>x</sub> emission limits is achieved through fuel sulfur content limitations, then the sulfur content of the gaseous fuel being fired in the unit shall be determined using ASTM D 1072, D 3031, D 4084, D 3246 or grab sample analysis by GC-FPD/TCD performed in the laboratory. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
109. If fuel analysis is used to demonstrate compliance with conditions of this permit, the fuel higher heating value for each fuel shall be certified by a third party fuel supplier or determined by: ASTM D 1826 or D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District Rule 4305, 6.2.1; 4306, 6.2.1, and 4351, 6.2.1] Federally Enforceable Through Title V Permit
110. 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 Rule 4801] Federally Enforceable Through Title V Permit
111. The flare shall be operated according to the manufacturer's specifications, a copy of which shall be maintained on site. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
112. Flares shall only be used with the net heating value of the gas being combusted being 200 Btu/scf or greater if the flare is non-assisted; or with the net heating value of the gas being combusted being 300 Btu/scf or greater if the flare is air-assisted or steam-assisted. [40 CFR 60.18 (c)(3)] Federally Enforceable Through Title V Permit

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113. The net heating value of the gas being combusted in a flare shall be calculated annually, pursuant to 40 CFR 60.18(f)(3) and using EPA Method 18, ASTM D1946, and ASTM D2382. [40 CFR 60.18 (f)(3-6)] Federally Enforceable Through Title V Permit
114. Air-assisted flares shall be operated with an exit velocity less than  $V_{max}$ , as determined by the equation specified in paragraph 40 CFR 60.18 (f)(6). [40 CFR 60.18 (c)(5)] Federally Enforceable Through Title V Permit
115. Nonassisted and steam-assisted flares shall be operated with an exit velocity, as determined by the methods specified in 40 CFR 60.18 (f)(4), less than 60 ft/sec, except as provided in 40 CFR 60.18 (c)(4)(ii) and (iii). [40 CFR 60.18 (c)(4)(i)] Federally Enforceable Through Title V Permit
116. Nonassisted and steam-assisted flares may be operated with an exit velocity, as determined by the methods specified in 40 CFR 60.18 (f)(4), equal to or greater than 60 ft/sec, but less than 400 ft/sec if the net heating value of the gas being combusted is greater than 1,000 Btu/scf. [40 CFR 60.18 (c)(4)(ii)] Federally Enforceable Through Title V Permit
117. Nonassisted and steam-assisted flares may be operated with an exit velocity, as determined by the methods specified in 40 CFR 60.18 (f)(4), less than the velocity,  $V_{max}$ , as determined by the equation specified in paragraph 40 CFR 60.18 (f)(5), and less than 400 ft/sec. [40 CFR 60.18 (c)(4)(iii)] Federally Enforceable Through Title V Permit
118. The actual exit velocity of a flare shall be determined by dividing the volumetric flowrate (in units of standard temperature and pressure), as determined by Reference Methods 2, 2A, 2C, or 2D as appropriate; by the unobstructed (free) cross sectional area of the flare tip. [40 CFR 60.18 (f)(4)] Federally Enforceable Through Title V Permit
119. Flares shall be operated with a flame present at all times, and kept in operation when emissions may be vented to them. The presence of a flare pilot flame shall be monitored using a thermocouple or any other equivalent device to detect the presence of a flame. [40 CFR 60.18 (c)(2), 60.18 (e), and 60.18 (f)(2)] Federally Enforceable Through Title V Permit
120. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following requirements of SJVUAPCD Rules 4201 (Amended December 17, 1992), and 4301 (Amended December 17, 1992). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
121. Compliance with permit conditions in the Title V permit shall be deemed compliance with the requirements of District Rule 4801, section 3.1 (Amended December 17, 1992). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
122. Heat exchangers 11-E-01A and 11-E-01B shall not operate concurrently. [District Rule 2010] Federally Enforceable Through Title V Permit
123. Permittee shall keep an accurate record of dates of inspection and monitoring, components inspected and monitored, and results of fugitive emissions calculations for compliance with the daily emission limit of the caustic scrubber S-303, caustic recirculation vessels A and B, and caustic recirculation pumps P-970-A and P-970-B. Such records shall be made readily available for District inspection upon request for a period of five years. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
124. The flame shall be present at all times when combustible gases are vented through the flare. [District Rule 4311, 5.2] Federally Enforceable Through Title V Permit
125. The outlet shall be equipped with an automatic ignition system, or, shall operate with a pilot flame present at all times when combustible gases are vented through the flare, except during purge periods for automatic-ignition equipped flares. [District Rule 4311, 5.3] Federally Enforceable Through Title V Permit
126. Except for flares equipped with a flow-sensing ignition system, a heat sensing device such as a thermocouple, ultraviolet beam sensor, infrared sensor, or an alternative equivalent device, capable of continuously detecting at least one pilot flame or the flare flame is present shall be installed and operated. [District Rule 4311, 5.4] Federally Enforceable Through Title V Permit
127. Flares that use flow-sensing automatic ignition systems and which do not use a continuous flame pilot shall use purge gas for purging. [District Rule 4311, 5.5] Federally Enforceable Through Title V Permit

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128. Flaring is prohibited unless it is consistent with an approved flare minimization plan (FMP), and all commitments listed in that plan have been met. This standard shall not apply if the APCO determines that the flaring is caused by an emergency and is necessary to prevent an accident, hazard or release of vent gas directly to the atmosphere. [District Rule 5.8] Federally Enforceable Through Title V Permit
129. The operator shall minimize sulfur dioxide flare emissions to less than 1.50 tons per million barrels of crude processing capacity, calculated as an average over one calendar year. [District Rule 4311, 5.9.1] Federally Enforceable Through Title V Permit
130. The operator shall monitor the vent gas flow to the flare with a flow measuring device. [District Rule 4311, 5.10] Federally Enforceable Through Title V Permit
131. The operator shall maintain and retain on-site for a minimum of five years, and made available to the APCO, ARB, and EPA a copy of the approved flare minimization plan, a copy of annual reports submitted to the District, and all applicable flare monitoring data collected as required by this permit. [District Rule 4311, 6.1] Federally Enforceable Through Title V Permit
132. The operator of a flare subject to flare minimization shall notify the APCO of an unplanned flaring event within 24 hours after the start of the next business day or within 24 hours of their discovery, which ever occurs first. The notification shall include the flare source identification, the start date and time, and the end date and time. [District Rule 4311, 6.2] Federally Enforceable Through Title V Permit
133. Effective on and after July 1, 2012, and annually thereafter, the operator of a flare subject to flare minimization shall submit an annual report to the APCO that summarizes all Reportable Flaring Events as defined in Section 3.0 that occurred during the previous 12 month period. The report shall be submitted within 30 days following the end of the twelve month period of the previous year. The report shall include, but is not limited to all of the following: the results of an investigation to determine the primary cause and contributing factors of the flaring event; any prevention measures considered or implemented to prevent recurrence together with a justification for rejecting any measures that were considered but not implemented; if appropriate, an explanation of why the flaring was an emergency and necessary to prevent accident, hazard or release of vent gas to the atmosphere, or where, due to a regulatory mandate to vent a flare, it cannot be recovered, treated and used as a fuel gas at the facility; and the date, time, and duration of the flaring event. [District Rule 4311, 6.2.2] Federally Enforceable Through Title V Permit
134. Effective on and after July 1, 2012, and annually thereafter, the operator of a flare subject to flare monitoring requirements shall submit an annual report to the APCO within 30 days following the end of each 12 month period. The report shall include the following: the total volumetric flow of vent gas in standard cubic feet for each day; hydrogen sulfide content, methane content, and hydrocarbon content of vent gas composition; if vent gas composition is monitored by a continuous analyzer or analyzers, average total hydrocarbon content by volume, average methane content by volume, and depending upon the analytical method used, total reduced sulfur content by volume or hydrogen sulfide content by volume of vent gas flared for each hour of the month; if the flow monitor used measures molecular weight, the average molecular weight for each hour of each month; for any pilot and purge gas used, the type of gas used, the volumetric flow for each day and for each month; and the means used to determine flow; flare monitoring system downtime periods, including dates and times; for each day and for each month provide calculated sulfur dioxide emissions; and a flow verification report for each flare subject to this rule. The flow verification report shall include flow verification testing. [District Rule 4311, 6.2.3] Federally Enforceable Through Title V Permit
135. Total hydrocarbon content and methane content of vent gas shall be determined using ASTM Method D 1945-96, ASTM Method UOP 539-97, EPA Method 18, or EPA Method 25A or 25B. [District Rule 4311, 6.3.4.1] Federally Enforceable Through Title V Permit
136. Vent gas flow shall be determined using a verification method recommended by the manufacturer of the flow monitoring equipment installed. [District Rule 4311, 6.3.5.2] Federally Enforceable Through Title V Permit
137. The operator shall monitor sulfur content of the vent gas to the flare using a colorimetric tube system on a daily basis, and monitor vent gas hydrocarbon on a weekly basis by collecting samples and having them tested. [District Rule 4311, 6.6.5] Federally Enforceable Through Title V Permit
138. The operator shall provide the APCO with access to the flare monitoring system to collect the vent gas samples. [District Rule 4311, 6.6.7] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

139. The operator shall monitor the volumetric flows of the flare's purge and pilot gases with flow measuring devices or other parameters as specified on the Permit to Operate so that volumetric flows of pilot and purge gas may be calculated based on pilot design and the parameters monitored. [District Rule 4311, 6.7] Federally Enforceable Through Title V Permit
140. The operator shall monitor and record the water level and pressure of the water seal that services the flare daily. [District Rule 4311, 6.8] Federally Enforceable Through Title V Permit
141. The operator shall report periods of flare monitoring system inoperation greater than 24 continuous hours by the following working day, followed by notification of resumption of monitoring. Periods of inoperation of monitoring equipment shall not exceed 14 days per any 18-consecutive-month period. Periods of flare monitoring system inoperation do not include the periods when the system feeding the flare is not operating. [District Rule 4311, 6.9.1] Federally Enforceable Through Title V Permit
142. The operator shall install and maintain equipment that records a real-time digital image of the flare and flame at a frame rate of no less than one frame per minute. The recorded image of the flare shall be of sufficient size, contrast, and resolution to be readily apparent in the overall image or frame. The image shall include an embedded date and time stamp. The equipment shall archive the images for each 24-hour period. In lieu of video monitoring the operator may use an alternative monitoring method that provides data to verify date, time, vent gas flow, and duration of flaring events. [District Rule 4311, 6.10] Federally Enforceable Through Title V Permit

Date	12/12/11
Engineer Name	Steve Roeder
Engineer Initials	SAR
Engineer's Regional Manager	Leonard Scandura
Facility Name	San Joaquin Refining Company
Facility #	S-36
Project #	1113297
Location	at the corner of Shell Street and Standard Street in Bakersfield
	The following should make sense:  This facility is located at at the corner of Shell Street and Standard Street in Bakersfield.
More than 1 ATC's?	Yes
ATC's (i.e. ATC # S-1234-3-2)	ATC's S-36-1-16, 41-18 and 51-19
Modification Details (Complete Sentences)	San Joaquin Refining has proposed to install SCR on three boilers and process heaters to reduce NOx emissions for Rule 4320 compliance.
Contact Receiving Proposed	David Campbell
Greeting Name (i.e. Mr. Doe)	Mr. David Campbell
Preliminary Notice Date	12/07/11
Mailing Address	PO Box 5576 Bakersfield, CA 93388

\*\* The letters below are editable; therefore, modify as required. \*\*