

# San Joaquin Valley Air Pollution Control District

**PERMIT UNIT:** S-1518-7-6

**EXPIRATION DATE:** 05/31/2019

**SECTION:** SE19 **TOWNSHIP:** 26S **RANGE:** 19E

**EQUIPMENT DESCRIPTION:**

110,000 BBL WELDED EXTERNAL FLOATING ROOF TANK (#110020) WITH METALLIC SHOE PRIMARY AND WIPER TYPE SECONDARY SEALS

## PERMIT UNIT REQUIREMENTS

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1. True vapor pressure of the organic liquid stored shall be less than 11 psia. [District Rules 2201 and 4623] Federally Enforceable Through Title V Permit
2. Annual throughput of this tank shall not exceed 32,010,000 barrels per year. [District Rule 2201] Federally Enforceable Through Title V Permit
3. The tank shall be equipped with a floating roof consisting of a pan type that was installed before December 20, 2001, pontoon-type or double-deck-type cover which rests upon the surface of the liquid being stored and is equipped with a closure device between the tank shell and roof edge consisting of a primary and a secondary seal. [District Rule 4623, 5.3.1 and 40 CFR 60.112b(a)(2) & (i)] Federally Enforceable Through Title V Permit
4. The external floating roof shall float on the surface of the stored liquid at all times (i.e., off the roof leg supports) except during the initial fill until the roof is lifted off the leg supports and when the tank is completely emptied and subsequently refilled. When the roof is resting on the leg supports, the process of filling, emptying, or refilling shall be continuous and shall be accomplished as rapidly as possible. Whenever the permittee intends to land the roof on its legs, the permittee shall notify the APCO in writing at least five calendar days prior to performing the work. The tank must be in compliance with this rule before it may land on its legs. [District Rule 4623, 5.3.1.3 and 40CFR 60.112b(a)(2)(iii)] Federally Enforceable Through Title V Permit
5. This tank shall be equipped with a closure device between the tank shell and roof edge consisting of two seals mounted one above the other; the one below shall be referred to as the primary seal, and the one above shall be referred as the secondary seal. [District Rule 4623] Federally Enforceable Through Title V Permit
6. Primary seal (lower seal) shall be either a mechanical shoe seal or a liquid-mounted seal. [40CFR 60.112b(a)(2)(i) and 60.112b(a)(2)(i)(A)] Federally Enforceable Through Title V Permit
7. Operators of floating roof tanks shall submit a tank inspection plan to the APCO for approval. The plan shall include an inventory of the tanks subject to this rule and a tank inspection schedule. A copy of the operator's tank safety procedures shall be made available to the APCO upon request. The tank inventory shall include tank's identification number, PTO number, maximum tank capacity, dimensions of tank (height and diameter), organic liquid stored, type of primary and secondary seal, type of floating roof (internal or external floating roof), construction date of tank, and location of tank. Any revision to a previously approved tank inspection schedule shall be submitted to the APCO for approval prior to conducting an inspection. [District Rule 4623] Federally Enforceable Through Title V Permit
8. Accumulated area of gaps between the tank wall and the mechanical shoe or liquid-mounted primary seal shall not exceed 212 cm<sup>2</sup> per meter (10.01 in<sup>2</sup> per foot) of tank diameter, and the width of any gap shall not exceed 3.81 cm (1.5 inches). [40CFR 60.113b(b)(4)(i)] Federally Enforceable Through Title V Permit
9. Gaps between the tank shell and the primary seal shall not exceed 1 1/2 inches. [District Rule 4623, 5.3.2.1.1] Federally Enforceable Through Title V Permit

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10. The cumulative length of all gaps between the tank shell and the primary seal greater than 1/2 inch shall not exceed 10% of the circumference of the tank. [District Rule 4623, 5.3.2.1.1] Federally Enforceable Through Title V Permit
11. The cumulative length of all primary seal gaps greater than 1/8 inch shall not exceed 30% of the circumference of the tank. [District Rule 4623, 5.3.2.1.1] Federally Enforceable Through Title V Permit
12. No continuous gap in the primary seal greater than 1/8 inch wide shall exceed 10% of the tank circumference. [District Rule 4623, 5.3.2.1.1] Federally Enforceable Through Title V Permit
13. Accumulated area of gaps between the tank wall and the secondary seal shall not exceed 21.2 cm<sup>2</sup> per meter (1.00 in<sup>2</sup> per foot) of tank diameter, and the width of any portion of any gap shall not exceed 1.27 cm (1/2 inch). [District Rule 4623, 5.3.2.1.2 and 40CFR 60.113b(b)(4)(ii)(B)] Federally Enforceable Through Title V Permit
14. The cumulative length of all gaps between the tank shell and the secondary seal, greater than 1/8 inch shall not exceed 5% of the tank circumference. [District Rule 4623, 5.3.2.1.2] Federally Enforceable Through Title V Permit
15. The metallic shoe-type seal shall be installed so that one end of the shoe extends into the stored liquid and the other end extends a minimum vertical distance of 24 inches above the stored liquid surface. [District Rule 4623, 5.3.2.1.3] Federally Enforceable Through Title V Permit
16. The geometry of the metallic-shoe type seal shall be such that the maximum gap between the shoe and the tank shell shall be no greater than 3 inches for a length of at least 18 inches in the vertical plane above the liquid. [District Rule 4623, 5.3.2.1.4] Federally Enforceable Through Title V Permit
17. There shall be no holes, tears, or openings in the secondary seal or in the primary seal envelope that surrounds the annular vapor space enclosed by the roof edge, seal fabric, and secondary seal. [District Rule 4623, 5.3.2.1.5 and 40 CFR 60.112b(b)(4)(ii)(C)] Federally Enforceable Through Title V Permit
18. The secondary seal shall allow easy insertion of probes of up to 1 1/2 inches in width in order to measure gaps in the primary seal. [District Rule 4623, 5.3.2.1.6] Federally Enforceable Through Title V Permit
19. The secondary seal shall extend from the roof to the tank shell and shall not be attached to the primary seal. [District Rule 4623, 5.3.2.1.7] Federally Enforceable Through Title V Permit
20. Secondary seal shall completely cover the annular space between the external floating roof and the wall of the storage vessel in a continuous fashion. [40CFR 60.112b(a)(2)(i)(B)] Federally Enforceable Through Title V Permit
21. All openings in the roof used for sampling and gauging, except pressure-vacuum valves which shall be set to within 10% of the maximum allowable working pressure of the roof, shall provide a projection below the liquid surface to prevent belching of liquid and to prevent entrained or formed organic vapor from escaping from the liquid contents of the tank and shall be equipped with a cover, seal or lid that shall be in a closed position at all times, with no visible gaps and be gas tight, except when the device or appurtenance is in use [District Rule 4623, 5.5.1] Federally Enforceable Through Title V Permit
22. A leak free condition is defined as a condition without a gas leak. A gas leak is defined as a reading in excess of 10,000 ppmv, above background, as measured by a portable hydrocarbon detection instrument in accordance with the procedures specified in EPA Test Method 21. A reading in excess of 10,000 ppmv above background is a violation of this permit and Rule 4623 and shall be reported as a deviation. [District Rule 4623, 3.9 and 6.4.8] Federally Enforceable Through Title V Permit
23. Except for automatic bleeder vents, rim vents, and pressure relief vents, each opening in a non-contact external floating roof shall provide a projection below the liquid surface. [District Rule 4623, 5.5.2.2.1] Federally Enforceable Through Title V Permit
24. Except for automatic bleeder vents and rim vents, roof drains, and leg sleeves, each opening in the roof shall be equipped with a gasketed cover, seal, or lid that shall be maintained in a closed position at all times (i.e., no visible gap) except when in actual use. [District Rule 4623, 5.5.2.2.2] Federally Enforceable Through Title V Permit
25. Automatic bleeder vents shall be equipped with a gasket and shall be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports. [District Rule 4623, 5.5.2.2.3, 5.5.2.1.3 and 40CFR 60.112b(a)(2)(ii)] Federally Enforceable Through Title V Permit

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26. Rim vents shall be equipped with a gasket and shall be set to open when the roof is being floated off the roof leg supports or at the manufacturer's recommended setting. [District Rule 4623, 5.5.2.2.4 and 40CFR 60.112b(a)(2)(ii)] Federally Enforceable Through Title V Permit
27. Each roof drain that drains rainwater into the contents of the tank shall be provided with an impermeable slotted membrane fabric cover that covers at least 90 percent of the area of the opening. [District Rule 4623, 5.5.2.2.5] Federally Enforceable Through Title V Permit
28. External floating roof legs shall be equipped with vapor socks or vapor barriers in order to maintain a gas-tight condition so as to prevent VOC emissions from escaping through the roof leg opening. [District Rule 4623, 5.5.2.2.6] Federally Enforceable Through Title V Permit
29. All wells and similar fixed projections through the floating roof shall provide a projection below the liquid surface. [District Rule 4623, 5.5.2.3.1] Federally Enforceable Through Title V Permit
30. The solid guidepole well shall be equipped with a pole wiper and a gasketed cover, seal or lid which shall be in a closed position at all times (i.e., no visible gap) except when the well is in use. [District Rule 4623, 5.5.2.3.2] Federally Enforceable Through Title V Permit
31. The gap between the pole wiper and the solid guidepole shall be added to the gaps measured to determine compliance with the secondary seal requirement, and in no case shall exceed 1/2 inch. [District Rule 4623, 5.5.2.3.2] Federally Enforceable Through Title V Permit
32. The slotted guidepole well on the external floating roof shall be equipped with the following: a sliding cover, a well gasket, a pole sleeve, a pole wiper, and an internal float and float wiper designed to minimize the gap between the float and the well, and provided the gap shall not exceed 1/8 inch; or shall be equipped with a well gasket, a zero gap pole wiper seal and a pole sleeve that projects below the liquid surface. [District Rule 4623, 5.5.2.4.2] Federally Enforceable Through Title V Permit
33. The gap between the pole wiper and the slotted guidepole shall be added to the gaps measured to determine compliance with the secondary seal requirement, and in no case shall exceed 1/8 inch. [District Rule 4623, 5.5.2.4.3] Federally Enforceable Through Title V Permit
34. The permittee shall make the primary seal envelope available for unobstructed inspection by the APCO on an annual basis at locations selected along its circumference at random by the APCO. In the case of riveted tanks with toroid-type seals, a minimum of eight locations shall be made available; in all other cases, a minimum of four locations shall be made available. If the APCO suspects a violation may exist the APCO may require such further unobstructed inspection of the primary seal as may be necessary to determine the seal condition for its entire circumference. [District Rule 4623, 6.1.1] Federally Enforceable Through Title V Permit
35. Operator shall perform gap measurements on primary and secondary seals within 60 days of the initial fill and at least once every year thereafter to determine compliance with the requirements of Rule 4623. The actual gap measurements of the floating roof primary and secondary seals shall be recorded. The inspection results shall be submitted to the APCO as specified in Section 6.3.5. [District Rule 4623, 6.1.3.1.1 and 40 CFR 60.113b(b)(1)(i) & (ii)] Federally Enforceable Through Title V Permit
36. Operator shall also perform gap measurements on primary seals during hydrostatic testing of the vessel. [40CFR 60.113b(b)(1)(i)] Federally Enforceable Through Title V Permit
37. If unit is out of service for a period of one year or more, subsequent refilling with volatile organic liquid shall be considered initial fill in accordance with the conditions of this permit. [40CFR60.113b(b)(1)(iii)] Federally Enforceable Through Title V Permit
38. The permittee shall inspect the primary and secondary seals for compliance with the requirements of Rule 4623 every time this tank is emptied or degassed. Actual gap measurements shall be performed when the liquid level is static but not more than 24 hours after the tank roof is re-floated. [District Rule 4623, 6.1.3.1.2 and 40CFR 60.113b(b)(6)] Federally Enforceable Through Title V Permit

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39. The permittee shall submit the reports of the floating roof tank inspections to the APCO within five calendar days after the completion of the inspection only for those tanks that failed to meet the applicable requirements of Rule 4623, Sections 5.2 through 5.5. The inspection report for tanks that have been determined to be in compliance with the requirements of Sections 5.2 through 5.5 need not be submitted to the APCO, but the inspection report shall be kept on-site and made available upon request by the APCO. The inspection report shall contain all necessary information to demonstrate compliance with the provisions of this rule, including the following: 1) Date of inspection and names and titles of company personnel doing the inspection. 2) Tank identification number and Permit to Operate number. 3) Measurements of the gaps between the tank shell and primary and secondary seals. 4) Gas-tight status of the tank and floating roof deck fittings. Records of the gas-tight status shall include the vapor concentration values measured in parts per million by volume (ppmv). 5) Data, supported by calculations, demonstrating compliance with the requirements specified in Sections 5.3, 5.5.2.3.3, 5.5.2.4.2, and 5.5.2.4.3 of Rule 4623. 6) Any corrective actions or repairs performed on the tank in order to comply with rule 4623 and the date(s) such actions were taken. [District Rule 4623, 6.3.5] Federally Enforceable Through Title V Permit
40. Permittee shall maintain the records of the external floating roof landing activities that are performed pursuant to Rule 4623, Sections 5.3.1.3 and 5.4.3. The records shall include information on the maximum true vapor pressure (TVP), API gravity, storage temperature, type of organic liquid stored in the tank, the purpose of landing the roof on its legs, the date of roof landing, duration the roof was on its legs, the level or height at which the tank roof was set to land on its legs, and the lowest liquid level in the tank. [District Rule 4623, 6.3.7 and 40 CFR 60.116b(c)] Federally Enforceable Through Title V Permit
41. All covers, seals and lids covering openings in the roof used for sampling and gauging, except pressure-vacuum valves set to within 10 percent of the maximum allowable working pressure of the roof, shall be inspected annually by the facility operator to ensure compliance with the provisions of this permit. However, if one or more of the components are found to leak during an annual inspection, the inspection frequency for that component type shall be changed from annual to quarterly. If none of the components of that type 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 upon detection. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
42. Operator shall determine the presence of VOC leaks by EPA Method 21. The instrument shall be calibrated before use each day of its use by the procedures specified in Method 21 using the following calibration gases; 1.) Zero air (less than 10 ppm of hydrocarbon in air); and 2.) A mixture of methane or n-hexane and air at a concentration of about, but less than, 10,000 ppm methane or n-hexane. [40 CFR 60.112b(a)(3)(i)] Federally Enforceable Through Title V Permit
43. 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. Leaks over 10,000 ppmv shall be reported as a deviation. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
44. Operator shall notify the APCO 30 days in advance of any gap measurements required by this permit to afford the APCO opportunity to have an observer present. [40CFR 60.113b(b)(5)] Federally Enforceable Through Title V Permit
45. If the external floating roof has defects, or the primary seal or secondary seal has holes, tears, or other openings in the seal or seal fabric, the operator shall repair the items as necessary so that none of these conditions exist before filling or refilling the storage vessel with VOL. [40CFR 60.113b(b)(6)(i)] Federally Enforceable Through Title V Permit
46. For all visual inspections required by this permit, the operator shall notify the APCO in writing at least 30 days prior to the filling or refilling of each storage vessel to afford the APCO the opportunity to inspect the storage vessel prior to refilling, except when notification is specifically allowed otherwise by this permit. [40CFR 60.113b(b)(6)(ii)] Federally Enforceable Through Title V Permit

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47. If a visual inspection required by this permit is not planned and the operator could not have known about the inspection 30 days in advance of refilling the tank, the operator shall notify the APCO at least 7 days prior to the refilling of the storage vessel. Notification shall be made by telephone immediately followed by written documentation demonstrating why the inspection was unplanned. Alternatively, this notification including the written documentation may be made in writing and sent by express mail so it is received by the APCO at least 7 days prior to the refilling. [40CFR 60.113b(b)(6)(ii)] Federally Enforceable Through Title V Permit
48. Operator shall record the vessel on which the measurement was performed, date of the seal gap measurement, raw data obtained in the measurement process in accordance with the conditions of this permit. [40CFR 60.115b(b)(3)] Federally Enforceable Through Title V Permit
49. Within 60 days of performing the seal gap measurements required by this permit, the operator shall furnish the APCO with a report containing the date of measurement, raw data obtained in the measurement process, and all such gap calculations as required by this permit. [40CFR 60.115b(b)(2)] Federally Enforceable Through Title V Permit
50. After each seal gap measurement that detects gaps exceeding any limit of this permit, the operator shall submit a report to the APCO within 30 days of the inspection. The report will identify the vessel and contain the date of measurement, raw data obtained in the measurement process, all such gap calculations as required by this permit, and the date the vessel was emptied or the repairs made and the date of repair. [40CFR 60.115b(b)(4)] Federally Enforceable Through Title V Permit
51. If the seals do not meet the required specifications of this permit, operator shall repair or empty the storage vessel within 45 days of identification. [40CFR 60.113b(b)(4)] Federally Enforceable Through Title V Permit
52. Operator shall maintain a record showing the dimension of the storage vessel and an analysis showing the capacity of the storage vessel. The record shall be maintained for the life of the vessel. [40 CFR 60.116b(b)] Federally Enforceable Through Title V Permit
53. Operator shall determine the true vapor pressure of each type of crude oil with a Reid vapor pressure less than 2.0 psia or whose physical properties preclude determination by the recommended method from available data and record if the true vapor pressure is greater than 0.5 psia. [40 CFR 60.116b(e)(2)(ii)] Federally Enforceable Through Title V Permit
54. Operator shall determine the true vapor pressure of each VOL, other than crude oil or refined petroleum products, from standard reference texts, by ASTM Method D2879, or by using an appropriate method approved by EPA. [40 CFR 60.116b(e)(3)(iii)] Federally Enforceable Through Title V Permit
55. For storage vessels operated above or below ambient temperatures, the operator shall calculate the maximum true vapor pressure based upon the highest expected calendar-month average of the storage temperature. For vessels operated at ambient temperatures, the maximum true vapor pressure is calculated based upon the maximum local monthly average ambient temperature as reported by the National Weather Service. [40 CFR 60.116b(e)(1)] Federally Enforceable Through Title V Permit
56. Maximum true vapor pressure, for crude oil or refined petroleum products, may be determined from nomographs contained in API Bulletin 2517, by using the typical Reid vapor pressure and the maximum expected storage temperature based on the highest expected calendar-month average temperature of the stored product, unless the APCO specifically requests that the liquid be sampled, the actual storage temperature determined, and the Reid vapor pressure determined from the sample(s). [40 CFR 60.116b(e)(2)(i)] Federally Enforceable Through Title V Permit
57. Operator of a tank storing a waste mixture of indeterminate or variable composition shall determine the highest maximum true vapor pressure for the range of liquid compositions to be stored prior to the initial filling, using methods specified for maximum true vapor pressure in this permit. [40CFR 60.116b(f)] Federally Enforceable Through Title V Permit
58. Operator shall determine the true vapor pressure of each type of crude oil, with a Reid vapor pressure less than 2.0 psia or whose physical properties preclude determination by the recommended method, using available data and record if the estimated maximum true vapor pressure is greater than 0.5 psia. [40 CFR 60.116b(e)(2)] Federally Enforceable Through Title V Permit
59. Permittee shall conduct true vapor pressure (TVP) testing of the organic liquid whenever there is a change in the source or type of organic liquid stored in this tank. [District Rule 2520] Federally Enforceable Through Title V Permit

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60. As used in this permit, the term "source or type" shall mean liquids with similar characteristics. The operator shall maintain records of API gravity of petroleum liquids stored in this unit to determine which are from common source. [District Rule 2520] Federally Enforceable Through Title V Permit
61. The API gravity of crude oil or petroleum distillate shall be determined by using ASTM Method D 287 e1 "Standard Test Method for API gravity of Crude Petroleum and Petroleum Products (Hydrometer Method)". Sampling for API gravity shall be performed in accordance with ASTM Method D 4057 "Standard Practices for Manual Sampling of Petroleum and Petroleum Products". [District Rules 2201 and 4623] Federally Enforceable Through Title V Permit
62. For crude oil with an API gravity of 26 degrees or less, the TVP shall be determined using the latest version of the Lawrence Berkeley National Laboratory "Test Method for Vapor Pressure of Reactive Organic Compounds in Heavy Crude Oil Using Gas Chromatograph", as approved by ARB and EPA. [District Rules 2201 and 4623] Federally Enforceable Through Title V Permit
63. For any organic liquid, except crude oil with an API gravity of 26 degrees or less, the true vapor pressure (TVP) shall be determined by measuring Reid Vapor Pressure (RVP) with ASTM Method D 323 and converting the RVP to TVP at the tank's maximum organic liquid storage temperature. The conversion of RVP to TVP shall be done in accordance with the oil and gas section of "California Air Resources Boards (ARB) Technical Guidance Document to the Criteria and Guidelines Regulation for AB 2588", dated August 1989. As an alternative to using ASTM D 323, the TVP of crude oil with an API gravity range of greater than 26 degrees up to 30 degrees may be determined by using other equivalent test methods approved by APCO, ARB and EPA. [District Rules 2201 and 4623] Federally Enforceable Through Title V Permit
64. Permittee shall maintain accurate records of true vapor pressure (TVP), storage temperature, type of liquids stored, and daily tank throughput. [District Rules 2201 and 4623 and 40 CFR 60.115a(a)] Federally Enforceable Through Title V Permit
65. Permittee shall submit the records of TVP and API gravity testing to the APCO within 45 days after the date of testing. The records shall include the tank identification number, Permit to Operate number, type of stored organic liquid, TVP and API gravity of the organic liquid, test methods used, and a copy of the test results. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
66. Permittee shall keep annual records of the throughput of this tank. [District Rule 2201] Federally Enforceable Through Title V Permit
67. All records required for monitoring data and support information for inspection shall be maintained for a period of at least five years and shall be made readily available for District inspection upon request. [District Rule 2520] Federally Enforceable Through Title V Permit
68. Operator of each storage vessel, either with a design capacity greater than or equal to 151 m<sup>3</sup> (39,890 gallons) storing a liquid with a maximum true vapor pressure that is normally less than 0.75 psia or with a design capacity greater than or equal to 75 m<sup>3</sup> (19,813 gallons) but less than 151 m<sup>3</sup> (39,890 gallons) storing a liquid with a maximum true vapor pressure normally less than 4.0 psia, shall notify the APCO within 30 days when the maximum true vapor pressure of the liquid exceeds the respective maximum true vapor pressure values for each volume range. [40CFR 60.116b(d)] Federally Enforceable Through Title V Permit

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