



# AUTHORITY TO CONSTRUCT

PERMIT NO: S-1128-144-14

ISSUANCE DATE: 11/03/2011

LEGAL OWNER OR OPERATOR: CHEVRON USA INC  
MAILING ADDRESS: P O BOX 1392  
BAKERSFIELD, CA 93302

LOCATION: HEAVY OIL WESTERN STATIONARY SOURCE  
KERN COUNTY

SECTION: 05 TOWNSHIP: 30S RANGE: 22E

**EQUIPMENT DESCRIPTION:**

MODIFICATION OF THERMALLY ENHANCED OIL RECOVERY (TEOR) OPERATION WELL VENT VAPOR CONTROL SYSTEM #CC-5Z/6Z SERVING 33 STEAM DRIVE WELLS, INCLUDING HEAT EXCHANGERS, GAS/LIQUID SEPARATORS, COMPRESSORS, AND PIPING TO SULFEROX PLANT (S-1128-116), SCRUBBED SG'S OR DOGGR APPROVED DISPOSAL WELL(S) - CYMRIC: REMOVE REFERENCES TO SULFEROX H2S REMOVAL PLANT

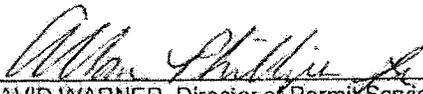
## CONDITIONS

1. The facility shall submit an application to modify the Title V permit in accordance with the timeframes and procedures of District Rule 2520. [District Rule 2520] Federally Enforceable Through Title V Permit
2. The crude oil production from wells associated with this permit unit shall not lie within 1000 feet of an air injection well used for in-situ combustion. [District Rule 4407, 2.0, 3.4, and 3.5] Federally Enforceable Through Title V Permit
3. All required source testing shall conform to the compliance testing procedures described in District Rule 1081 (as amended December 16, 1993). [District Rule 1081 and County Rules 108 (Kings), 108.1 (Fresno, Merced, San Joaquin, Tulare, Kern, and Stanislaus), and 110 (Madera)] Federally Enforceable Through Title V Permit
4. The operator shall maintain monitoring records of the date and well identification where steam injection or well stimulation occurs. [District Rule 4401, 6.1.1] Federally Enforceable Through Title V Permit
5. The operator shall maintain all records of required monitoring data and support information for inspection at any time for a period of five years. [District Rule 2520, 9.5.2] Federally Enforceable Through Title V Permit
6. Total uncontrolled VOC emissions from all well vents shall be reduced by at least 99%. [District Rule 4401, 5.2] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director / APCO

  
DAVID WARNER, Director of Permit Services  
S-1128-144-14: Nov 3 2011 3:50PM - LEONARDS - Joint Inspection NOT Required

7. Total number of leaks from the vapor collection and control system, including condensate handling, shall not exceed the number as allowed by Rule 4401 (as amended January 15, 1998) at any one time. [District Rule 4401, 5.3] Federally Enforceable Through Title V Permit
8. Units consisting of more than 500 wells shall not exceed one leak detected for each 20 wells tested with a minimum of 50 wells tested. [District Rule 4401, 5.3] Federally Enforceable Through Title V Permit
9. Operator shall affix a readily visible tag bearing the date on which a leak is detected. The tag shall remain in place until the leaking component is repaired. [District Rule 4401, 5.3.1] Federally Enforceable Through Title V Permit
10. Operator shall repair each leak within 15 calendar days of detection. The APCO may grant a 10 calendar day extension if the operator demonstrates that the necessary and sufficient actions have and are being taken to correct the leak. [District Rule 4401, 5.3.1] Federally Enforceable Through Title V Permit
11. Operator shall maintain all components of a well vent vapor collection and control system in good repair. Components of the well vent vapor collection and control system shall include all piping, valves, fittings, pumps, compressors, tanks, etc. used to collect, control, store, or dispose of VOC condensate or non-condensable VOCs and which is prior to any blending of VOC condensate with crude oil or blending of non-condensable VOCs with gases to be used as a fuel. [District Rule 4401, 5.3 and 5.3.2] Federally Enforceable Through Title V Permit
12. Annual control efficiency compliance tests shall be performed on all vapor collection and control systems used to control emissions from steam-enhanced crude oil production wells. Testing shall be performed by source testers certified by the California Air Resources Board (CARB) during June, July, August or September of each year if the system's control efficiency is dependent upon ambient air temperature. The APCO may waive the annual testing requirements of this condition if the vapor control system does not exhaust to atmosphere or if all uncondensed VOC emissions collected by a vapor collection and control system are incinerated in fuel burning equipment, an internal combustion engine or in a smokeless open flare, and the source's Operating Permit contains adequate periodic monitoring to ensure the source meets 99% control efficiency. [District Rule 4401, 5.1, 5.2 and 6.2.1] Federally Enforceable Through Title V Permit
13. The control efficiency of the vapor collection and control system used to control VOC emissions from steam enhanced crude oil production well shall be determined by mass balance based on most stringent of a source test, USEPA approved emission factors, or Air Pollution (AP)-42 emission factors for components and number of components; and the efficiency of destruction devices determined by USEPA Method 18, 25, 25a, or 25b as applicable. [District Rule 4401, 6.3.1] Federally Enforceable Through Title V Permit
14. Well casing vents or downstream valves may be closed if wells are producing to tanks equipped with an operating vapor control system or if the wells are idle. [District Rule 4401] Federally Enforceable Through Title V Permit
15. VOC content shall be determined using the latest revision of ASTM Method E168, E169, or E260 as applicable. Halogenated exempt compounds shall be determined by CARB Method 432. [District Rule 4401, 6.3.2] Federally Enforceable Through Title V Permit
16. The source shall perform annual leak inspections on at least 20% of the components in the well vent vapor control system using a portable hydrocarbon detection instrument in accordance with USEPA Method 21. [District Rules 2520, 9.4.2 and 4401, 6.3.3] Federally Enforceable Through Title V Permit
17. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following requirements: County Rules 108 (Kings), 108.1 (Fresno, Merced, San Joaquin, Tulare, Kern, and Stanislaus), and 110 (Madera). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
18. Compliance with permit conditions in the Title V permit shall be deemed in compliance with SJVUAPCD Rule 4401 (Amended January 15, 1998), excluding sections 5.1 and 5.2 for control systems which have been waived from complying with the requirement of section 6.2.1. A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
19. The requirements of SJVUAPCD Rule 4407 (Adopted May 19, 1994) do not apply to this permit unit. A permit shield is granted from this requirement. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

20. The operation includes heat exchanger(s), gas/liquid separator(s), vapor compressor(s), and gas piping to either TEOR operation S-1128-116, scrubbed steam generators S-1128-3, '-24, '-25, '-26, and '-29 through '-34 or DOGGR approved disposal well(s). [District Rule 2201] Federally Enforceable Through Title V Permit
21. VOC emissions shall not exceed 103.6 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit
22. Permittee shall maintain with the permit a current listing of all steam enhanced wells connected to the casing vent control system and a copy of DOGGR approval of disposal well(s). [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
23. Records required by this permit shall be retained for a period of five years and shall be made available for District inspection upon request. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
24. ATC S-1128-116-61, '-128-20, '-130-19, '-248-40, & '-385-60 shall be implemented concurrently with this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit



# AUTHORITY TO CONSTRUCT

PERMIT NO: S-1128-248-40

ISSUANCE DATE: 11/03/2011

LEGAL OWNER OR OPERATOR: CHEVRON USA INC  
MAILING ADDRESS: P O BOX 1392  
BAKERSFIELD, CA 93302

LOCATION: HEAVY OIL WESTERN STATIONARY SOURCE  
KERN COUNTY

SECTION: SW31 TOWNSHIP: 29S RANGE: 22E

**EQUIPMENT DESCRIPTION:**

MODIFICATION OF 6,600 BBL FIXED ROOF CRUDE OIL TANK T-24 W VAPOR CONTROL SYSTEM SHARED W/23 PERMIT UNITS; INCLUDING HEAT EXCHANGER(S), G/L SEPARATOR(S), GAS COMPRESSORS, & GAS PIPING TO SULFEROX PLANT (S-1128-116), SCRUBBED STEAM GENERATORS OR DOGGR APPROVED DISPOSAL WELLS: REMOVE REFERENCES TO SULFEROX H2S REMOVAL PLANT

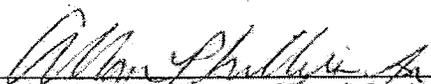
## CONDITIONS

1. The facility shall submit an application to modify the Title V permit in accordance with the timeframes and procedures of District Rule 2520. [District Rule 2520] Federally Enforceable Through Title V Permit
2. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102] Federally Enforceable Through Title V Permit
3. The following tanks shall be connected to vapor control system: S-1128-248, -250, -262, -263, -297, -298, -400, -401, -402, -404, -405, -406, -407, -411, -412, -935, -936, -938, -940, and -958. [District Rule 2201] Federally Enforceable Through Title V Permit
4. This tank shall only store, place, or hold organic liquid with a true vapor pressure (TVP) of less than 0.5 psia under all storage conditions. [District Rule 4623] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director / APCO

  
DAVID WARNER, Director of Permit Services

S-1128-248-40, Nov 3 2011 3:50PM -- LEONARDS Joint Inspector NOT Required

5. The tank shall be equipped with a vapor control system consisting of a closed vent system that collects all VOCs from the storage tank, and a VOC control device. The vapor control system shall be APCO-approved and maintained in gas-tight condition. The VOC control device shall be either of the following: a vapor return or condensation system that connects to a gas pipeline distribution system, or an approved VOC destruction device that reduces the inlet VOC emissions by at least 99% by weight as determined by the test method specified in Section 6.4.7. [District Rules 2201 and 4623] Federally Enforceable Through Title V Permit
6. Any tank gauging or sampling device on a tank vented to the vapor control system shall be equipped with a gas-tight cover which shall be closed at all times except during gauging or sampling. Gas-tight shall be defined as emitting no more than 10,000 ppm of methane measured at a distance of one centimeter from the potential source with an instrument calibrated with methane in accordance with EPA Method 21. Emissions in excess of this limit shall be considered a leak. [District Rule 2201] Federally Enforceable Through Title V Permit
7. All piping, valves and fittings shall be constructed and maintained in a gas-tight condition. Gas-tight shall be defined as emitting no more than 10,000 ppm of methane measured at a distance of one centimeter from the potential source with an instrument calibrated with methane in accordance with EPA Method 21. Emissions in excess of this limit shall be considered a leak. [District Rule 2201] Federally Enforceable Through Title V Permit
8. All piping, fittings, and valves on this tank shall be inspected annually by the facility operator in accordance with EPA Method 21, with the instrument calibrated with methane, to ensure compliance with the leaking provisions of this permit. [District Rule 2201] Federally Enforceable Through Title V Permit
9. All piping, fittings, and valves shall be inspected annually by the facility operator in accordance with EPA Method 21, with the instrument calibrated with methane, to ensure compliance with the provisions of this permit. If any of the tank components are found to leak during an annual inspection, the inspection frequency for that component type shall be changed from annual to quarterly. If no tank components are subsequently found to be leaking during five consecutive inspections, the inspection frequency may be changed from quarterly to annual. Components located in inaccessible (over 15 feet above ground when access is required from the ground or over 6 feet away from a platform when access is required from the platform) locations shall be inspected at least annually and components located in unsafe areas shall be inspected and repaired at the next process unit turnaround (the scheduled shutdown of a unit for maintenance and repair work). [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
10. Leaking tank components affixed to the tank or within five feet of the tank that have been discovered by the operator and that have been immediately tagged and repaired within the specified deadlines, shall not constitute a violation of this permit. However, leaking components discovered during inspections by District staff that were not previously identified and/or tagged by the operator, and/or any leaks that were not repaired within specified deadlines, shall constitute a violation of this permit. [District Rule 2201] Federally Enforceable Through Title V Permit
11. A facility operator, upon detection of a leaking component, shall affix to that component a weatherproof readily visible tag bearing the date on which the leak is detected. The tag shall remain in place until the leaking component is repaired, reinspected and found to be in compliance with the requirements of this rule. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
12. An operator shall reinspect a component for leaks within thirty working days after the date on which the component is repaired. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
13. Any component leak shall be repaired to a leak-free condition or vented to a flare satisfying the requirements of 40 CFR 60.18 or to a vapor control device that is at least 95 percent efficient as measured by EPA Method 25 within fifteen (15) calendar days of detection. The APCO may grant a ten (10) calendar day extension provided the operator demonstrates that necessary and sufficient actions are being taken to correct the leak within this time period. Any vapor control device, other than a flare, used to comply with this condition shall demonstrate at least 95% control efficiency as measured by EPA Method 25 at least annually. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
14. If the leaking component is an essential part of a critical process unit which cannot be immediately shut down for repairs, the operator shall 1) Minimize the leak within 15 calendar days; and 2) If the leak which has been minimized still exceeds the concentration allowed by this permit, the essential component shall be repaired 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. A critical process unit is any process unit which would result in the automatic shutdown of other process units if it were shut down. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

15. Operator shall maintain an inspection log containing the following 1) Type of component leaking; 2) Date of leak detection, and method of detection; 3) Date and emission level of recheck after leak is repaired; 4) Identification and location of essential parts of critical process units found leaking that cannot be repaired until the next process unit turnaround; and 5) Method used to minimize the leak from essential parts of critical process units which cannot be repaired until the next process unit turnaround. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
16. Control efficiency shall be determined by a comparison of controlled emissions to those emissions which would occur from a fixed or cone roof tank in the same product service without a vapor recovery system. Emissions shall be determined based on tank emission factors in EPA Publication AP-42, component counts for fugitive emissions sources, recognized emission factors for fugitive emission sources and the efficiency of any VOC destruction device. [District Rule 2201] Federally Enforceable Through Title V Permit
17. The efficiency of any VOC destruction device shall be measured by USEPA Method 18, 25, 25a, or 25b. [District Rule 2201] Federally Enforceable Through Title V Permit
18. The operator shall ensure that the vapor control system is functional and is operating as designed at all times. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
19. The operator of a fixed roof tank shall maintain all records of required monitoring data and support information for inspection at any time for a period of five years. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
20. Tank vapor control system includes heat exchanger(s), gas/liquid separator(s), gas eliminator, gas compressor(s), condensate pump(s), and gas piping to either TEOR permit S-1128-116 collection piping, scrubbed steam generators S-1128-3, -24, -25, -26, and -29 through -34, or DOGGR approved disposal well(s). [District Rule 2201] Federally Enforceable Through Title V Permit
21. VOC content of total hydrocarbons in gas processed by the vapor control system, upstream of compressors, shall not exceed 50% by weight. [District Rule 2201] Federally Enforceable Through Title V Permit
22. Fugitive VOC emission rate, calculated using the Oil and Gas Production Operations Average Emission Factors, U.S. EPA Protocol for Equipment Leak Emission Estimates, Table 2-4 (EPA-453/R-95-017) November 1995 from the total number of vapor components associated with tank and vapor control system shall not exceed 107.8 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit
23. Fugitive VOC limit listed above does not include components handling produced fluids with an API gravity less than 30 degrees, or components in water/oil service (condensate) with a water content equal to or greater than 50% by weight, or components handling fluid streams with a VOC content of 10% or less by weight. [District Rule 2201] Federally Enforceable Through Title V Permit
24. Records of VOC content of the hydrocarbons in the gas processed by vapor control system shall be kept at the facility and made readily available for compliance inspection upon request for a period of 5 years. [District Rule 1070] Federally Enforceable Through Title V Permit
25. VOC content of hydrocarbons in gas processed by vapor control system shall be determined using ASTM Method E168, E169, or E260 as applicable, or equivalent test method with prior District approval measured upon startup and annually thereafter. [District Rule 2201] Federally Enforceable Through Title V Permit
26. This permit authorizes tank cleaning that is not the result of breakdowns or poor maintenance as a routine maintenance activity. [District Rule 2080] Federally Enforceable Through Title V Permit
27. Permittee shall conduct tank cleaning and maintenance operations in accordance with District approved procedure as described in this permit. [District Rule 2080] Federally Enforceable Through Title V Permit
28. Tank may be disconnected from vapor control system during District approved cleaning and maintenance procedures as described in this permit. [District Rule 2010] Federally Enforceable Through Title V Permit
29. Permittee shall notify the District Compliance division at least 24 hours before tank cleaning and vapor control system disconnection and within 72 hours after restoring crude oil flow to the tank. [District Rule 2080] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

30. Prior to opening the tank to allow tank cleaning one of the following procedures must be followed: 1) operate the vapor recovery system for at least 24 hours after all the liquid in the tank has been drained, 2) displace vapors floating the oil pad off with water such that 90% of the tank volume is displaced, 3) vent the tank to the vapor control system until the vapor concentration is less than 10% of the lower explosive limit (LEL) or 5,000 ppmv whichever is less; or 4) vent the tank to the vapor control system for a length of time determined by the following relationship:  $t = 2.3 V / Q$ , where  $t$  = time,  $V$  = tank volume (cubic feet), and  $Q$  = flow rate to the vapor control system as determined using appropriate engineering calculations. [District Rule 2080] Federally Enforceable Through Title V Permit
31. The tank shall be cleaned using one of the following methods: water, hot water, solvents with an initial boiling point of greater than 302 F, solvents with a vapor pressure of less than 0.5 psia, or solvents with 50 grams VOC per liter or less. The tank sediment shall be used for road mix as allowed by Section 6.17 of District Rule 2020. [District Rule 2080] Federally Enforceable Through Title V Permit
32. Steam cleaning shall be allowed only during December through March, or at locations where wastewater treatment facilities are limited. [District Rule 2080] Federally Enforceable Through Title V Permit
33. Prior to reintroducing crude oil/water to the tank, the tank shall be filled to the maximum possible level with water, the tank vapor control system shall be reactivated and pressure/relief valves closed, and the liquid level shall be adjusted as necessary. [District Rule 2080] Federally Enforceable Through Title V Permit
34. Within 48 hours after refilling the tank with crude oil/water, the pressure relief valve seats and hatch seals shall be inspected for leaks using EPA method 21 and the regular tank maintenance and inspection program shall resume. [District Rule 2080] Federally Enforceable Through Title V Permit
35. Permittee shall maintain records of each period of cleaning and maintenance when the tank is disconnected or isolated from the vapor control system. Records shall include the date that tank cleaning was initiated, the date tank cleaning was completed, the method of tank cleaning used, and a description of internal and external tank repairs and maintenance performed. Such records shall be retained for a period of at least 5 years and shall be made available for District inspection upon request. [District Rule 2080] Federally Enforceable Through Title V Permit
36. ATC S-1128-116-61, '-128-20, '-130-19, '-144-14, & '-385-60 shall be implemented concurrently with this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit



# AUTHORITY TO CONSTRUCT

PERMIT NO: S-1128-385-60

ISSUANCE DATE: 11/03/2011

LEGAL OWNER OR OPERATOR: CHEVRON USA INC  
MAILING ADDRESS: P O BOX 1392  
BAKERSFIELD, CA 93302

LOCATION: HEAVY OIL WESTERN STATIONARY SOURCE  
KERN COUNTY

SECTION: 1 TOWNSHIP: 30S RANGE: 21E

**EQUIPMENT DESCRIPTION:**  
MODIFICATION OF THERMALLY ENHANCED OIL RECOVERY (TEOR) OPERATION WELL VENT VAPOR CONTROL SYSTEM #CC-1Y SERVING 570 STEAM ENHANCED WELLS INCLUDING HEAT EXCHANGERS, GAS/LIQUID SEPARATORS, COMPRESSORS, GAS FLOW AND TEMPERATURE INDICATORS, AUTOMATIC WELL TEST STATIONS, AND GAS PIPING TO SULFEROX PLANT S-1128-116, SCRUBBED STEAM GENERATORS, OR DOGGR APPROVED DISPOSAL WELL(S); REMOVE REFERENCES TO SULFEROX H2S REMOVAL PLANT

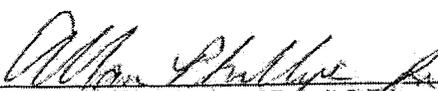
## CONDITIONS

1. The facility shall submit an application to modify the Title V permit in accordance with the timeframes and procedures of District Rule 2520. [District Rule 2520] Federally Enforceable Through Title V Permit
2. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
3. The crude oil production from wells associated with this permit unit shall not lie within 1000 feet of an air injection well used for in-situ combustion. [District Rule 4407, 2.0, 3.4, and 3.5] Federally Enforceable Through Title V Permit
4. The operation includes gauge vessel(s), heat exchanger(s), gas/liquid separator(s), condensate tank(s), vapor compressor(s), gas volume flow rate and temperature indicators, and gas piping to either TEOR permit S-1128-116 collection system, TEOR permit S-1128-130 collection system, scrubbed steam generators S-1128-3, '-24, '-25, '-26, and '-29 through '-34, or DOGGR approved disposal well(s). [District NSR Rule] Federally Enforceable Through Title V Permit
5. VOC content of hydrocarbons in gas processed shall not exceed 50% by weight. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director / APCO

  
DAVID WARNER, Director of Permit Services  
S-1128-385-60 Nov 3 2011 3:50PM - LEONARDS Joint Inspection NOT Required

6. Fugitive VOC emissions from components in vapor and condensate service shall not exceed 364 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit
7. Fugitive VOC limit listed above does not include components at the well-head up to the point of initial gas/liquid separation, or existing production handling or flow measurement facilities, or shown to be handling produced fluids with an API gravity less than 30 degrees or fluid streams containing more than 50% water (by weight) or with a VOC content of 10% (by weight) or less. [District Rule 2201] Federally Enforceable Through Title V Permit
8. Components to be screened and counted for determining compliance with fugitive VOC limit listed above shall be identified and categorized according to the appropriate fluid types (gas or water/oil) in Table 2-4 of the EPA's "1995 Protocol for Equipment Leak Emission Estimates" (EPA-453/R-95-017) and the following component types: valves, fittings, threaded connections, open-ended lines, pumps, compressors, pressure relief devices, pipes, flanges, process drains, sealing mechanisms, hatches, sight-glasses, meters, or seal fluid systems. [District Rule 2201] Federally Enforceable Through Title V Permit
9. All required source testing shall conform to the compliance testing procedures described in District Rule 1081 (as amended December 16, 1993). [District Rule 1081 and County Rules 108 (Kings), 108.1 (Fresno, Merced, San Joaquin, Tulare, Kern, and Stanislaus), and 110 (Madera)] Federally Enforceable Through Title V Permit
10. Permittee shall maintain with the permit a current listing of all steam enhanced wells connected to the casing vent control system and a copy of DOGGR approval of disposal well(s). [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
11. Permittee shall maintain for a period of five years, accurate daily records of volume of vapors handled, a list of all thermally enhanced production wells associated with this operation, accurate records of fugitive inspection component counts and leak inspection results, and make such records readily available for District inspection upon request. [District Rule 2201] Federally Enforceable Through Title V Permit
12. Permittee shall maintain with the permit accurate fugitive component counts of vapor and condensate handling equipment and resulting emissions calculated using the EPA "1995 Protocol for Equipment Leak Emission Estimates" (EPA-453/R-95-017), Oil and Gas Production Operations Average Emission Factors, Table 2-4. [District Rule 2201] Federally Enforceable Through Title V Permit
13. Permittee shall maintain a written record of VOC content of the gas (sampled not less than annually) and shall make such records available for District inspection upon request for a period of five years. [District Rule 2201] Federally Enforceable Through Title V Permit
14. Permittee shall keep steam-enhanced crude oil production wells operated with open vents connected to a VOC collection and control system. Steam-enhanced crude oil production wells operated with closed vents shall produce to front-line production equipment downstream of the wells that carry produced fluids (crude oil or mixture of crude oil and water) and are connected to a VOC collection and control system. The well vent may be temporarily opened during periods of attended service or repair of the well provided such activity is done as expeditiously as possible with minimal spillage of material and VOC emissions to the atmosphere. [District Rule 4401] Federally Enforceable Through Title V Permit
15. Permittee shall install and maintain an APCO-approved VOC collection and control system that is not open to the atmosphere and that is composed of hard-piping, ductwork connections and, if necessary, flow inducing devices that transport gas or vapor from a piece or pieces of equipment to an APCO-approved control device that has a VOC destruction or removal efficiency of at least 99%, or that transports gases or vapors back to a process system. [District Rules 2201 and 4401] Federally Enforceable Through Title V Permit
16. During the time any steam-enhanced crude oil production well is undergoing service or repair while the well is not producing, it shall be exempt from the requirements of District Rule 4401, (as amended December 14, 2006). [District Rule 4401] Federally Enforceable Through Title V Permit
17. The permittee shall not use any components that leak in excess of the applicable leak standards as specified in this permit. Components that have been found leaking in excess of the applicable leak standards of this rule may be used provided such leaking components have been identified with a tag for repair, are repaired, or are awaiting re-inspection after being repaired, within the applicable time period specified in this permit. [District Rule 4401] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

18. Permittee shall maintain a copy of the latest APCO-approved Operator Management Plan (OMP) at the facility and make it available to the APCO, ARB, and US EPA upon request. [District Rule 4401] Federally Enforceable Through Title V Permit
19. By January 30 of each year, permittee shall submit to the APCO for approval, in writing, an annual report indicating any changes to the existing, approved OMP. [District Rule 4401] Federally Enforceable Through Title V Permit
20. In accordance with the approved OMP, permittee shall meet all applicable operating, leak standards, inspection and re-inspection, leak repair, record keeping, and notification requirements of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
21. A gas leak is defined as the detection of a concentration of total organic compounds, above background (measured in accordance with EPA Method 21) that exceeds the following values: 1) A major gas leak is a detection of greater than 10,000 ppmv as methane; and 2) A minor gas leak is a detection of 400 to 10,000 ppmv as methane for pressure relief devices (PRDs) and 2,000 to 10,000 for components other than PRDs. [District Rule 4401] Federally Enforceable Through Title V Permit
22. A liquid leak is defined as the dripping of VOC-containing liquid. A major liquid leak is a visible mist or a continuous flow of liquid that is not seal lubricant. A minor liquid leak is a liquid leak that is not a major liquid leak and drips liquid at a rate of more than three drops per minute, except for seal lubricant. [District Rule 4401] Federally Enforceable Through Title V Permit
23. During District compliance inspection, the following conditions shall be used for determination of a violation: 1) Existence of an open-ended line or a valve located at the end of the line that is not sealed with a blind flange, plug, cap, or a second closed valve that is not closed at all times, except during attended operations requiring process fluid flow through the open-ended lines. Attended operations include draining or degassing operations, connection of temporary process equipment, sampling of process streams, emergency venting, and other normal operational needs, provided such operations are done as expeditiously as possible and with minimal spillage of material and VOC emissions to the atmosphere; 2) Existence of a component with a major liquid leak; 3) Existence of a component with a gas leak greater than 50,000 ppmv; or 4) Existence of a component leak consisting of a minor liquid or gas leak, or a gas leak greater than 10,000 ppmv up to 50,000 ppmv, in excess of the allowable number of leaks specified in Table 3 of Rule 4401 (as amended December 14, 2006). [District Rule 4401] Federally Enforceable Through Title V Permit
24. Permittee shall keep all hatches closed at all times except during sampling or adding of process material through the hatch, or during attended repair, replacement, or maintenance operations, provided such activities are done as expeditiously as possible with minimal spillage of material and VOC emissions to the atmosphere. [District Rule 4401] Federally Enforceable Through Title V Permit
25. Permittee shall visually inspect all pipes at least once every year. Any visual inspection of pipes that indicates a leak that cannot be immediately repaired to meet the leak standards of Rule 4401 shall be inspected within 24 hours after detecting the leak. If a leak is found, the leak shall be repaired as soon as practicable but not later than the time frame specified in Table 4 of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
26. Permittee shall inspect all unsafe-to-monitor components during each turnaround. [District Rule 4401] Federally Enforceable Through Title V Permit
27. Permittee shall inspect audio-visually (by hearing and by sight) for leaks all accessible operating pumps, compressors, and pressure relief devices (PRDs) in service at least once each calendar week. [District Rule 4401] Federally Enforceable Through Title V Permit
28. Any audio-visual inspection of an accessible operating pump, compressor, and PRD performed by an operator that indicates a leak that cannot be immediately repaired to meet the leak standards of Rule 4401 shall be inspected not later than 24 hours after conducting the audio-visual inspection. If a leak is found, the leak shall be repaired as soon as practicable but not later than the time frame specified in Table 4 of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
29. Permittee shall initially inspect a PRD that releases to the atmosphere as soon as practicable but not later than 24 hours after the discovery of the release. Permittee shall re-inspect the PRD not earlier than 24 hours after the initial inspection but not later than 15 calendar days after the initial inspection. [District Rule 4401] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

30. Permittee shall inspect all new, replaced, or repaired fittings, flanges, and threaded connections within 72 hours of placing the component in service. [District Rule 4401] Federally Enforceable Through Title V Permit
31. Except for PRDs, permittee shall inspect a component that has been repaired or replaced not later than 15 calendar days after the component was repaired or replaced. [District Rule 4401] Federally Enforceable Through Title V Permit
32. Permittee shall affix a readily visible weatherproof tag to a leaking component upon detection of the leak. The following information shall be included on the tag: 1) the date and time of leak detection; 2) the date and time of leak measurement; 3) leak concentration in ppmv for a gaseous leak; 4) description of whether it is a major liquid leak or a minor liquid leak; and 5) whether the component is an essential component, an unsafe-to-monitor component, or a critical component. [District Rule 4401] Federally Enforceable Through Title V Permit
33. Permittee shall keep the tag affixed to the component until all of the following conditions have been met: 1) the leaking component has been repaired or replaced, and 2) the component has been re-inspected using the test methods described in this permit; and 3) the component is found to be in compliance with the requirements of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
34. Permittee shall minimize a component leak in order to stop or reduce leakage to the atmosphere immediately to the extent possible, but not later than one (1) hour after detection of the leak. [District Rule 4401] Federally Enforceable Through Title V Permit
35. Except for leaking critical components or leaking essential components, if the operator has minimized a leak but the leak still exceeds the applicable leak limits, the operator shall comply with at least one of the following requirements as soon as practicable but not later than the time period specified in Table 4 of Rule 4401: 1) repair or replace the leaking component; 2) vent the leaking component to a VOC collection and control system; or 3) remove the leaking component from operation. [District Rule 4401] Federally Enforceable Through Title V Permit
36. The leak rate, measured after leak minimization has been performed, shall be used to determine the applicable repair period specified in Table 4 of Rule 4401 and the time of initial leak detection shall be the start of the repair period specified in Table 4 of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
37. If the leaking component is an essential component or a critical component that cannot be immediately shut down for repairs, and if the leak has been minimized but the leak still exceeds the applicable leak standard of this rule, the operator shall repair or replace the essential component or critical component to eliminate the leak during the next process unit turnaround, but in no case later than one year from the date of the original leak detection, whichever comes earlier. [District Rule 4401] Federally Enforceable Through Title V Permit
38. Permittee shall maintain an inspection log in which, at a minimum, all of the following information shall be recorded for each inspection performed: 1) The total number of components inspected, and the total number and percentage of leaking components found by component type; 2) The location, type, and name or description of each leaking component and description of any unit where the leaking component is found; 3) The date of leak detection and the method of leak detection; 4) For gaseous leaks, the leak concentration in ppmv, and for liquid leaks record whether the leak is a major liquid leak or a minor liquid leak; 5) The date of repair, replacement, or removal from operation of leaking components; 6) The identify and location of essential components and critical components found leaking that cannot be repaired until the next process unit turnaround or not later than one year after leak detection, whichever comes earlier; 7) The methods used to minimize the leak from essential components and critical components found leaking that cannot be repaired until the next process unit turnaround or not later than one year after leak detection, whichever comes earlier; 8) The date of re-inspection and the leak concentration in ppmv after the component is repaired or is replaced; 9) The inspector's name, business mailing address, and business telephone number; and 10) The date and signature of the facility operator responsible for the inspection and repair program certifying the accuracy of the information recorded in the log. [District Rule 4401] Federally Enforceable Through Title V Permit
39. Permittee shall perform leak inspections at least annually, using a portable hydrocarbon detection instrument in accordance with USEPA Method 21. Where safety is a concern, such as measuring leaks from compressor seals or pump seals when the shaft is rotating, a person shall measure leaks by placing the instrument probe inlet at a distance of one centimeter or less from the surface of the component interface. [District Rule 4401] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

40. The inspection and re-inspection requirements of Rule 4401, Sections 5.8.1 through 5.8.5, do not apply to components exclusively handling gas/vapor or liquid with a VOC content of ten percent or less ( 10 wt. %) as determined using ASTM Method D1945 for gases and SCAQMD Method 304-91, or the latest revision of ASTM Methods E168, E169 or E260, for liquids. [District Rule 4401] Federally Enforceable Through Title V Permit
41. Annual control efficiency compliance tests shall be performed by source testers certified by the California Air Resource Board (CARB) on all vapor collection and control systems used to control emissions from steam-enhanced crude oil production wells. Testing shall be performed during June, July, August, or September of each year if the system's control efficiency is dependent upon ambient air temperature. The APCO may waive these source testing requirements if the vapor control system does not exhaust to atmosphere, or if all uncondensed VOC emissions collected by the vapor collection and control system are incinerated in fuel burning equipment, an internal combustion engine, or in a smokeless flare. [District Rule 4401] Federally Enforceable Through Title V Permit
42. The control efficiency of any VOC control device, measured and calculated as carbon, shall be determined by EPA Method 25, except when the outlet concentration must be below 50 ppm in order to meet the standard, in which case EPA Method 25a may be used. EPA Method 18 may be used in lieu of EPA Method 25 or EPA Method 25a provided the identity and approximate concentrations of the analytes/compounds in the sample gas stream are known before analysis with the gas chromatograph and the gas chromatograph is calibrated for each of those known analyte/compound to ensure that the VOC concentrations are neither under- or over-reported. [District Rule 4401] Federally Enforceable Through Title V Permit
43. VOC content shall be determined using ASTM Method E168-67, E169-63, or E260-73 as applicable. Halogenated exempt compounds shall be determined by ARB Method 422. [District Rule 4401] Federally Enforceable Through Title V Permit
44. VOC content by weight percent (wt.%) shall be determined using American Society of Testing and Materials (ASTM) D1945 for gases and South Coast Air Quality Management District (SCAQMD) Method 304-91 or the latest revision of ASTM Method E168, E169 or E260 for liquids. [District Rule 4401] Federally Enforceable Through Title V Permit
45. Permittee shall maintain a current listing of wells with a packer installed and include the label "Packer" on wells with packers. Wells with a packer are not subject to VOC emissions checks and are not open-ended lines under Rule 4401. [District Rules 2201 and 4401] Federally Enforceable Through Title V Permit
46. The requirements of Rule 4401 do not apply to components serving the produced fluid line. [District Rule 4401] Federally Enforceable Through Title V Permit
47. Except for the requirements of Sections 6.1, 6.6.6, and 7.2 of Rule 4401, the requirements of Rule 4401 shall not apply to the following components: pressure relief devices, pumps, and compressors that are enclosed and whose emissions are controlled with an operating VOC collection and control system, components buried below ground, components used exclusively in vacuum service, and one-half inch nominal or less stainless steel tube fittings which have been demonstrated to the APCO to be leak-free based on initial inspection using EPA Test Method 21. [District Rule 4401] Federally Enforceable Through Title V Permit
48. Permittee shall establish and implement an employee training program for inspecting and repairing components and recordkeeping procedures, as necessary. Permittee shall maintain at the facility the copies of the training records of the training program. [District Rule 4401] Federally Enforceable Through Title V Permit
49. Unless waived by the District, permittee shall maintain source test records which show that the control efficiency requirements of the VOC collection and control system have been satisfied. [District Rule 4401] Federally Enforceable Through Title V Permit
50. Permittee shall maintain monitoring records of the date and well identification where steam injection or well stimulation occurs. [District Rule 4401] Federally Enforceable Through Title V Permit
51. Records shall be maintained of each calibration of the portable hydrocarbon detection instrument utilized for inspecting components. The records shall include a copy of the current calibration gas certification from the vendor of the calibration gas cylinder, the date of calibration, the concentration of calibration gas, the instrument reading of calibration gas before adjustment, the instrument reading of calibration gas after adjustment, the calibration gas expiration date, and the calibration gas cylinder pressure at the time of calibration. [District Rule 4401] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

52. All records required by this permit shall be maintained and retained on-site for a minimum of five (5) years and made available for District, ARB, and EPA inspection upon request. [District Rule 4401] Federally Enforceable Through Title V Permit
53. ATC S-1128-116-61, '-128-20, '-130-19, '-144-14, & '-248-40 shall be implemented concurrently with this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit

Chevron USA, Inc.  
S-1128; S1120248

# **ATTACHMENT C**

Emissions Increases

Chevron USA, Inc.  
S-1128; S1120248

	SSIPE (lb/yr)				
	NOx	SOx	PM10	CO	VOC
S-1128-116-61	0	0	0	0	0
S-1128-128-20	0	0	0	0	0
S-1128-130-19	0	0	0	0	0
S-1128-144-14	0	0	0	0	0
S-1128-248-40	0	0	0	0	0
S-1128-385-60	0	0	0	0	0
<b>TOTAL</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

Chevron USA, Inc.  
S-1128; S1120248

# **ATTACHMENT D**

Application



**Jason Donchin**  
Health, Environment, and  
Safety Manager

**San Joaquin Valley SBU**  
Chevron North America  
Exploration and Production  
P.O. Box 1392  
Bakersfield, CA 93302

**HAND-DELIVERED**  
Via Southern Region

January 25, 2012

Mr. James Swaney  
Permit Services Manager  
San Joaquin Valley Air Pollution Control District  
1990 E. Gettysburg Ave.  
Fresno, CA 93726-0244

RECEIVED

JAN 26 2012

SJVAPCD  
Southern Region

**RE: Title V Minor Modification – Implement Authorities to Construct (ATC)  
S-1128-116-61, -128-20, -130-19, -144-14, -248-40, & -385-60  
Cymric Oilfield, Heavy Oil Western Stationary Source**

Dear Mr. Swaney:

With this letter, Chevron U.S.A. Inc. (CUSA) is submitting a Minor Modification application to implement ATCs S-1128-116-61, -128-20, -130-19, -144-14, -248-40, and -385-60 in accordance with Section 6.2 of Rule 2520.

Attached are the following forms and documents:

- Application for Title V Modification (TVFORM-008)
- Title V Compliance Certification (TVFORM-009)
- Copy of the referenced ATCs

Please process the attached application to convert the subject ATCs to Permits to Operate. Chevron requests that ATC S-1128-116-61 be implemented concurrently with ATC S-1128-116-60, for which an Administrative Amendment application was submitted separately.

If you have any questions or require additional information, please contact Mr. Dave Bone of my staff at (661) 654-7150.

Sincerely,

Jason Donchin  
Attachments  
kdb/

**ATTACHMENT A**

**TITLE V MINOR MODIFICATION APPLICATION**

# San Joaquin Valley Air Pollution Control District

www.valleyair.org

**RECEIVED**

**JAN 26 2012**

**SJVAPCD  
Southern Region**

## Permit Application For:

[ ] ADMINISTRATIVE AMENDMENT    [X] MINOR MODIFICATION    [ ] SIGNIFICANT MODIFICATION

1. PERMIT TO BE ISSUED TO: <b>Chevron U.S.A. Inc. (CUSA)</b>					
2. MAILING ADDRESS:					
STREET/P.O. BOX: <b>PO Box 1392</b>					
CITY: <b>Bakersfield</b>		STATE: <b>CA</b>	9-DIGIT ZIP CODE: <b>93302</b>		
3. LOCATION WHERE THE EQUIPMENT WILL BE OPERATED:				INSTALLATION DATE:	
STREET: <b>Heavy Oil Western Source – Cymric</b>				<b>January 25, 2012</b>	
CITY: _____					
Permit Units:	116, 130	128, 248	385		144
Section:	36W	31X	1Y		5Z
Township/Range:	29S/R21E	29S/R22E	30S/21E	30S/22E	
4. GENERAL NATURE OF BUSINESS: <b>Oil and gas production</b>					
5. DESCRIPTION OF EQUIPMENT OR MODIFICATION FOR WHICH APPLICATION IS MADE (include Permit #'s if known, and use additional sheets if necessary)					
<b>Implement ATCs S-1128-116-61, -128-20, -144-14, -248-40, and -385-60 issued pursuant to Project #S-1113693.</b>					
6. TYPE OR PRINT NAME OF APPLICANT:			TITLE OF APPLICANT:		
<b>Jason Donchin</b>			<b>SJVBU HES Manager</b>		
7. SIGNATURE OF APPLICANT:		DATE:	PHONE: (661) 654-7150		
		<b>January 25, 2012</b>	FAX: (661) 654-7004		
			EMAIL: dbone@chevron.com		

**For APCD Use Only:**

DATE STAMP	FILING FEE RECEIVED: \$ _____ CHECK#: _____  DATE PAID: _____  PROJECT NO: <b>S-1120248</b> FACILITY ID: <b>S-1128</b>
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*Title V - Minor Mod*

**ATTACHMENT B**  
**TITLE V CERTIFICATION**



**ATTACHMENT C**  
**COPY OF REFERENCED ATCs**

# **ATTACHMENT E**

Previous Title V Operating Permit Units

S-1128-116-60, '-128-17, '-130-16, '-144-10,  
'-248-33, and '385-39

# San Joaquin Valley Air Pollution Control District

**PERMIT UNIT:** S-1128-116-60

**EXPIRATION DATE:** 02/29/2016

**SECTION:** 36 **TOWNSHIP:** 29S **RANGE:** 21E

**EQUIPMENT DESCRIPTION:**

THERMALLY ENHANCED OIL RECOVERY (TEOR) OPERATION WELL VENT VAPOR CONTROL SYSTEM #CC-36W #1 SERVING 146 STEAM ENHANCED WELLS INCLUDING SIX AUTOMATIC WELL TEST STATIONS AND GAS PIPING TO SULFEROX H<sub>2</sub>S REMOVAL PLANT, SCRUBBED STEAM GENERATORS, SEPARATOR VESSEL FV-3A, DOGGR APPROVED DISPOSAL WELL(S), OR SHARED KALDAIR EMERGENCY FLARE (FLARE SHARED WITH S-1128-128, S-1128-130, S-1128-144, S-1128-248, AND S-1128-383) & 460 MMBTU/HR JOHN ZINK MODEL #EEF-LHLS-24 AIR ASSISTED EMERGENCY FLARE

## PERMIT UNIT REQUIREMENTS

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1. No modification to the 1Y Kaldair emergency flare shall be performed without an Authority to Construct for such modifications, except for changes specified in the conditions below. [District Rule 2010] Federally Enforceable Through Title V Permit
2. Upon seven days prior written notice to the District, the 1Y Kaldair emergency flare may be designated as a dormant emissions unit or an active emissions unit. [District Rule 4311] Federally Enforceable Through Title V Permit
3. When the 1Y Kaldair emergency flare is designated as a dormant emissions unit, the fuel line shall be physically disconnected from the unit. [District Rule 2080] Federally Enforceable Through Title V Permit
4. When the 1Y Kaldair emergency flare is designated as a dormant emissions unit, the permittee shall not be required to perform the monitoring and recordkeeping requirements otherwise required by this permit and Rule 4311. [District Rule 4311] Federally Enforceable Through Title V Permit
5. Upon recommencing operation of the 1Y Kaldair emergency flare, recordkeeping and monitoring requirements otherwise required by this permit and Rule 4311 shall resume. [District Rule 4311] Federally Enforceable Through Title V Permit
6. Records of all dates and times that this unit is designated as dormant or active shall be maintained for a period of at least five years and made available for District inspection upon request. [District Rule 1070]
7. If the 1Y Kaldair emergency flare has become dormant because it does not comply with District Rules, or if the unit becomes out of compliance with District Rules while it is dormant, operation of the unit is not authorized until an Authority to Construct permit is issued approving all necessary retrofits and permit changes required to comply with the respective District Rules. [District Rule 2010] Federally Enforceable Through Title V Permit
8. The Kaldair flare shall not discharge air contaminants into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is dark or darker than Ringelmann 1 or equivalent to 20% opacity. [District Rule 2201] Federally Enforceable Through Title V Permit
9. The air-assisted John Zink flare shall not discharge air contaminants into the atmosphere which exceeds 5% opacity or Ringelmann 1/4 for a period or periods aggregating more than three minutes in any one hour. [District Rule 2201] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

10. Operation of flares for other than maintenance and testing shall be limited to unforeseen electrical power outages or emergencies (as defined below) that results in the inability to dispose of the vapors in devices approved for that purpose. Emergency is defined as an unforeseeable failure or malfunction of operating equipment that 1) is not due to neglect or disregard of air pollution laws or rules; 2) is not intentional or the result of negligence; 3) is not due to improper maintenance; 4) does not constitute a nuisance; and 5) results in the use of equipment exempted from offsets by Rule 2201 to prevent or ameliorate an unsafe situation. [District Rule 2201] Federally Enforceable Through Title V Permit
11. The owner or operator shall notify the District of any emergency use of the flare within twenty four hours after confirmation that an actual flaring event has occurred. In the event that confirmation of an actual flaring event cannot be made, then the owner or operator shall notify the District no more than 24 hours after an alarm indicates that a flaring event may have occurred. [District Rule 1070 and 4311] Federally Enforceable Through Title V Permit
12. The permittee shall report to the District in writing within ten days following the emergency use of the flare(s). The report shall include 1) a statement that the failure or malfunction has been corrected, the date corrected, and proof of correction; 2) a specific statement of the reason or cause for the occurrence; 3) a description of the corrective measures undertaken and/or to be undertaken to avoid such an occurrence in the future; and 4) an estimate of the emissions caused by the emergency use, specifically including duration of flare operation and amount of gas burned. [District Rules 1070 and 4311] Federally Enforceable Through Title V Permit
13. Operation of each flare shall not exceed 200 hours per year for purposes of flare maintenance and testing. [District Rule 2201] Federally Enforceable Through Title V Permit
14. Kaldair flare, for purposes of flare maintenance and testing, emissions rates shall not exceed any of the following: 0.068 lb NO<sub>x</sub>/MMBtu (2442 lb NO<sub>x</sub>/year), 322,538 lb SO<sub>x</sub>/year, 0.708 lb PM<sub>10</sub>/MMBtu (24,190 lb PM<sub>10</sub>/year), 0.063 lb VOC/MMBtu (2263 lb VOC/year) and 0.37 lb CO/MMBtu (13,290 lb CO/year). [District Rule 2201] Federally Enforceable Through Title V Permit
15. John Zink flare, for purposes of flare maintenance and testing, emissions rates shall not exceed any of the following: 0.068 lb NO<sub>x</sub>/MMBtu (672 lb NO<sub>x</sub>/year), 20,000 lb SO<sub>x</sub>/year, 0.708 lb PM<sub>10</sub>/MMBtu (3894 lb PM<sub>10</sub>/year), 0.063 lb VOC/MMBtu (622 lb VOC/year) and 0.37 lb CO/MMBtu (3656 lb CO/year). [District Rule 2201] Federally Enforceable Through Title V Permit
16. Sulfur compound combustion emissions shall not exceed 2000 ppmv as SO<sub>2</sub>. [District Rule 4801; Kern County Rule 407] Federally Enforceable Through Title V Permit
17. A 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
18. Flare 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
19. Each emergency flare shall be equipped with a functional continuous flame detection device to detect at least one pilot flame or to detect the presence of flare flame. [District Rule 4311, 5.4] Federally Enforceable Through Title V Permit
20. Fugitive VOC emission rate from fugitive component counts of the TEOR vapor control system, calculated using U.S. EPA publication 453/R-95-017, Table 2-4, based on 50% VOC by weight of Total Organic Content (TOC), shall not exceed 268.3 lb/day. [District Rule 2210] Federally Enforceable Through Title V Permit
21. Fugitive VOC limit listed above does not include components handling produced fluids with an API gravity less than 30 degrees, or components in water/oil service (condensate) with a water content equal to or greater than 50% by weight, or components handling fluid streams with a VOC content of 10% or less by weight. [District Rule 2201] Federally Enforceable Through Title V Permit
22. The source shall perform annual leak inspections on at least 20% of the components in the well vent vapor control system using a portable hydrocarbon detection instrument in accordance with USEPA Method 21. [District Rules 2520, 9.4.2 and 4401, 6.3.3] Federally Enforceable Through Title V Permit

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

23. Permittee shall maintain an accurate fugitive component count and resultant emissions calculated using emission factors from EPA Publication 453/R-95-017 Protocol for Equipment Leak Emission Estimates Table 2-4 Oil and Gas Production Operations Average Emission Factors (kg/hr/source). [District Rule 2201] Federally Enforceable Through Title V Permit
24. Operator shall conduct quarterly gas sampling from Sample Point No. 1 (inlet) to SulFerox plant and Sample Point No. 2 (discharge) from SulFerox plant to qualify for exemption from fugitive component counts for components handling fluids with less than 10% VOC by weight. If gas samples are less than 10% VOC by weight for 8 consecutive quarterly samplings, sampling frequency shall only be required annually. Such sampling is deemed representative of all components downstream of vessel FV1. Sample Point No. 1 (inlet) is downstream of vessel FV1 and upstream of the SulFerox plant and representative of gas downstream that has not been processed through the SulFerox plant. Sample Point No. 2 (discharge) represents gas that has been processed through the SulFerox plant. [District Rule 2201] Federally Enforceable Through Title V Permit
25. If operator determines that the flow back system does not operate successfully, then the flow back system may be idled and/or removed. [District Rule 2201] Federally Enforceable Through Title V Permit
26. Existing Tulare injection wells are authorized to operate as either flow back wells or injection wells until such a time as the DOGGR injection permit for the existing Tulare injection wells is terminated. Upon termination of the Tulare injection well permit by DOGGR, the existing Tulare injection wells will continue to operate as flow back wells only or be idled and/or removed. [District Rule 2201] Federally Enforceable Through Title V Permit
27. The crude oil production from wells associated with this permit unit shall not lie within 1000 feet of an air injection well used for in-situ combustion. [District Rule 4407, 2.0, 3.4, and 3.5] Federally Enforceable Through Title V Permit
28. All required source testing shall conform to the compliance testing procedures described in District Rule 1081(as amended December 16, 1993). [District Rule 1081 and County Rules 108 (Kings), 108.1 (Fresno, Merced, San Joaquin, Tulare, Kern, and Stanislaus), and 110 (Madera)] Federally Enforceable Through Title V Permit
29. During the time any steam-enhanced crude oil production well is undergoing service or repair while the well is not producing, it shall be exempt from the emission control requirements of District Rule 4401, 5.0 (as amended December 14, 2006). [District Rule 4401, 4.1] Federally Enforceable Through Title V Permit
30. The uncontrolled VOC emissions from any well vent shall be reduced by at least 99 percent by weight or, if several steam-enhanced crude oil production well vents are connected to a vapor collection and control system, total uncontrolled VOC emissions shall be reduced by at least 99 percent. This requirement does not apply to cyclic wells located on contiguous and adjacent oil production properties with less than 10 cyclic wells owned by or under the control of a company. [District Rule 4401, 5.1 and 5.2] Federally Enforceable Through Title V Permit
31. Total number of leaks from the well vent vapor control system, including condensate handling, shall not exceed the number of allowable leaks allowed by Rule 4401 at any one time. [District Rule 4401, 5.3] Federally Enforceable Through Title V Permit
32. Units consisting of more than 500 wells shall not exceed one leak detected for each 20 wells tested with a minimum of 50 wells tested. [District Rule 4401, 5.3] Federally Enforceable Through Title V Permit
33. Operator shall affix a readily visible tag bearing the date on which a leak is detected. The tag shall remain in place until the leaking component is repaired. [District Rule 4401, 5.3.1] Federally Enforceable Through Title V Permit
34. Operator shall repair each leak within 15 calendar days of detection. The APCO may grant a 10 calendar day extension if the operator demonstrates that the necessary and sufficient actions have and are being taken to correct the leak. [District Rule 4401, 5.3.1] Federally Enforceable Through Title V Permit
35. Operator shall maintain all components of a well vent vapor collection and control system in good repair. Components of the well vent vapor collection and control system shall include all piping, valves, fittings, pumps, compressors, tanks, etc. used to collect, control, store, or dispose of VOC condensate or non-condensable VOCs and which is prior to any blending of VOC condensate with crude oil or blending of non-condensable VOCs with gases to be used as a fuel. [District Rule 4401, 5.3 and 5.3.2] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

36. All records of required monitoring data and support information shall be maintained, retained for a period of at least five years and shall be made readily available for District inspection upon request. [District Rules 2520, 9.4.2 and 4401, 6.1] Federally Enforceable Through Title V Permit
37. The operator shall maintain monitoring records of the date and well identification where steam injection or well stimulation occurs. [District Rule 4401, 6.1.1] Federally Enforceable Through Title V Permit
38. Annual control efficiency compliance tests shall be performed on all vapor collection and control systems used to control emissions from steam-enhanced crude oil production wells. Testing shall be performed by source testers certified by the California Air Resources Board (CARB) during June, July, August or September of each year if the system's control efficiency is dependent upon ambient air temperature. The APCO may waive the annual testing requirements of this condition if the vapor control system does not exhaust to atmosphere or if all uncondensed VOC emissions collected by a vapor collection and control system are incinerated in fuel burning equipment, an internal combustion engine or in a smokeless open flare, and the source's Operating Permit contains adequate periodic monitoring to ensure the source meets 99% control efficiency. [District Rule 4401, 5.1, 5.2 and 6.2.1] Federally Enforceable Through Title V Permit
39. Well casing vents or downstream valves may be closed if wells are producing to tanks equipped with an operating vapor control system or if the wells are idle [District Rule 4401] Federally Enforceable Through Title V Permit
40. The control efficiency of the vapor collection and control system used to control VOC emissions from steam enhanced crude oil production well shall be determined by mass balance based on most stringent of a source test, USEPA approved emission factors, or Air Pollution (AP)-42 emission factors for components and number of components; and the efficiency of destruction devices determined by USEPA Method 18, 25, 25a, or 25b as applicable. [District Rule 4401, 6.3.1] Federally Enforceable Through Title V Permit
41. Leak inspection and measurements of gaseous leak concentrations shall be conducted according to EPA Method 21 using an appropriate portable hydrocarbon detection instrument calibrated with methane. The instrument shall be calibrated in accordance with the procedures specified in EPA Method 21 or the manufacturer's instruction, as appropriate, not more than 30 days prior to its use. The operator shall record the calibration date of the instrument. Where safety is a concern, such as measuring leaks from compressor seals or pump seals when the shaft is rotating, a person shall measure leaks by placing the instrument probe inlet at a distance of one (1) centimeter or less from the surface of the component interface. [District Rule 4401, 6.3.3] Federally Enforceable Through Title V Permit
42. The VOC content by weight percent (wt.%) shall be determined using American Society of Testing and Materials (ASTM) D1945 for gases and South Coast Air Quality Management District (SCAQMD) Method 304-91 or the latest revision of ASTM Method E168, E169 or E260 for liquids. [District Rule 4401, 6.3.5] Federally Enforceable Through Title V Permit
43. Unless waived by the District, the operator shall maintain source test records which show that the control efficiency requirements have been satisfied. [District Rule 4401, 6.1.3] Federally Enforceable Through Title V Permit
44. Compliance with permit conditions in the Title V permit shall be deemed in compliance with SJVUAPCD Rule 4401 (Amended January 15, 1998), excluding sections 5.1 and 5.2 for control systems which have been waived from complying with the requirement of section 6.2.1. A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
45. The requirements of SJVUAPCD Rule 4407 (Adopted May 19, 1994) do not apply to this permit unit. A permit shield is granted from this requirement. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
46. The operation includes heat exchanger(s), gas/liquid separator(s), condensate tank(s), compressor(s), gas volume flow rate and temperature indicator, and gas piping to SulFerox plant. [District NSR Rule] Federally Enforceable Through Title V Permit
47. The system includes gas piping from vapor control systems 36W #1 TEOR S-1128-116, 31X TEOR S-1128-128, 36W #2 TEOR S-1128-130, 5Z/6Z TEOR S-1128-144, 31X tank battery S-1128-248, Mckittrick Diatomite TEOR S-1129-864, and 1Y TEOR S-1128-385, TEOR flow back vapor collection from Tulare formation wells (previously used for disposal), and sweetened gas from SulFerox plant. [District NSR Rule] Federally Enforceable Through Title V Permit

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

48. John Zink flare field sour gas line shall be equipped with an operational flow meter. John Zink flare pilot gas line shall be equipped with an operational flow meter and pilot gas flow rate shall not exceed 12000 scf/day. [District Rule 2201] Federally Enforceable Through Title V Permit
49. Kaldair flare pilot gas line shall be equipped with an operational flow meter, except when designated a DEU, and pilot gas flow rate shall not exceed 4800 scf/day. [District Rule 2201] Federally Enforceable Through Title V Permit
50. Only PUC quality natural gas shall be used as pilot gas in the flare. [District NSR Rule] Federally Enforceable Through Title V Permit
51. When operated, each 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
52. SulFerox plant includes sparge tower, gas/liquid separator(s), chemical regenerator vessel(s), chemical tank(s), sulfur press, sulfur bin(s), sweet gas outlet separator(s), particulate filter(s), and sweet gas piping to field gas system and DOGGR approved disposal wells. [District Rule 2201] Federally Enforceable Through Title V Permit
53. SulFerox offgas H<sub>2</sub>S content shall not exceed 12 ppmv. [District Rule 2201] Federally Enforceable Through Title V Permit
54. Permittee shall measure the H<sub>2</sub>S content of the SulFerox plant's inlet gas stream at least once per day using a gas detection tube. [District Rule 2201] Federally Enforceable Through Title V Permit
55. Permittee shall measure the H<sub>2</sub>S content of the SulFerox plant's outlet gas stream at least once every 6 hours using a gas detection tube or operational H<sub>2</sub>S analyzer/monitor. Permittee shall maintain records of the outlet gas stream H<sub>2</sub>S content (ppmv). [District Rule 2201] Federally Enforceable Through Title V Permit
56. If the H<sub>2</sub>S content of the SulFerox plant's outlet gas stream is measured at 6 ppmv or higher using gas detection tubes, the permittee shall measure the H<sub>2</sub>S content once every 2 hours using gas detection tubes until the measured content drops below 6 ppmv, whereafter the measuring frequency will revert to every 6 hours. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
57. Gas detection tubes used to measure outlet and inlet H<sub>2</sub>S content shall have calibrated ranges between 1.5 and 30 ppmv for the outlet and 1,000 and 20,000 ppmv for the inlet when H<sub>2</sub>S concentration is below 20,000 ppmv and 2,000 and 40,000 ppmv for the inlet when H<sub>2</sub>S concentration equals or is above 20,000 ppmv. [District Rule 2201] Federally Enforceable Through Title V Permit
58. Permittee shall measure and maintain a daily record of flare pilot gas volumes, John Zink flare field sour gas volume, and shall maintain an annual record of the number of hours of operation of each flare. [District Rule 2201] Federally Enforceable Through Title V Permit
59. With prior District approval, record keeping frequency of treated gas H<sub>2</sub>S content may be reduced upon demonstration of consistency of SulFerox process. [District Rule 2201] Federally Enforceable Through Title V Permit
60. Permittee shall maintain with the permit a current listing of all steam enhanced wells connected to the casing vent control system and a copy of DOGGR approval of disposal well(s), and shall make such listings readily available for District inspection upon request. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
61. All records of required monitoring data and support information required by this permit shall be retained for a period of at least five years and shall be made available for District inspection upon request. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

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

# San Joaquin Valley Air Pollution Control District

PERMIT UNIT: S-1128-128-17

EXPIRATION DATE: 02/29/2016

SECTION: 31 TOWNSHIP: 29S RANGE: 22E

## EQUIPMENT DESCRIPTION:

THERMALLY ENHANCED OIL RECOVERY (TEOR) OPERATION WELL VENT VAPOR CONTROL SYSTEM #CC-31X SERVING 60 STEAM-ENHANCED WELLS, INCLUDING HEAT EXCHANGER(S), GAS/LIQUID SEPARATOR(S), VAPOR COMPRESSOR(S), AND PIPING TO SULFEROX PLANT (S-1128-116), SCRUBBED SG'S OR DOGGR APPROVED DISPOSAL WELL(S)

## PERMIT UNIT REQUIREMENTS

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1. The crude oil production from wells associated with this permit unit shall not lie within 1000 feet of an air injection well used for in-situ combustion. [District Rule 4407, 2.0, 3.4, and 3.5] Federally Enforceable Through Title V Permit
2. All required source testing shall conform to the compliance testing procedures described in District Rule 1081(as amended December 16, 1993). [District Rule 1081] Federally Enforceable Through Title V Permit
3. The operation includes piping from pipeline vent pots 4, 5, and 6, heat exchanger(s), gas/liquid separator(s), gas/liquid separator S-1128-950, vapor compressor(s), and gas piping to either TEOR operation S-1128-116, scrubbed steam generators S-1128-3, '-24, '-25, '-26, and '-29 through '-34, or DOGGR approved disposal well(s). [District NSR Rule] Federally Enforceable Through Title V Permit
4. VOC emission rate shall not exceed 165.4 lb/day. [District NSR Rule] Federally Enforceable Through Title V Permit
5. Permittee shall maintain with the permit a current listing of all steam enhanced wells connected to the casing vent control system and shall make such listing readily available for District inspection upon request. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
6. Permittee shall maintain with the permit a copy of DOGGR approval for each disposal well used for Rule 4401 compliance. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
7. A gas leak is defined as the detection of a concentration of total organic compounds, above background (measured in accordance with EPA Method 21) that exceeds the following values: 1) A major gas leak is a detection of greater than 10,000 ppmv as methane; and 2) A minor gas leak is a detection of 400 to 10,000 ppmv as methane for pressure relief devices (PRDs) and 2,000 to 10,000 for components other than PRDs. [District Rule 4401] Federally Enforceable Through Title V Permit
8. A liquid leak is defined as the dripping of VOC-containing liquid. A major liquid leak is a visible mist or a continuous flow of liquid that is not seal lubricant. A minor liquid leak is a liquid leak that is not a major liquid leak and drips liquid at a rate of more than three drops per minute, except for seal lubricant. [District Rule 4401] Federally Enforceable Through Title V Permit
9. During the time any steam-enhanced crude oil production well is undergoing service or repair while the well is not producing, it shall be exempt from the emission control requirements of District Rule 4401, 5.0. [District Rule 4401] Federally Enforceable Through Title V Permit

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

10. Permittee shall not operate a steam-enhanced crude oil production well unless they comply with one of the following requirements: 1) Permittee shall keep the steam-enhanced crude oil production well vents closed and the front line production equipment downstream of the wells that carry produced fluids (crude oil or mixture of crude oil and water) shall be connected to a VOC collection and control system. The well vent may be temporarily opened during periods of attended service or repair of the well provided such activity is done as expeditiously as possible with minimal spillage of material and VOC emissions to the atmosphere; or 2) Permittee shall install and maintain an APCO-approved VOC collection and control system that is not open to the atmosphere and that is composed of hard-piping, ductwork connections and, if necessary, flow inducing devices that transport gas or vapor from a piece or pieces of equipment to an APCO-approved control device that has a VOC destruction or removal efficiency of at least 99%, or that transports gases or vapors back to a process system. [District Rules 2201 and 4401] Federally Enforceable Through Title V Permit
11. During District compliance inspection, the following conditions shall be used to determination of a violation: 1) Existence of an open-ended line or a valve located at the end of the line that is not sealed with a blind flange, plug, cap, or a second closed valve that is not closed at all times, except during attended operations requiring process fluid flow through the open-ended lines. Attended operations include draining or degassing operations, connection of temporary process equipment, sampling of process streams, emergency venting, and other normal operational needs, provided such operations are done as expeditiously as possible and with minimal spillage of material and VOC emissions to the atmosphere; 2) Existence of a component with a major liquid leak; 3) Existence of a component with a gas leak greater than 50,000 ppmv; or 4) Existence of a component leak consisting of a minor liquid or gas leak, or a gas leak greater than 10,000 ppmv up to 50,000 ppmv, in excess of the allowable number of leaks specified in Table 2 of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
12. The permittee shall not use any components that leak in excess of the applicable leak standards as specified in this permit. Components that have been found leaking in excess of the applicable leak standards of this rule may be used provided such leaking components have been identified with a tag for repair, are repaired, or are awaiting re-inspection after being repaired, within the applicable time period specified in this permit. [District Rule 4401] Federally Enforceable Through Title V Permit
13. Permittee shall keep all hatches closed at all times except during sampling or adding of process material through the hatch, or during attended repair, replacement, or maintenance operations, provided such activities are done as expeditiously as possible with minimal spillage of material and VOC emissions to the atmosphere. [District Rule 4401] Federally Enforceable Through Title V Permit
14. Except for pipes and unsafe-to-monitor components, permittee shall visually inspect all pipes at least once every year. Any visual inspection of pipes that indicates a leak that cannot be immediately repaired to meet the leak standards of Rule 4401 shall be inspected within 24 hours after detecting the leak. If a leak is found, the leak shall be repaired as soon as practicable but not later than the time frame specified in Table 4 of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
15. Permittee shall inspect audio-visually (by hearing and by sight) for leaks all accessible operating pumps, compressors, and pressure relief devices (PRDs) in service at least once each calendar week. [District Rule 4401] Federally Enforceable Through Title V Permit
16. Any audio-visual inspection of an accessible operating pump, compressor, and PRD performed by an operator that indicates a leak that cannot be immediately repaired to meet the leak standards of Rule 4401 shall be inspected not later than 24 hours after conducting the audio-visual inspection. If a leak is found, the leak shall be repaired as soon as practicable but not later than the time frame specified in Table 3 of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
17. Permittee shall initially inspect a PRD that releases to the atmosphere as soon as practicable but not later than 24 hours after the discovery of the release. Permittee shall re-inspect the PRD not earlier than 24 hours after the initial inspection but not later than 15 calendar days after the initial inspection. [District Rule 4401] Federally Enforceable Through Title V Permit
18. Permittee shall inspect all new, replaced, or repaired fittings, flanges, and threaded connections within 72 hours of placing the component in service. [District Rule 4401] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

19. Except for PRDs, permittee shall inspect a component that has been repaired or replaced not later than 15 calendar days after the component was repaired or replaced. [District Rule 4401] Federally Enforceable Through Title V Permit
20. Permittee shall inspect all unsafe-to-monitor components during each turnaround. [District Rule 4401] Federally Enforceable Through Title V Permit
21. Permittee shall affix a readily visible weatherproof tag to a leaking component upon detection of the leak. The following information shall be included on the tag: 1) the date and time of leak detection; 2) the date and time of leak measurement; 3) leak concentration in ppmv for a gaseous leak; 4) description of whether it is a major liquid leak or a minor liquid leak; and 5) whether the component is an essential component, an unsafe-to-monitor component, or a critical component. [District Rule 4401] Federally Enforceable Through Title V Permit
22. Permittee shall keep the tag affixed to the component until all of the following conditions have been met: 1) the leaking component has been repaired or replaced, and 2) the component has been re-inspected using the test methods described in this permit; and 3) the component is found to be in compliance with the requirements of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
23. Permittee shall minimize a component leak in order to stop or reduce leakage to the atmosphere immediately to the extent possible, but not later than one (1) hour after detection of the leak. [District Rule 4401] Federally Enforceable Through Title V Permit
24. Except for leaking critical components or leaking essential components, if the operator has minimized a leak but the leak still exceeds the applicable leak limits, the operator shall comply with at least one of the following requirements as soon as practicable but not later than the time period specified in Table 4 of Rule 4401: 1) repair or replace the leaking component; 2) vent the leaking component to a VOC collection and control system; or 3) remove the leaking component from operation. [District Rule 4401] Federally Enforceable Through Title V Permit
25. The leak rate, measured after leak minimization has been performed, shall be used to determine the applicable repair period specified in Table 3 of Rule 4401 and the time of initial leak detection shall be the start of the repair period specified in Table 3 of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
26. If the leaking component is an essential component or a critical component that cannot be immediately shut down for repairs, and if the leak has been minimized but the leak still exceeds the applicable leak standard of this rule, the operator shall repair or replace the essential component or critical component to eliminate the leak during the next process unit turnaround, but in no case later than one year from the date of the original leak detection, whichever comes earlier. [District Rule 4401] Federally Enforceable Through Title V Permit
27. All records of required monitoring data and support information required by this permit shall be retained for a period of at least five years and shall be made available for District inspection upon request. [District Rules 2520, 9.4.2, and 4401] Federally Enforceable Through Title V Permit
28. Permittee shall maintain monitoring records of the date and well identification where steam injection or well stimulation occurs. [District Rule 4401] Federally Enforceable Through Title V Permit
29. Unless waived by the District, permittee shall maintain source test records which show that the control efficiency requirements of the VOC collection and control system have been satisfied. [District Rule 4401] Federally Enforceable Through Title V Permit
30. Records shall be maintained of each calibration of the portable hydrocarbon detection instrument utilized for inspecting components. The records shall include a copy of the current calibration gas certification from the vendor of the calibration gas cylinder, the date of calibration, the concentration of calibration gas, the instrument reading of calibration gas before adjustment, the instrument reading of calibration gas after adjustment, the calibration gas expiration date, and the calibration gas cylinder pressure at the time of calibration. [District Rule 4401] Federally Enforceable Through Title V Permit
31. Permittee shall maintain a copy of the latest APCO-approved Operator Management Plan (OMP) at the facility and make it available to the APCO, ARB, and US EPA upon request. [District Rule 4401] Federally Enforceable Through Title V Permit

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

32. Annual control efficiency compliance tests shall be performed by source testers certified by the California Air Resource Board (CARB) on all vapor collection and control systems used to control emissions from steam-enhanced crude oil production wells. Testing shall be performed during June, July, August, or September of each year if the system's control efficiency is dependent upon ambient air temperature. The APCO may waive these source testing requirements if the vapor control system does not exhaust to atmosphere, or if all uncondensed VOC emissions collected by the vapor collection and control system are incinerated in fuel burning equipment, an internal combustion engine, or in a smokeless flare. [District Rule 4401] Federally Enforceable Through Title V Permit
33. The control efficiency of any VOC control device, measured and calculated as carbon, shall be determined by EPA Method 25, except when the outlet concentration must be below 50 ppm in order to meet the standard, in which case EPA Method 25a may be used. EPA Method 18 may be used in lieu of EPA Method 25 or EPA Method 25a provided the identity and approximate concentrations of the analytes/compounds in the sample gas stream are known before analysis with the gas chromatograph and the gas chromatograph is calibrated for each of those known analyte/compound to ensure that the VOC concentrations are neither under- or over-reported. [District Rule 4401] Federally Enforceable Through Title V Permit
34. VOC content shall be determined using the latest revision of ASTM Method E168, E169, or E260 as applicable. Halogenated exempt compounds shall be determined by ARB Method 432. [District Rule 4401] Federally Enforceable Through Title V Permit
35. Permittee shall perform leak inspections at least annually, using a portable hydrocarbon detection instrument in accordance with USEPA Method 21. Where safety is a concern, such as measuring leaks from compressor seals or pump seals when the shaft is rotating, a person shall measure leaks by placing the instrument probe inlet at a distance of one centimeter or less from the surface of the component interface. [District Rule 4401] Federally Enforceable Through Title V Permit
36. VOC content by weight percent (wt.%) shall be determined using American Society of Testing and Materials (ASTM) D1945 for gases and South Coast Air Quality Management District (SCAQMD) Method 304-91 or the latest revision of ASTM Method E168, E169 or E260 for liquids. [District Rule 4401] Federally Enforceable Through Title V Permit
37. Permittee shall maintain an inspection log in which, at a minimum, all of the following information shall be recorded for each inspection performed: 1) The total number of components inspected, and the total number and percentage of leaking components found by component type; 2) The location, type, and name or description of each leaking component and description of any unit where the leaking component is found; 3) The date of leak detection and the method of leak detection; 4) For gaseous leaks, the leak concentration in ppmv, and for liquid leaks record whether the leak is a major liquid leak or a minor liquid leak; 5) The date of repair, replacement, or removal from operation of leaking components; 6) The identify and location of essential components and critical components found leaking that cannot be repaired until the next process unit turnaround or not later than one year after leak detection, whichever comes earlier; 7) The methods used to minimize the leak from essential components and critical components found leaking that cannot be repaired until the next process unit turnaround or not later than one year after leak detection, whichever comes earlier; 8) The date of re-inspection and the leak concentration in ppmv after the component is repaired or is replaced; 9) The inspector's name, business mailing address, and business telephone number; and 10) The date and signature of the facility operator responsible for the inspection and repair program certifying the accuracy of the information recorded in the log. [District Rule 4401] Federally Enforceable Through Title V Permit
38. Permittee shall establish and implement an employee training program for inspecting and repairing components and recordkeeping procedures, as necessary. Permittee shall maintain at the facility the copies of the training records of the training program. [District Rule 4401, 6.1.7 & 6.5] Federally Enforceable Through Title V Permit
39. In accordance with the approved OMP, permittee shall meet all applicable operating, leak standards, inspection and re-inspection, leak repair, record keeping, and notification requirements of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
40. By January 30 of each year, permittee shall submit to the APCO for approval, in writing, an annual report indicating any changes to the existing, approved OMP. [District Rule 4401] Federally Enforceable Through Title V Permit
41. Well casing vents or downstream valves may be closed if wells are producing to tanks equipped with an operating vapor control system or if the wells are idle. [District Rule 4401] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

42. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following requirements: County Rules 108 (Kings), 108.1 (Fresno, Merced, San Joaquin, Tulare, Kern, and Stanislaus), and 110 (Madera). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
43. Compliance with permit conditions in the Title V permit shall be deemed in compliance with SJVUAPCD Rule 4401 (Amended January 15, 1998), excluding sections 5.1 and 5.2 for control systems which have been waived from complying with the requirement of section 6.2.1. A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
44. The requirements of SJVUAPCD Rule 4407 (Adopted May 19, 1994) do not apply to this permit unit. A permit shield is granted from this requirement. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

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

# San Joaquin Valley Air Pollution Control District

PERMIT UNIT: S-1128-130-16

EXPIRATION DATE: 02/29/2016

SECTION: 36 TOWNSHIP: 29S RANGE: 21E

## EQUIPMENT DESCRIPTION:

TEOR OPERATION WVVC SYSTEM CC-36W #2 SERVING 146 STEAM-ENHANCED WELLS, INCLUDING HEAT EXCHANGERS, GAS/LIQUID SEPARATORS, COMPRESSORS, AND PIPING TO SULFEROX PLANT S-1128-116, SCRUBBED SG'S, DOGGR APPROVED DISPOSAL WELL(S), OR 5 AUTOMATIC WELL TEST VESSELS - CYMRIC

## PERMIT UNIT REQUIREMENTS

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1. The crude oil production from wells associated with this permit unit shall not lie within 1000 feet of an air injection well used for in-situ combustion. [District Rule 4407, 2.0, 3.4, and 3.5] Federally Enforceable Through Title V Permit
2. All required source testing shall conform to the compliance testing procedures described in District Rule 1081(as amended December 16, 1993). [District Rule 1081] Federally Enforceable Through Title V Permit
3. The operation includes piping from pipeline vent pots 2 and 3 to casing gas collection line, vapor piping from 5 automatic well test vessels (AWTs) in Sec 36, T29S, R21E (2 at GS#2, 1 at GS#3 and 2 at GS#4), diverter valve piping from TEOR #CC-1Y (S-1128-385) discharge line (tying S-1128-385 to S-1128-130), heat exchanger(s), gas/liquid separator(s), vapor compressor(s), gas volume flow rate and temperature indicators, and gas piping to either TEOR permit S-1128-116 collection system, scrubbed steam generators S-1128-3, '-24, '-25, '-26, and '-29 through '-34, or DOGGR approved disposal well(s). [District NSR Rule] Federally Enforceable Through Title V Permit
4. S-1128-130 TEOR gas volume shall not exceed 1.5 MMscf/day and VOC content shall not exceed 4% by volume. [District NSR Rule] Federally Enforceable Through Title V Permit
5. VOC emission rate shall not exceed 301.4 lb/day. [District NSR Rule] Federally Enforceable Through Title V Permit
6. Permittee shall maintain an accurate daily record of TEOR gas volume. [District NSR Rule] Federally Enforceable Through Title V Permit
7. Permittee shall maintain with the permit a current listing of all steam enhanced wells connected to the casing vent control system and a copy of DOGGR approval of disposal well(s). [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
8. A gas leak is defined as the detection of a concentration of total organic compounds, above background (measured in accordance with EPA Method 21) that exceeds the following values: 1) A major gas leak is a detection of greater than 10,000 ppmv as methane; and 2) A minor gas leak is a detection of 400 to 10,000 ppmv as methane for pressure relief devices (PRDs) and 2,000 to 10,000 for components other than PRDs. [District Rule 4401] Federally Enforceable Through Title V Permit
9. A liquid leak is defined as the dripping of VOC-containing liquid. A major liquid leak is a visible mist or a continuous flow of liquid that is not seal lubricant. A minor liquid leak is a liquid leak that is not a major liquid leak and drips liquid at a rate of more than three drops per minute, except for seal lubricant. [District Rule 4401] Federally Enforceable Through Title V Permit
10. During the time any steam-enhanced crude oil production well is undergoing service or repair while the well is not producing, it shall be exempt from the emission control requirements of District Rule 4401, 5.0. [District Rule 4401] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

11. Permittee shall not operate a steam-enhanced crude oil production well unless they comply with one of the following requirements: 1) Permittee shall keep the steam-enhanced crude oil production well vents closed and the front line production equipment downstream of the wells that carry produced fluids (crude oil or mixture of crude oil and water) shall be connected to a VOC collection and control system. The well vent may be temporarily opened during periods of attended service or repair of the well provided such activity is done as expeditiously as possible with minimal spillage of material and VOC emissions to the atmosphere; or 2) Permittee shall install and maintain an APCO-approved VOC collection and control system that is not open to the atmosphere and that is composed of hard-piping, ductwork connections and, if necessary, flow inducing devices that transport gas or vapor from a piece or pieces of equipment to an APCO-approved control device that has a VOC destruction or removal efficiency of at least 99%, or that transports gases or vapors back to a process system. [District Rules 2201 and 4401] Federally Enforceable Through Title V Permit
12. During District compliance inspection, the following conditions shall be used to determination of a violation: 1) Existence of an open-ended line or a valve located at the end of the line that is not sealed with a blind flange, plug, cap, or a second closed valve that is not closed at all times, except during attended operations requiring process fluid flow through the open-ended lines. Attended operations include draining or degassing operations, connection of temporary process equipment, sampling of process streams, emergency venting, and other normal operational needs, provided such operations are done as expeditiously as possible and with minimal spillage of material and VOC emissions to the atmosphere; 2) Existence of a component with a major liquid leak; 3) Existence of a component with a gas leak greater than 50,000 ppmv; or 4) Existence of a component leak consisting of a minor liquid or gas leak, or a gas leak greater than 10,000 ppmv up to 50,000 ppmv, in excess of the allowable number of leaks specified in Table 2 of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
13. The permittee shall not use any components that leak in excess of the applicable leak standards as specified in this permit. Components that have been found leaking in excess of the applicable leak standards of this rule may be used provided such leaking components have been identified with a tag for repair, are repaired, or are awaiting re-inspection after being repaired, within the applicable time period specified in this permit. [District Rule 4401] Federally Enforceable Through Title V Permit
14. Permittee shall keep all hatches closed at all times except during sampling or adding of process material through the hatch, or during attended repair, replacement, or maintenance operations, provided such activities are done as expeditiously as possible with minimal spillage of material and VOC emissions to the atmosphere. [District Rule 4401] Federally Enforceable Through Title V Permit
15. Except for pipes and unsafe-to-monitor components, permittee shall visually inspect all pipes at least once every year. Any visual inspection of pipes that indicates a leak that cannot be immediately repaired to meet the leak standards of Rule 4401 shall be inspected within 24 hours after detecting the leak. If a leak is found, the leak shall be repaired as soon as practicable but not later than the time frame specified in Table 4 of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
16. Permittee shall inspect audio-visually (by hearing and by sight) for leaks all accessible operating pumps, compressors, and pressure relief devices (PRDs) in service at least once each calendar week. [District Rule 4401] Federally Enforceable Through Title V Permit
17. Any audio-visual inspection of an accessible operating pump, compressor, and PRD performed by an operator that indicates a leak that cannot be immediately repaired to meet the leak standards of Rule 4401 shall be inspected not later than 24 hours after conducting the audio-visual inspection. If a leak is found, the leak shall be repaired as soon as practicable but not later than the time frame specified in Table 3 of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
18. Permittee shall initially inspect a PRD that releases to the atmosphere as soon as practicable but not later than 24 hours after the discovery of the release. Permittee shall re-inspect the PRD not earlier than 24 hours after the initial inspection but not later than 15 calendar days after the initial inspection. [District Rule 4401] Federally Enforceable Through Title V Permit
19. Permittee shall inspect all new, replaced, or repaired fittings, flanges, and threaded connections within 72 hours of placing the component in service. [District Rule 4401] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

20. Except for PRDs, permittee shall inspect a component that has been repaired or replaced not later than 15 calendar days after the component was repaired or replaced. [District Rule 4401] Federally Enforceable Through Title V Permit
21. Permittee shall inspect all unsafe-to-monitor components during each turnaround. [District Rule 4401] Federally Enforceable Through Title V Permit
22. Permittee shall affix a readily visible weatherproof tag to a leaking component upon detection of the leak. The following information shall be included on the tag: 1) the date and time of leak detection; 2) the date and time of leak measurement; 3) leak concentration in ppmv for a gaseous leak; 4) description of whether it is a major liquid leak or a minor liquid leak; and 5) whether the component is an essential component, an unsafe-to-monitor component, or a critical component. [District Rule 4401] Federally Enforceable Through Title V Permit
23. Permittee shall keep the tag affixed to the component until all of the following conditions have been met: 1) the leaking component has been repaired or replaced, and 2) the component has been re-inspected using the test methods described in this permit; and 3) the component is found to be in compliance with the requirements of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
24. Permittee shall minimize a component leak in order to stop or reduce leakage to the atmosphere immediately to the extent possible, but not later than one (1) hour after detection of the leak. [District Rule 4401] Federally Enforceable Through Title V Permit
25. Except for leaking critical components or leaking essential components, if the operator has minimized a leak but the leak still exceeds the applicable leak limits, the operator shall comply with at least one of the following requirements as soon as practicable but not later than the time period specified in Table 4 of Rule 4401: 1) repair or replace the leaking component; 2) vent the leaking component to a VOC collection and control system; or 3) remove the leaking component from operation. [District Rule 4401] Federally Enforceable Through Title V Permit
26. The leak rate, measured after leak minimization has been performed, shall be used to determine the applicable repair period specified in Table 3 of Rule 4401 and the time of initial leak detection shall be the start of the repair period specified in Table 3 of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
27. If the leaking component is an essential component or a critical component that cannot be immediately shut down for repairs, and if the leak has been minimized but the leak still exceeds the applicable leak standard of this rule, the operator shall repair or replace the essential component or critical component to eliminate the leak during the next process unit turnaround, but in no case later than one year from the date of the original leak detection, whichever comes earlier. [District Rule 4401] Federally Enforceable Through Title V Permit
28. All records of required monitoring data and support information required by this permit shall be retained for a period of at least five years and shall be made available for District inspection upon request. [District Rules 2520, 9.4.2, and 4401] Federally Enforceable Through Title V Permit
29. Permittee shall maintain monitoring records of the date and well identification where steam injection or well stimulation occurs. [District Rule 4401] Federally Enforceable Through Title V Permit
30. Unless waived by the District, permittee shall maintain source test records which show that the control efficiency requirements of the VOC collection and control system have been satisfied. [District Rule 4401] Federally Enforceable Through Title V Permit
31. Records shall be maintained of each calibration of the portable hydrocarbon detection instrument utilized for inspecting components. The records shall include a copy of the current calibration gas certification from the vendor of the calibration gas cylinder, the date of calibration, the concentration of calibration gas, the instrument reading of calibration gas before adjustment, the instrument reading of calibration gas after adjustment, the calibration gas expiration date, and the calibration gas cylinder pressure at the time of calibration. [District Rule 4401] Federally Enforceable Through Title V Permit
32. Permittee shall maintain a copy of the latest APCO-approved Operator Management Plan (OMP) at the facility and make it available to the APCO, ARB, and US EPA upon request. [District Rule 4401] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

33. Annual control efficiency compliance tests shall be performed by source testers certified by the California Air Resource Board (CARB) on all vapor collection and control systems used to control emissions from steam-enhanced crude oil production wells. Testing shall be performed during June, July, August, or September of each year if the system's control efficiency is dependent upon ambient air temperature. The APCO may waive these source testing requirements if the vapor control system does not exhaust to atmosphere, or if all uncondensed VOC emissions collected by the vapor collection and control system are incinerated in fuel burning equipment, an internal combustion engine, or in a smokeless flare. [District Rule 4401] Federally Enforceable Through Title V Permit
34. The control efficiency of any VOC control device, measured and calculated as carbon, shall be determined by EPA Method 25, except when the outlet concentration must be below 50 ppm in order to meet the standard, in which case EPA Method 25a may be used. EPA Method 18 may be used in lieu of EPA Method 25 or EPA Method 25a provided the identity and approximate concentrations of the analytes/compounds in the sample gas stream are known before analysis with the gas chromatograph and the gas chromatograph is calibrated for each of those known analyte/compound to ensure that the VOC concentrations are neither under- or over-reported. [District Rule 4401] Federally Enforceable Through Title V Permit
35. VOC content shall be determined using the latest revision of ASTM Method E168, E169, or E260 as applicable. Halogenated exempt compounds shall be determined by ARB Method 432. [District Rule 4401] Federally Enforceable Through Title V Permit
36. Permittee shall perform leak inspections at least annually, using a portable hydrocarbon detection instrument in accordance with USEPA Method 21. Where safety is a concern, such as measuring leaks from compressor seals or pump seals when the shaft is rotating, a person shall measure leaks by placing the instrument probe inlet at a distance of one centimeter or less from the surface of the component interface. [District Rule 4401] Federally Enforceable Through Title V Permit
37. VOC content by weight percent (wt.%) shall be determined using American Society of Testing and Materials (ASTM) D1945 for gases and South Coast Air Quality Management District (SCAQMD) Method 304-91 or the latest revision of ASTM Method E168, E169 or E260 for liquids. [District Rule 4401] Federally Enforceable Through Title V Permit
38. Permittee shall maintain an inspection log in which, at a minimum, all of the following information shall be recorded for each inspection performed: 1) The total number of components inspected, and the total number and percentage of leaking components found by component type; 2) The location, type, and name or description of each leaking component and description of any unit where the leaking component is found; 3) The date of leak detection and the method of leak detection; 4) For gaseous leaks, the leak concentration in ppmv, and for liquid leaks record whether the leak is a major liquid leak or a minor liquid leak; 5) The date of repair, replacement, or removal from operation of leaking components; 6) The identify and location of essential components and critical components found leaking that cannot be repaired until the next process unit turnaround or not later than one year after leak detection, whichever comes earlier; 7) The methods used to minimize the leak from essential components and critical components found leaking that cannot be repaired until the next process unit turnaround or not later than one year after leak detection, whichever comes earlier; 8) The date of re-inspection and the leak concentration in ppmv after the component is repaired or is replaced; 9) The inspector's name, business mailing address, and business telephone number; and 10) The date and signature of the facility operator responsible for the inspection and repair program certifying the accuracy of the information recorded in the log. [District Rule 4401] Federally Enforceable Through Title V Permit
39. Permittee shall establish and implement an employee training program for inspecting and repairing components and recordkeeping procedures, as necessary. Permittee shall maintain at the facility the copies of the training records of the training program. [District Rule 4401, 6.1.7 & 6.5] Federally Enforceable Through Title V Permit
40. In accordance with the approved OMP, permittee shall meet all applicable operating, leak standards, inspection and re-inspection, leak repair, record keeping, and notification requirements of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
41. By January 30 of each year, permittee shall submit to the APCO for approval, in writing, an annual report indicating any changes to the existing, approved OMP. [District Rule 4401] Federally Enforceable Through Title V Permit
42. Well casing vents or downstream valves may be closed if wells are producing to tanks equipped with an operating vapor control system or if the wells are idle. [District Rule 4401] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

43. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following requirements: County Rules 108 (Kings), 108.1 (Fresno, Merced, San Joaquin, Tulare, Kern, and Stanislaus), and 110 (Madera). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
44. Compliance with permit conditions in the Title V permit shall be deemed in compliance with SJVUAPCD Rule 4401 (Amended January 15, 1998), excluding sections 5.1 and 5.2 for control systems which have been waived from complying with the requirement of section 6.2.1. A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
45. The requirements of SJVUAPCD Rule 4407 (Adopted May 19, 1994) do not apply to this permit unit. A permit shield is granted from this requirement. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

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

# San Joaquin Valley Air Pollution Control District

PERMIT UNIT: S-1128-144-10

EXPIRATION DATE: 02/29/2016

SECTION: 05 TOWNSHIP: 30S RANGE: 22E

## EQUIPMENT DESCRIPTION:

THERMALLY ENHANCED OIL RECOVERY (TEOR) OPERATION WELL VENT VAPOR CONTROL SYSTEM #CC-5Z/6Z SERVING 33 STEAM-ENHANCED WELLS, INCLUDING HEAT EXCHANGERS, GAS/LIQUID SEPARATORS, COMPRESSORS, AND PIPING TO SULFEROX PLANT (S-1128-116), SCRUBBED SG'S OR DOGGR APPROVED DISPOSAL WELL(S) - CYMRIC

## PERMIT UNIT REQUIREMENTS

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1. The crude oil production from wells associated with this permit unit shall not lie within 1000 feet of an air injection well used for in-situ combustion. [District Rule 4407, 2.0, 3.4, and 3.5] Federally Enforceable Through Title V Permit
2. All required source testing shall conform to the compliance testing procedures described in District Rule 1081(as amended December 16, 1993). [District Rule 1081] Federally Enforceable Through Title V Permit
3. The operator shall maintain all records of required monitoring data and support information for inspection at any time for a period of five years. [District Rule 2520, 9.5.2] Federally Enforceable Through Title V Permit
4. The operation includes heat exchanger(s), gas/liquid separator(s), vapor compressor(s), and gas piping to either TEOR operation S-1128-116, scrubbed steam generators S-1128-3, '-24, '-25, '-26, and '-29 through '-34 or DOGGR approved disposal well(s). [District NSR Rule] Federally Enforceable Through Title V Permit
5. VOC emissions shall not exceed 103.6 lb/day. [District NSR Rule] Federally Enforceable Through Title V Permit
6. Permittee shall maintain with the permit a current listing of all steam enhanced wells connected to the casing vent control system and a copy of DOGGR approval of disposal well(s). [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
7. A gas leak is defined as the detection of a concentration of total organic compounds, above background (measured in accordance with EPA Method 21) that exceeds the following values: 1) A major gas leak is a detection of greater than 10,000 ppmv as methane; and 2) A minor gas leak is a detection of 400 to 10,000 ppmv as methane for pressure relief devices (PRDs) and 2,000 to 10,000 for components other than PRDs. [District Rule 4401] Federally Enforceable Through Title V Permit
8. A liquid leak is defined as the dripping of VOC-containing liquid. A major liquid leak is a visible mist or a continuous flow of liquid that is not seal lubricant. A minor liquid leak is a liquid leak that is not a major liquid leak and drips liquid at a rate of more than three drops per minute, except for seal lubricant. [District Rule 4401] Federally Enforceable Through Title V Permit
9. During the time any steam-enhanced crude oil production well is undergoing service or repair while the well is not producing, it shall be exempt from the emission control requirements of District Rule 4401, 5.0. [District Rule 4401] Federally Enforceable Through Title V Permit

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

10. Permittee shall not operate a steam-enhanced crude oil production well unless they comply with one of the following requirements: 1) Permittee shall keep the steam-enhanced crude oil production well vents closed and the front line production equipment downstream of the wells that carry produced fluids (crude oil or mixture of crude oil and water) shall be connected to a VOC collection and control system. The well vent may be temporarily opened during periods of attended service or repair of the well provided such activity is done as expeditiously as possible with minimal spillage of material and VOC emissions to the atmosphere; or 2) Permittee shall install and maintain an APCO-approved VOC collection and control system that is not open to the atmosphere and that is composed of hard-piping, ductwork connections and, if necessary, flow inducing devices that transport gas or vapor from a piece or pieces of equipment to an APCO-approved control device that has a VOC destruction or removal efficiency of at least 99%, or that transports gases or vapors back to a process system. [District Rules 2201 and 4401] Federally Enforceable Through Title V Permit
11. During District compliance inspection, the following conditions shall be used to determination of a violation: 1) Existence of an open-ended line or a valve located at the end of the line that is not sealed with a blind flange, plug, cap, or a second closed valve that is not closed at all times, except during attended operations requiring process fluid flow through the open-ended lines. Attended operations include draining or degassing operations, connection of temporary process equipment, sampling of process streams, emergency venting, and other normal operational needs, provided such operations are done as expeditiously as possible and with minimal spillage of material and VOC emissions to the atmosphere; 2) Existence of a component with a major liquid leak; 3) Existence of a component with a gas leak greater than 50,000 ppmv; or 4) Existence of a component leak consisting of a minor liquid or gas leak, or a gas leak greater than 10,000 ppmv up to 50,000 ppmv, in excess of the allowable number of leaks specified in Table 2 of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
12. The permittee shall not use any components that leak in excess of the applicable leak standards as specified in this permit. Components that have been found leaking in excess of the applicable leak standards of this rule may be used provided such leaking components have been identified with a tag for repair, are repaired, or are awaiting re-inspection after being repaired, within the applicable time period specified in this permit. [District Rule 4401] Federally Enforceable Through Title V Permit
13. Permittee shall keep all hatches closed at all times except during sampling or adding of process material through the hatch, or during attended repair, replacement, or maintenance operations, provided such activities are done as expeditiously as possible with minimal spillage of material and VOC emissions to the atmosphere. [District Rule 4401] Federally Enforceable Through Title V Permit
14. Except for pipes and unsafe-to-monitor components, permittee shall visually inspect all pipes at least once every year. Any visual inspection of pipes that indicates a leak that cannot be immediately repaired to meet the leak standards of Rule 4401 shall be inspected within 24 hours after detecting the leak. If a leak is found, the leak shall be repaired as soon as practicable but not later than the time frame specified in Table 4 of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
15. Permittee shall inspect audio-visually (by hearing and by sight) for leaks all accessible operating pumps, compressors, and pressure relief devices (PRDs) in service at least once each calendar week. [District Rule 4401] Federally Enforceable Through Title V Permit
16. Any audio-visual inspection of an accessible operating pump, compressor, and PRD performed by an operator that indicates a leak that cannot be immediately repaired to meet the leak standards of Rule 4401 shall be inspected not later than 24 hours after conducting the audio-visual inspection. If a leak is found, the leak shall be repaired as soon as practicable but not later than the time frame specified in Table 3 of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
17. Permittee shall initially inspect a PRD that releases to the atmosphere as soon as practicable but not later than 24 hours after the discovery of the release. Permittee shall re-inspect the PRD not earlier than 24 hours after the initial inspection but not later than 15 calendar days after the initial inspection. [District Rule 4401] Federally Enforceable Through Title V Permit
18. Permittee shall inspect all new, replaced, or repaired fittings, flanges, and threaded connections within 72 hours of placing the component in service. [District Rule 4401] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

19. Except for PRDs, permittee shall inspect a component that has been repaired or replaced not later than 15 calendar days after the component was repaired or replaced. [District Rule 4401] Federally Enforceable Through Title V Permit
20. Permittee shall inspect all unsafe-to-monitor components during each turnaround. [District Rule 4401] Federally Enforceable Through Title V Permit
21. Permittee shall affix a readily visible weatherproof tag to a leaking component upon detection of the leak. The following information shall be included on the tag: 1) the date and time of leak detection; 2) the date and time of leak measurement; 3) leak concentration in ppmv for a gaseous leak; 4) description of whether it is a major liquid leak or a minor liquid leak; and 5) whether the component is an essential component, an unsafe-to-monitor component, or a critical component. [District Rule 4401] Federally Enforceable Through Title V Permit
22. Permittee shall keep the tag affixed to the component until all of the following conditions have been met: 1) the leaking component has been repaired or replaced, and 2) the component has been re-inspected using the test methods described in this permit; and 3) the component is found to be in compliance with the requirements of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
23. Permittee shall minimize a component leak in order to stop or reduce leakage to the atmosphere immediately to the extent possible, but not later than one (1) hour after detection of the leak. [District Rule 4401] Federally Enforceable Through Title V Permit
24. Except for leaking critical components or leaking essential components, if the operator has minimized a leak but the leak still exceeds the applicable leak limits, the operator shall comply with at least one of the following requirements as soon as practicable but not later than the time period specified in Table 4 of Rule 4401: 1) repair or replace the leaking component; 2) vent the leaking component to a VOC collection and control system; or 3) remove the leaking component from operation. [District Rule 4401] Federally Enforceable Through Title V Permit
25. The leak rate, measured after leak minimization has been performed, shall be used to determine the applicable repair period specified in Table 3 of Rule 4401 and the time of initial leak detection shall be the start of the repair period specified in Table 3 of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
26. If the leaking component is an essential component or a critical component that cannot be immediately shut down for repairs, and if the leak has been minimized but the leak still exceeds the applicable leak standard of this rule, the operator shall repair or replace the essential component or critical component to eliminate the leak during the next process unit turnaround, but in no case later than one year from the date of the original leak detection, whichever comes earlier. [District Rule 4401] Federally Enforceable Through Title V Permit
27. All records of required monitoring data and support information required by this permit shall be retained for a period of at least five years and shall be made available for District inspection upon request. [District Rules 2520, 9.4.2, and 4401] Federally Enforceable Through Title V Permit
28. Permittee shall maintain monitoring records of the date and well identification where steam injection or well stimulation occurs. [District Rule 4401] Federally Enforceable Through Title V Permit
29. Unless waived by the District, permittee shall maintain source test records which show that the control efficiency requirements of the VOC collection and control system have been satisfied. [District Rule 4401] Federally Enforceable Through Title V Permit
30. Records shall be maintained of each calibration of the portable hydrocarbon detection instrument utilized for inspecting components. The records shall include a copy of the current calibration gas certification from the vendor of the calibration gas cylinder, the date of calibration, the concentration of calibration gas, the instrument reading of calibration gas before adjustment, the instrument reading of calibration gas after adjustment, the calibration gas expiration date, and the calibration gas cylinder pressure at the time of calibration. [District Rule 4401] Federally Enforceable Through Title V Permit
31. Permittee shall maintain a copy of the latest APCO-approved Operator Management Plan (OMP) at the facility and make it available to the APCO, ARB, and US EPA upon request. [District Rule 4401] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

32. Annual control efficiency compliance tests shall be performed by source testers certified by the California Air Resource Board (CARB) on all vapor collection and control systems used to control emissions from steam-enhanced crude oil production wells. Testing shall be performed during June, July, August, or September of each year if the system's control efficiency is dependent upon ambient air temperature. The APCO may waive these source testing requirements if the vapor control system does not exhaust to atmosphere, or if all uncondensed VOC emissions collected by the vapor collection and control system are incinerated in fuel burning equipment, an internal combustion engine, or in a smokeless flare. [District Rule 4401] Federally Enforceable Through Title V Permit
33. The control efficiency of any VOC control device, measured and calculated as carbon, shall be determined by EPA Method 25, except when the outlet concentration must be below 50 ppm in order to meet the standard, in which case EPA Method 25a may be used. EPA Method 18 may be used in lieu of EPA Method 25 or EPA Method 25a provided the identity and approximate concentrations of the analytes/compounds in the sample gas stream are known before analysis with the gas chromatograph and the gas chromatograph is calibrated for each of those known analyte/compound to ensure that the VOC concentrations are neither under- or over-reported. [District Rule 4401] Federally Enforceable Through Title V Permit
34. VOC content shall be determined using the latest revision of ASTM Method E168, E169, or E260 as applicable. Halogenated exempt compounds shall be determined by ARB Method 432. [District Rule 4401] Federally Enforceable Through Title V Permit
35. Permittee shall perform leak inspections at least annually, using a portable hydrocarbon detection instrument in accordance with USEPA Method 21. Where safety is a concern, such as measuring leaks from compressor seals or pump seals when the shaft is rotating, a person shall measure leaks by placing the instrument probe inlet at a distance of one centimeter or less from the surface of the component interface. [District Rule 4401] Federally Enforceable Through Title V Permit
36. VOC content by weight percent (wt.%) shall be determined using American Society of Testing and Materials (ASTM) D1945 for gases and South Coast Air Quality Management District (SCAQMD) Method 304-91 or the latest revision of ASTM Method E168, E169 or E260 for liquids. [District Rule 4401] Federally Enforceable Through Title V Permit
37. Permittee shall maintain an inspection log in which, at a minimum, all of the following information shall be recorded for each inspection performed: 1) The total number of components inspected, and the total number and percentage of leaking components found by component type; 2) The location, type, and name or description of each leaking component and description of any unit where the leaking component is found; 3) The date of leak detection and the method of leak detection; 4) For gaseous leaks, the leak concentration in ppmv, and for liquid leaks record whether the leak is a major liquid leak or a minor liquid leak; 5) The date of repair, replacement, or removal from operation of leaking components; 6) The identify and location of essential components and critical components found leaking that cannot be repaired until the next process unit turnaround or not later than one year after leak detection, whichever comes earlier; 7) The methods used to minimize the leak from essential components and critical components found leaking that cannot be repaired until the next process unit turnaround or not later than one year after leak detection, whichever comes earlier; 8) The date of re-inspection and the leak concentration in ppmv after the component is repaired or is replaced; 9) The inspector's name, business mailing address, and business telephone number; and 10) The date and signature of the facility operator responsible for the inspection and repair program certifying the accuracy of the information recorded in the log. [District Rule 4401] Federally Enforceable Through Title V Permit
38. Permittee shall establish and implement an employee training program for inspecting and repairing components and recordkeeping procedures, as necessary. Permittee shall maintain at the facility the copies of the training records of the training program. [District Rule 4401, 6.1.7 & 6.5] Federally Enforceable Through Title V Permit
39. In accordance with the approved OMP, permittee shall meet all applicable operating, leak standards, inspection and re-inspection, leak repair, record keeping, and notification requirements of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
40. By January 30 of each year, permittee shall submit to the APCO for approval, in writing, an annual report indicating any changes to the existing, approved OMP. [District Rule 4401] Federally Enforceable Through Title V Permit
41. Well casing vents or downstream valves may be closed if wells are producing to tanks equipped with an operating vapor control system or if the wells are idle. [District Rule 4401] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

42. Compliance with permit conditions in the Title V permit shall be deemed in compliance with the following requirements: County Rules 108 (Kings), 108.1 (Fresno, Merced, San Joaquin, Tulare, Kern, and Stanislaus), and 110 (Madera). A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
43. Compliance with permit conditions in the Title V permit shall be deemed in compliance with SJVUAPCD Rule 4401 (Amended January 15, 1998), excluding sections 5.1 and 5.2 for control systems which have been waived from complying with the requirement of section 6.2.1. A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
44. The requirements of SJVUAPCD Rule 4407 (Adopted May 19, 1994) do not apply to this permit unit. A permit shield is granted from this requirement. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

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

# San Joaquin Valley Air Pollution Control District

**PERMIT UNIT:** S-1128-248-33

**EXPIRATION DATE:** 02/29/2016

**SECTION:** SW31 **TOWNSHIP:** 29S **RANGE:** 22E

## **EQUIPMENT DESCRIPTION:**

6,600 BBL FIXED ROOF CRUDE OIL TANK T-24 W VAPOR CONTROL SYSTEM SHARED W/23 PERMIT UNITS; INCLUDING HEAT EXCHANGER(S), G/L SEPARATOR(S), GAS COMPRESSORS, & GAS PIPING TO SULFEROX PLT (S-1128-116), SCRUBBED STEAM GENERATORS OR DOGGR APPROVED DISPOSAL WELLS

## **PERMIT UNIT REQUIREMENTS**

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1. The following tanks shall be connected to vapor control system: S-1128-248, -250, -262, -263, -297, -298, -400, -401, -402, -404, -405, -406, -407, -411, -412, -935, -936, -938, -940, and -958. [District NSR Rule] Federally Enforceable Through Title V Permit
2. This tank shall only store, place, or hold organic liquid with a true vapor pressure (TVP) of less than 0.5 psia under all storage conditions. [District Rule 4623] Federally Enforceable Through Title V Permit
3. The tank shall be equipped with a vapor control system consisting of a closed vent system that collects all VOCs from the storage tank, and a VOC control device. The vapor control system shall be APCO-approved and maintained in gas-tight condition. The VOC control device shall be either of the following: a vapor return or condensation system that connects to a gas pipeline distribution system, or an approved VOC destruction device that reduces the inlet VOC emissions by at least 99% by weight as determined by the test method specified in Section 6.4.7. [District Rules 2201 and 4623] Federally Enforceable Through Title V Permit
4. Any tank gauging or sampling device on a tank vented to the vapor control system shall be equipped with a gas-tight cover which shall be closed at all times except during gauging or sampling. Gas-tight shall be defined as emitting no more than 10,000 ppm of methane measured at a distance of one centimeter from the potential source with an instrument calibrated with methane in accordance with EPA Method 21. Emissions in excess of this limit shall be considered a leak. [District NSR Rule] Federally Enforceable Through Title V Permit
5. All piping, valves and fittings shall be constructed and maintained in a gas-tight condition. Gas-tight shall be defined as emitting no more than 10,000 ppm of methane measured at a distance of one centimeter from the potential source with an instrument calibrated with methane in accordance with EPA Method 21. Emissions in excess of this limit shall be considered a leak. [District NSR Rule] Federally Enforceable Through Title V Permit
6. All piping, fittings, and valves on this tank shall be inspected annually by the facility operator in accordance with EPA Method 21, with the instrument calibrated with methane, to ensure compliance with the leaking provisions of this permit. [District NSR Rule] Federally Enforceable Through Title V Permit
7. All piping, fittings, and valves shall be inspected annually by the facility operator in accordance with EPA Method 21, with the instrument calibrated with methane, to ensure compliance with the provisions of this permit. If any of the tank components are found to leak during an annual inspection, the inspection frequency for that component type shall be changed from annual to quarterly. If no tank components are subsequently found to be leaking during five consecutive inspections, the inspection frequency may be changed from quarterly to annual. Components located in inaccessible (over 15 feet above ground when access is required from the ground or over 6 feet away from a platform when access is required from the platform) locations shall be inspected at least annually and components located in unsafe areas shall be inspected and repaired at the next process unit turnaround (the scheduled shutdown of a unit for maintenance and repair work). [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

8. Leaking tank components affixed to the tank or within five feet of the tank that have been discovered by the operator and that have been immediately tagged and repaired within the specified deadlines, shall not constitute a violation of this permit. However, leaking components discovered during inspections by District staff that were not previously identified and/or tagged by the operator, and/or any leaks that were not repaired within specified deadlines, shall constitute a violation of this permit. [District Rule 2201] Federally Enforceable Through Title V Permit
9. A facility operator, upon detection of a leaking component, shall affix to that component a weatherproof readily visible tag bearing the date on which the leak is detected. The tag shall remain in place until the leaking component is repaired, reinspected and found to be in compliance with the requirements of this rule. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
10. An operator shall reinspect a component for leaks within thirty working days after the date on which the component is repaired. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
11. Any component leak shall be repaired to a leak-free condition or vented to a flare satisfying the requirements of 40 CFR 60.18 or to a vapor control device that is at least 95 percent efficient as measured by EPA Method 25 within fifteen (15) calendar days of detection. The APCO may grant a ten (10) calendar day extension provided the operator demonstrates that necessary and sufficient actions are being taken to correct the leak within this time period. Any vapor control device, other than a flare, used to comply with this condition shall demonstrate at least 95% control efficiency as measured by EPA Method 25 at least annually. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
12. If the leaking component is an essential part of a critical process unit which cannot be immediately shut down for repairs, the operator shall 1) Minimize the leak within 15 calendar days; and 2) If the leak which has been minimized still exceeds the concentration allowed by this permit, the essential component shall be repaired 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. A critical process unit is any process unit which would result in the automatic shutdown of other process units if it were shut down. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
13. Operator shall maintain an inspection log containing the following 1) Type of component leaking; 2) Date of leak detection, and method of detection; 3) Date and emission level of recheck after leak is repaired; 4) Identification and location of essential parts of critical process units found leaking that cannot be repaired until the next process unit turnaround; and 5) Method used to minimize the leak from essential parts of critical process units which cannot be repaired until the next process unit turnaround. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
14. Control efficiency shall be determined by a comparison of controlled emissions to those emissions which would occur from a fixed or cone roof tank in the same product service without a vapor recovery system. Emissions shall be determined based on tank emission factors in EPA Publication AP-42, component counts for fugitive emissions sources, recognized emission factors for fugitive emission sources and the efficiency of any VOC destruction device. [District NSR Rule] Federally Enforceable Through Title V Permit
15. The efficiency of any VOC destruction device shall be measured by USEPA Method 18, 25, 25a, or 25b. [District NSR Rule] Federally Enforceable Through Title V Permit
16. The operator shall ensure that the vapor control system is functional and is operating as designed at all times. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
17. The operator of a fixed roof tank shall maintain all records of required monitoring data and support information for inspection at any time for a period of five years. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
18. Tank vapor control system includes heat exchanger(s), gas/liquid separator(s), gas eliminator, gas compressor(s), condensate pump(s), and gas piping to either TEOR permit S-1128-116 collection piping, scrubbed steam generators S-1128-3, -24, -25, -26, and -29 through -34, or DOGGR approved disposal well(s). [District NSR Rule] Federally Enforceable Through Title V Permit
19. VOC content of total hydrocarbons in gas processed by the vapor control system, upstream of compressors, shall not exceed 50% by weight. [District Rule 2201] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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20. Fugitive VOC emission rate, calculated using the Oil and Gas Production Operations Average Emission Factors, U.S. EPA Protocol for Equipment Leak Emission Estimates, Table 2-4 (EPA-453/R-95-017) November 1995 from the total number of vapor components associated with tank and vapor control system shall not exceed 107.8 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit
21. Fugitive VOC limit listed above does not include components handling produced fluids with an API gravity less than 30 degrees, or components in water/oil service (condensate) with a water content equal to or greater than 50% by weight, or components handling fluid streams with a VOC content of 10% or less by weight. [District Rule 2201] Federally Enforceable Through Title V Permit
22. Records of VOC content of the hydrocarbons in the gas processed by vapor control system shall be kept at the facility and made readily available for compliance inspection upon request for a period of 5 years. [District Rule 1070] Federally Enforceable Through Title V Permit
23. VOC content of hydrocarbons in gas processed by vapor control system shall be determined using ASTM Method E168, E169, or E260 as applicable, or equivalent test method with prior District approval measured upon startup and annually thereafter. [District Rule 2201] Federally Enforceable Through Title V Permit
24. This permit authorizes tank cleaning that is not the result of breakdowns or poor maintenance as a routine maintenance activity. [District Rule 2080] Federally Enforceable Through Title V Permit
25. Permittee shall conduct tank cleaning and maintenance operations in accordance with District approved procedure as described in this permit. [District Rule 2080] Federally Enforceable Through Title V Permit
26. Tank may be disconnected from vapor control system during District approved cleaning and maintenance procedures as described in this permit. [District Rule 2010] Federally Enforceable Through Title V Permit
27. Permittee shall notify the District Compliance division at least 24 hours before tank cleaning and vapor control system disconnection and within 72 hours after restoring crude oil flow to the tank. [District Rule 2080] Federally Enforceable Through Title V Permit
28. Prior to opening the tank to allow tank cleaning one of the following procedures must be followed: 1) operate the vapor recovery system for at least 24 hours after all the liquid in the tank has been drained, 2) displace vapors floating the oil pad off with water such that 90% of the tank volume is displaced, 3) vent the tank to the vapor control system until the vapor concentration is less than 10% of the lower explosive limit (LEL) or 5,000 ppmv whichever is less; or 4) vent the tank to the vapor control system for a length of time determined by the following relationship:  $t = 2.3 V / Q$ , where  $t$  = time,  $V$  = tank volume (cubic feet), and  $Q$  = flow rate to the vapor control system as determined using appropriate engineering calculations. [District Rule 2080] Federally Enforceable Through Title V Permit
29. The tank shall be cleaned using one of the following methods: water, hot water, solvents with an initial boiling point of greater than 302 F, solvents with a vapor pressure of less than 0.5 psia, or solvents with 50 grams VOC per liter or less. The tank sediment may be used for road mix as allowed by Section 6.17 of District Rule 2020. [District Rule 2080] Federally Enforceable Through Title V Permit
30. Steam cleaning shall be allowed only during December through March, or at locations where wastewater treatment facilities are limited. [District Rule 2080] Federally Enforceable Through Title V Permit
31. Prior to reintroducing crude oil/water to the tank, the tank shall be filled to the maximum possible level with water, the tank vapor control system shall be reactivated and pressure/relief valves closed, and the liquid level shall be adjusted as necessary. [District Rule 2080] Federally Enforceable Through Title V Permit
32. Within 48 hours after refilling the tank with crude oil/water, the pressure relief valve seats and hatch seals shall be inspected for leaks using EPA method 21 and the regular tank maintenance and inspection program shall resume. [District Rule 2080] Federally Enforceable Through Title V Permit
33. Permittee shall maintain records of each period of cleaning and maintenance when the tank is disconnected or isolated from the vapor control system. Records shall include the date that tank cleaning was initiated, the date tank cleaning was completed, the method of tank cleaning used, and a description of internal and external tank repairs and maintenance performed. Such records shall be retained for a period of at least 5 years and shall be made available for District inspection upon request. [District Rule 2080] Federally Enforceable Through Title V Permit

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

# San Joaquin Valley Air Pollution Control District

**PERMIT UNIT:** S-1128-385-39

**EXPIRATION DATE:** 02/29/2016

**SECTION:** 1 **TOWNSHIP:** 30S **RANGE:** 21E

## **EQUIPMENT DESCRIPTION:**

THERMALLY ENHANCED OIL RECOVERY (TEOR) OPERATION WELL VENT VAPOR CONTROL SYSTEM #CC-1Y SERVING 770 STEAM ENHANCED WELLS INCLUDING HEAT EXCHANGERS, GAS/LIQUID SEPARATORS, COMPRESSORS, GAS FLOW AND TEMPERATURE INDICATORS, AUTOMATIC WELL TEST STATIONS, AND GAS PIPING TO SULFEROX PLANT S-1128-116, SCRUBBED STEAM GENERATORS, OR DOGGR APPROVED DISPOSAL WELL(S)

## **PERMIT UNIT REQUIREMENTS**

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1. The crude oil production from wells associated with this permit unit shall not lie within 1000 feet of an air injection well used for in-situ combustion. [District Rule 4407, 2.0, 3.4, and 3.5] Federally Enforceable Through Title V Permit
2. The operation includes gauge vessel(s), heat exchanger(s), gas/liquid separator(s), condensate tank(s), vapor compressor(s), gas volume flow rate and temperature indicators, and gas piping to either TEOR permit S-1128-116 collection system, TEOR permit S-1128-130 collection system, scrubbed steam generators S-1128-3, '-24, '-25, '-26, and '-29 through '-34, or DOGGR approved disposal well(s). [District NSR Rule] Federally Enforceable Through Title V Permit
3. VOC content of hydrocarbons in gas processed shall not exceed 50% by weight. [District Rule 2201] Federally Enforceable Through Title V Permit
4. Fugitive VOC emissions from components in vapor and condensate service shall not exceed 364 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit
5. Fugitive VOC limit listed above does not include components at the well-head up to the point of initial gas/liquid separation, or existing production handling or flow measurement facilities, or shown to be handling produced fluids with an API gravity less than 30 degrees or fluid streams containing more than 50% water (by weight) or with a VOC content of 10% (by weight) or less. [District Rule 2201] Federally Enforceable Through Title V Permit
6. Components to be screened and counted for determining compliance with fugitive VOC limit listed above shall be identified and categorized according to the appropriate fluid types (gas or water/oil) in Table 2-4 of the EPA's "1995 Protocol for Equipment Leak Emission Estimates" (EPA-453/R-95-017) and the following component types: valves, fittings, threaded connections, open-ended lines, pumps, compressors, pressure relief devices, pipes, flanges, process drains, sealing mechanisms, hatches, sight-glasses, meters, or seal fluid systems. [District Rule 2201] Federally Enforceable Through Title V Permit
7. All required source testing shall conform to the compliance testing procedures described in District Rule 1081(as amended December 16, 1993). [District Rule 1081] Federally Enforceable Through Title V Permit
8. Permittee shall maintain with the permit a current listing of all steam enhanced wells connected to the casing vent control system and a copy of DOGGR approval of disposal well(s). [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

9. Permittee shall maintain for a period of five years, accurate daily records of volume of vapors handled, a list of all thermally enhanced production wells associated with this operation, accurate records of fugitive inspection component counts and leak inspection results, and make such records readily available for District inspection upon request. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Permittee shall maintain with the permit accurate fugitive component counts of vapor and condensate handling equipment and resulting emissions calculated using the EPA "1995 Protocol for Equipment Leak Emission Estimates" (EPA-453/R-95-017), Oil and Gas Production Operations Average Emission Factors, Table 2-4. [District Rule 2201] Federally Enforceable Through Title V Permit
11. Permittee shall maintain a written record of VOC content of the gas (sampled not less than annually) and shall make such records available for District inspection upon request for a period of five years. [District Rule 2201] Federally Enforceable Through Title V Permit
12. A gas leak is defined as the detection of a concentration of total organic compounds, above background (measured in accordance with EPA Method 21) that exceeds the following values: 1) A major gas leak is a detection of greater than 10,000 ppmv as methane; and 2) A minor gas leak is a detection of 400 to 10,000 ppmv as methane for pressure relief devices (PRDs) and 2,000 to 10,000 for components other than PRDs. [District Rule 4401] Federally Enforceable Through Title V Permit
13. A liquid leak is defined as the dripping of VOC-containing liquid. A major liquid leak is a visible mist or a continuous flow of liquid that is not seal lubricant. A minor liquid leak is a liquid leak that is not a major liquid leak and drips liquid at a rate of more than three drops per minute, except for seal lubricant. [District Rule 4401] Federally Enforceable Through Title V Permit
14. During the time any steam-enhanced crude oil production well is undergoing service or repair while the well is not producing, it shall be exempt from the emission control requirements of District Rule 4401, 5.0. [District Rule 4401] Federally Enforceable Through Title V Permit
15. Permittee shall not operate a steam-enhanced crude oil production well unless they comply with one of the following requirements: 1) Permittee shall keep the steam-enhanced crude oil production well vents closed and the front line production equipment downstream of the wells that carry produced fluids (crude oil or mixture of crude oil and water) shall be connected to a VOC collection and control system. The well vent may be temporarily opened during periods of attended service or repair of the well provided such activity is done as expeditiously as possible with minimal spillage of material and VOC emissions to the atmosphere; or 2) Permittee shall install and maintain an APCO-approved VOC collection and control system that is not open to the atmosphere and that is composed of hard-piping, ductwork connections and, if necessary, flow inducing devices that transport gas or vapor from a piece or pieces of equipment to an APCO-approved control device that has a VOC destruction or removal efficiency of at least 99%, or that transports gases or vapors back to a process system. [District Rules 2201 and 4401] Federally Enforceable Through Title V Permit
16. During District compliance inspection, the following conditions shall be used to determination of a violation: 1) Existence of an open-ended line or a valve located at the end of the line that is not sealed with a blind flange, plug, cap, or a second closed valve that is not closed at all times, except during attended operations requiring process fluid flow through the open-ended lines. Attended operations include draining or degassing operations, connection of temporary process equipment, sampling of process streams, emergency venting, and other normal operational needs, provided such operations are done as expeditiously as possible and with minimal spillage of material and VOC emissions to the atmosphere; 2) Existence of a component with a major liquid leak; 3) Existence of a component with a gas leak greater than 50,000 ppmv; or 4) Existence of a component leak consisting of a minor liquid or gas leak, or a gas leak greater than 10,000 ppmv up to 50,000 ppmv, in excess of the allowable number of leaks specified in Table 2 of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
17. The permittee shall not use any components that leak in excess of the applicable leak standards as specified in this permit. Components that have been found leaking in excess of the applicable leak standards of this rule may be used provided such leaking components have been identified with a tag for repair, are repaired, or are awaiting re-inspection after being repaired, within the applicable time period specified in this permit. [District Rule 4401] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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18. Permittee shall keep all hatches closed at all times except during sampling or adding of process material through the hatch, or during attended repair, replacement, or maintenance operations, provided such activities are done as expeditiously as possible with minimal spillage of material and VOC emissions to the atmosphere. [District Rule 4401] Federally Enforceable Through Title V Permit
19. Except for pipes and unsafe-to-monitor components, permittee shall visually inspect all pipes at least once every year. Any visual inspection of pipes that indicates a leak that cannot be immediately repaired to meet the leak standards of Rule 4401 shall be inspected within 24 hours after detecting the leak. If a leak is found, the leak shall be repaired as soon as practicable but not later than the time frame specified in Table 3 of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
20. Permittee shall inspect audio-visually (by hearing and by sight) for leaks all accessible operating pumps, compressors, and pressure relief devices (PRDs) in service at least once each calendar week. [District Rule 4401] Federally Enforceable Through Title V Permit
21. Any audio-visual inspection of an accessible operating pump, compressor, and PRD performed by an operator that indicates a leak that cannot be immediately repaired to meet the leak standards of Rule 4401 shall be inspected not later than 24 hours after conducting the audio-visual inspection. If a leak is found, the leak shall be repaired as soon as practicable but not later than the time frame specified in Table 3 of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
22. Permittee shall initially inspect a PRD that releases to the atmosphere as soon as practicable but not later than 24 hours after the discovery of the release. Permittee shall re-inspect the PRD not earlier than 24 hours after the initial inspection but not later than 15 calendar days after the initial inspection. [District Rule 4401] Federally Enforceable Through Title V Permit
23. Permittee shall inspect all new, replaced, or repaired fittings, flanges, and threaded connections within 72 hours of placing the component in service. [District Rule 4401] Federally Enforceable Through Title V Permit
24. Except for PRDs, permittee shall inspect a component that has been repaired or replaced not later than 15 calendar days after the component was repaired or replaced. [District Rule 4401] Federally Enforceable Through Title V Permit
25. Permittee shall inspect all unsafe-to-monitor components during each turnaround. [District Rule 4401] Federally Enforceable Through Title V Permit
26. Permittee shall affix a readily visible weatherproof tag to a leaking component upon detection of the leak. The following information shall be included on the tag: 1) the date and time of leak detection; 2) the date and time of leak measurement; 3) leak concentration in ppmv for a gaseous leak; 4) description of whether it is a major liquid leak or a minor liquid leak; and 5) whether the component is an essential component, an unsafe-to-monitor component, or a critical component. [District Rule 4401] Federally Enforceable Through Title V Permit
27. Permittee shall keep the tag affixed to the component until all of the following conditions have been met: 1) the leaking component has been repaired or replaced, and 2) the component has been re-inspected using the test methods described in this permit; and 3) the component is found to be in compliance with the requirements of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
28. Permittee shall minimize a component leak in order to stop or reduce leakage to the atmosphere immediately to the extent possible, but not later than one (1) hour after detection of the leak. [District Rule 4401] Federally Enforceable Through Title V Permit
29. Except for leaking critical components or leaking essential components, if the operator has minimized a leak but the leak still exceeds the applicable leak limits, the operator shall comply with at least one of the following requirements as soon as practicable but not later than the time period specified in Table 3 of Rule 4401: 1) repair or replace the leaking component; 2) vent the leaking component to a VOC collection and control system; or 3) remove the leaking component from operation. [District Rule 4401] Federally Enforceable Through Title V Permit
30. The leak rate, measured after leak minimization has been performed, shall be used to determine the applicable repair period specified in Table 3 of Rule 4401 and the time of initial leak detection shall be the start of the repair period specified in Table 3 of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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31. If the leaking component is an essential component or a critical component that cannot be immediately shut down for repairs, and if the leak has been minimized but the leak still exceeds the applicable leak standard of this rule, the operator shall repair or replace the essential component or critical component to eliminate the leak during the next process unit turnaround, but in no case later than one year from the date of the original leak detection, whichever comes earlier. [District Rule 4401] Federally Enforceable Through Title V Permit
32. All records of required monitoring data and support information required by this permit shall be retained for a period of at least five years and shall be made available for District inspection upon request. [District Rules 2520, 9.4.2, and 4401] Federally Enforceable Through Title V Permit
33. Permittee shall maintain monitoring records of the date and well identification where steam injection or well stimulation occurs. [District Rule 4401] Federally Enforceable Through Title V Permit
34. Unless waived by the District, permittee shall maintain source test records which show that the control efficiency requirements of the VOC collection and control system have been satisfied. [District Rule 4401] Federally Enforceable Through Title V Permit
35. Records shall be maintained of each calibration of the portable hydrocarbon detection instrument utilized for inspecting components. The records shall include a copy of the current calibration gas certification from the vendor of the calibration gas cylinder, the date of calibration, the concentration of calibration gas, the instrument reading of calibration gas before adjustment, the instrument reading of calibration gas after adjustment, the calibration gas expiration date, and the calibration gas cylinder pressure at the time of calibration. [District Rule 4401] Federally Enforceable Through Title V Permit
36. Permittee shall maintain a copy of the latest APCO-approved Operator Management Plan (OMP) at the facility and make it available to the APCO, ARB, and US EPA upon request. [District Rule 4401] Federally Enforceable Through Title V Permit
37. Annual control efficiency compliance tests shall be performed by source testers certified by the California Air Resource Board (CARB) on all vapor collection and control systems used to control emissions from steam-enhanced crude oil production wells. Testing shall be performed during June, July, August, or September of each year if the system's control efficiency is dependent upon ambient air temperature. The APCO may waive these source testing requirements if the vapor control system does not exhaust to atmosphere, or if all uncondensed VOC emissions collected by the vapor collection and control system are incinerated in fuel burning equipment, an internal combustion engine, or in a smokeless flare. [District Rule 4401] Federally Enforceable Through Title V Permit
38. The control efficiency of any VOC control device, measured and calculated as carbon, shall be determined by EPA Method 25, except when the outlet concentration must be below 50 ppm in order to meet the standard, in which case EPA Method 25a may be used. EPA Method 18 may be used in lieu of EPA Method 25 or EPA Method 25a provided the identity and approximate concentrations of the analytes/compounds in the sample gas stream are known before analysis with the gas chromatograph and the gas chromatograph is calibrated for each of those known analyte/compound to ensure that the VOC concentrations are neither under- or over-reported. [District Rule 4401] Federally Enforceable Through Title V Permit
39. VOC content shall be determined using the latest revision of ASTM Method E168, E169, or E260 as applicable. Halogenated exempt compounds shall be determined by ARB Method 432. [District Rule 4401] Federally Enforceable Through Title V Permit
40. Permittee shall perform leak inspections at least annually, using a portable hydrocarbon detection instrument in accordance with USEPA Method 21. Where safety is a concern, such as measuring leaks from compressor seals or pump seals when the shaft is rotating, a person shall measure leaks by placing the instrument probe inlet at a distance of one centimeter or less from the surface of the component interface. [District Rule 4401] Federally Enforceable Through Title V Permit
41. VOC content by weight percent (wt.%) shall be determined using American Society of Testing and Materials (ASTM) D1945 for gases and South Coast Air Quality Management District (SCAQMD) Method 304-91 or the latest revision of ASTM Method E168, E169 or E260 for liquids. [District Rule 4401] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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42. Permittee shall maintain an inspection log in which, at a minimum, all of the following information shall be recorded for each inspection performed: 1) The total number of components inspected, and the total number and percentage of leaking components found by component type; 2) The location, type, and name or description of each leaking component and description of any unit where the leaking component is found; 3) The date of leak detection and the method of leak detection; 4) For gaseous leaks, the leak concentration in ppmv, and for liquid leaks record whether the leak is a major liquid leak or a minor liquid leak; 5) The date of repair, replacement, or removal from operation of leaking components; 6) The identify and location of essential components and critical components found leaking that cannot be repaired until the next process unit turnaround or not later than one year after leak detection, whichever comes earlier; 7) The methods used to minimize the leak from essential components and critical components found leaking that cannot be repaired until the next process unit turnaround or not later than one year after leak detection, whichever comes earlier; 8) The date of re-inspection and the leak concentration in ppmv after the component is repaired or is replaced; 9) The inspector's name, business mailing address, and business telephone number; and 10) The date and signature of the facility operator responsible for the inspection and repair program certifying the accuracy of the information recorded in the log. [District Rule 4401] Federally Enforceable Through Title V Permit
43. Permittee shall establish and implement an employee training program for inspecting and repairing components and recordkeeping procedures, as necessary. Permittee shall maintain at the facility the copies of the training records of the training program. [District Rule 4401] Federally Enforceable Through Title V Permit
44. In accordance with the approved OMP, permittee shall meet all applicable operating, leak standards, inspection and re-inspection, leak repair, record keeping, and notification requirements of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
45. By January 30 of each year, permittee shall submit to the APCO for approval, in writing, an annual report indicating any changes to the existing, approved OMP. [District Rule 4401] Federally Enforceable Through Title V Permit
46. Permittee shall maintain a current listing of wells with a packer installed and include the label "Packer" on wells with packers. Wells with a packer are not subject to VOC emissions checks and are not open-ended lines under Rule 4401. [District Rules 2201 and 4401] Federally Enforceable Through Title V Permit
47. The requirements of Rule 4401 do not apply to components serving the produced fluid line. [District Rule 4401] Federally Enforceable Through Title V Permit
48. Except for the requirements of Sections 6.1, 6.6.6, and 7.2 of Rule 4401, the requirements of Rule 4401 shall not apply to the following components: pressure relief devices, pumps, and compressors that are enclosed and whose emissions are controlled with an operating VOC collection and control system, components buried below ground, components used exclusively in vacuum service, and one-half inch nominal or less stainless steel tube fittings which have been demonstrated to the APCO to be leak-free based on initial inspection using EPA Test Method 21. [District Rule 4401] Federally Enforceable Through Title V Permit

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