



APR 26 2012

Bill Oliver
San Joaquin Facilities Management
4520 California Avenue, Suite 300
Bakersfield, CA 93309

Re: Notice of Preliminary Decision - Emission Reduction Credits
Project Number: S-1120327

Dear Mr. Oliver:

Enclosed for your review and comment is the District's analysis of San Joaquin Facilities Management's application for Emission Reduction Credits (ERCs) resulting from the shutdown of two tanks and replacing them with tanks on vapor recovery and control system at their Heavy Oil Central stationary source in Kern County. The quantity of ERCs proposed for banking is 899 lb-VOC/yr.

The notice of preliminary decision for this project will be published approximately three days from the date of this letter. Please submit your written comments on this project within the 30-day public comment period which begins on the date of publication of the public notice.

Thank you for your cooperation in this matter. If you have any questions regarding this matter, please contact Ms. Dolores Gough of Permit Services at (661) 392-5609.

Sincerely,

David Warner
Director of Permit Services

DW: DG/cm

Enclosures

Seyed Sadredin
Executive Director/Air Pollution Control Officer

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

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

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



San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT



HEALTHY AIR LIVING™

APR 26 2012

Mike Tollstrup, Chief
Project Assessment Branch
Stationary Source Division
California Air Resources Board
PO Box 2815
Sacramento, CA 95812-2815

Re: Notice of Preliminary Decision - Emission Reduction Credits
Project Number: S-1120327

Dear Mr. Tollstrup:

Enclosed for your review and comment is the District's analysis of San Joaquin Facilities Management's application for Emission Reduction Credits (ERCs) resulting from the shutdown of two tanks and replacing them with tanks on vapor recovery and control system, at their Heavy Oil Central stationary source in Kern County. The quantity of ERCs proposed for banking is 899 lb-VOC/yr.

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San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT



HEALTHY AIR LIVING™

APR 26 2012

Gerardo C. Rios (AIR 3)
Chief, Permits Office
Air Division
U.S. E.P.A. - Region IX
75 Hawthorne Street
San Francisco, CA 94105

**Re: Notice of Preliminary Decision - Emission Reduction Credits
Project Number: S-1120327**

Dear Mr. Rios:

Enclosed for your review and comment is the District's analysis of San Joaquin Facilities Management's application for Emission Reduction Credits (ERCs) resulting from the shutdown of two tanks and replacing them with tanks on vapor recovery and control system, at their Heavy Oil Central stationary source in Kern County. The quantity of ERCs proposed for banking is 899 lb-VOC/yr.

The notice of preliminary decision for this project will be published approximately three days from the date of this letter. Please submit your written comments on this project within the 30-day public comment period which begins on the date of publication of the public notice.

Thank you for your cooperation in this matter. If you have any questions regarding this matter, please contact Ms. Dolores Gough of Permit Services at (661) 392-5609.

Sincerely,

David Warner
Director of Permit Services

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**NOTICE OF PRELIMINARY DECISION
FOR THE PROPOSED ISSUANCE OF
EMISSION REDUCTION CREDITS**

NOTICE IS HEREBY GIVEN that the San Joaquin Valley Unified Air Pollution Control District solicits public comment on the proposed issuance of Emission Reduction Credits to San Joaquin Facilities Management for the shutdown of two tanks and replacing them with tanks on vapor recovery and control system, at Heavy Oil Central stationary source in Kern County. The quantity of ERCs proposed for banking is 899 lb-VOC/yr.

The analysis of the regulatory basis for this proposed action, Project #S-1120327, is available for public inspection at http://www.valleyair.org/notices/public_notices_idx.htm and the District office at the address below. Written comments on this project must be submitted within 30 days of the publication date of this notice to **DAVID WARNER, DIRECTOR OF PERMIT SERVICES, SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT, 34946 FLYOVER COURT, BAKERSFIELD, CA 93308.**

ERC BANKING APPLICATION REVIEW

Facility Name: San Joaquin Management Facilities
Mailing Address: 5400 Rosedale Hwy
Bakersfield, CA 93389

Contact Name: Bill Oliver or Michael Walsh
Telephone: (661) 631-8713 or 377-0073 x 14

Engineer: Dolores Gough
Date: April 11, 2012

Lead Engineer: Richard Karrs *RWK 4-12-12*
Supervising AQE

Project #: S-1120327

I. SUMMARY:

San Joaquin Facilities Management (SJFM) submitted an application to bank emission reduction credits (ERCs) for the decrease in VOC emissions from two crude oil storage tanks, S-1427-22-0 and '23-0 on February 6, 2012. The decrease resulted from the shutdown and replacement of these tanks with tanks S-1427-47 and '48 on vapor control.

The following VOC emissions reductions have been determined to be eligible for emissions reduction credit banking certificate:

VOC (lb/qtr)				
ERC #	1 st Qtr	2 nd Qtr	3 rd Qtr	4 th Qtr
S-3801-1	228	225	223	223

II. APPLICABLE RULES:

Rule 2201 New and Modified Stationary Source Review Rule (4/21/11)
Rule 2301 Emission Reduction Credit Banking (01/19/12)
Rule 4623 Storage of Organic Liquids (5/19/05)

III. PROJECT LOCATION:

The surplus emission reductions generated by the shutdown of two storage tanks occurred at SJFM's Heavy Oil Central stationary source in the SW/4 of Section 22, T29S, R27E in Kern County.

IV. METHOD OF GENERATING REDUCTIONS:

Actual Emissions Reductions (AER) were generated by the voluntary shutdown of Tanks '-22 and '-23 at SJFM's Heavy Oil Central stationary source (S-1427). These tanks were replaced with two similar capacity-tanks equipped with vapor control. Installation of the new tanks were authorized by Authority to Construct (ATC) permits S-1427-47-0 and '-48-0, which were issued on June 23, 2008 and inspected by the District on July 27, 2011. Subsequent to their implementation, the permits were modified under ATC S-1427-47-1 and '-48-1 to revise the emission factors used in calculating the VOC emissions from the EPA average emissions factors to the CAPCOA screening level (no leak) emissions factors. The new ATCs were issued on March 22, 2012 and have not yet been converted to Permit to Operate (PTOs).

To validate the requested ERCs, the PTO for S-1427-22 and '-23 have been cancelled. The permits involved in this project are:

- PTO S-1427-22-0: ONE 83,160 GALLON FIXED-ROOF PETROLEUM STORAGE TANK #4
- PTO S-1427-23-0: ONE 83,160 GALLON FIXED-ROOF PETROLEUM STORAGE TANK #6
- ATC S-1427-47-0: ONE 84,000 GALLON FIXED-ROOF PETROLEUM STOCK TANK CONNECTED TO VAPOR RECOVERY SYSTEM
- ATC S-1427-48-0: ONE 84,000 GALLON FIXED-ROOF PETROLEUM WASH TANK #2 CONNECTED TO VAPOR RECOVERY SYSTEM LISTED ON '-47
- ATC S-1427-47-1: MODIFICATION OF ONE 84,000 GALLON FIXED-ROOF PETROLEUM STOCK TANK CONNECTED TO VAPOR RECOVERY SYSTEM: REVISE COMPONENT COUNTS AND FUGITIVE EMISSIONS FACTORS FROM EPA AVERAGE EMISSIONS FACTORS TO CAPCOA SCREENING LEVEL (NO LEAK) EMISSIONS FACTORS
- ATC S-1427-48-1: MODIFICATION OF ONE 84,000 GALLON FIXED-ROOF PETROLEUM WASH TANK #2 CONNECTED TO VAPOR RECOVERY SYSTEM LISTED ON '-47: REVISE COMPONENT COUNTS AND FUGITIVE EMISSIONS FACTORS FROM EPA AVERAGE EMISSIONS FACTORS TO CAPCOA SCREENING LEVEL (NO LEAK) EMISSIONS FACTORS

As required by Rules 2201 & 2301, creditable emission reductions are to be based upon the storage tanks' operating history over the appropriate baseline period, and the use of acceptable emission factors.

Attachment A: PTOs and ATCs for subject tanks

Attachment B: Tank Location Diagrams

V. ERC CALCULATIONS:

A. Emission Factors and Assumptions:

- Vapor pressure of crude oil by the HOST method is 0.059 psia (laboratory results - Attachment C).
- Historical oil throughputs of the tanks are from inventory records provided by the applicant (Attachment D).
- Baseline period was based on historical oil throughput using consecutive two years of operation prior to the submission date of the Complete Application (2009 and 2010, Attachment D)
- Historical crude oil tank emissions are based on the results from the District's spreadsheet for Tank Emissions - Fixed Roof Crude Oil less than 26° API located in Attachment E. The spreadsheet for tanks was developed using the equations for fixed-roof tanks from EPA AP-42, Chapter 7.1.
- Tank 23 was operated as a constant level wash tank. Emissions from this tank were "standing loss" only. Oil separated from the wash tank was processed in stock tank 22.
- Fugitive emissions from the replacement tanks with vapor control are estimated based on component counts provided by the applicant and the emission factors from "California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities" Table IV-2c - Oil and Gas Production Screening Value Ranges Emission Factors. The fugitive component counts and emissions calculations are included as Attachment E.

B. Baseline Period Determination and Data

Per Section 3.8 of Rule 2201, Baseline Period is defined as:

1. The two consecutive years of operation immediately prior to the submission date of the Complete Application; or
2. At least two consecutive years within the five years immediately prior to the submission date of the Complete Application if determined by the APCO as more representative of *normal source operation (NSO)*;
or

3. A shorter period of at least one year if the emissions unit has not been in operation for two years and this represents the full operational history of the emissions unit, including any replacement units; or
4. Zero years if an emissions unit has been in operation for less than one year (only for use when calculating Actual Emissions Reductions).

Rule 2301 titled "Emissions Reduction Credit Banking" defines Baseline Period as "the same period as defined in Rule 2201".

As the old tanks were taken out of service in October 2011, the annual throughput in 2011 was not available. Therefore, the baseline period used is the two consecutive years (2009 and 2010) prior to the submission date of the complete application (2/17/2012). Because oil production was relatively constant during the baseline period, the annual throughput was divided by 4 to get the throughput per quarter.

Average Quarterly and Daily Oil Throughput (bbl)				
	Q1 (Jan-Mar)	Q2 (Apr-Jun)	Q3 (Jul –Sep)	Q4 (Oct-Dec)
2009	36,247	36,247	36,247	36,247
2010	35,136	35,136	35,136	35,136
Quarterly Average	35,692	35,692	35,692	35,692
Daily Average*	397	392	388	388

* Daily average is the quarterly average divided by the number of days in the specific quarter.

C. Historical Actual Emissions (HAE)

The historical emissions were calculated using the District's spreadsheet for Tank Emissions - Fixed Roof Crude Oil less than 26° API as shown in Attachment E and summarized below:

Quarterly Historical Emissions ** (lb-VOC/qtr)				
	Q1 (Jan-Mar)	Q2 (Apr-Jun)	Q3 (Jul –Sep)	Q4 (Oct-Dec)
S-1427-22	256	253	251	251
S-1427-23	15	15	15	15
Total	271	268	266	266

** The quarterly historical emissions were calculated by dividing the annual emissions by 4 (Annual HAE ÷ 4), see Attachment E for annual HAE..

D. Actual Emissions Reductions (AER)

Pursuant to Section 3.2 of Rule 2201, AER shall be real, surplus, permanent, quantifiable & enforceable. AER is calculated per subsection 4.12 as follows:

$$\text{AER} = \text{HAE} - \text{PE2}$$

Where: HAE = Historic Actual Emissions
PE2 = Post-Project Potential to Emit

The VOC emissions have been reduced by the closure of the tanks and addition of vapor control to the replacement tanks. The post-project potential to emit (PE2) is calculated based on component counts and the emission factors from the "California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities" Table IV-2c - Oil and Gas Production Screening Value Ranges Emission Factors as shown in Attachment E and summarized below.

**Post-Project Potential to Emit (PE2), lb-VOC/qtr				
	Q1 (Jan-Mar)	Q2 (Apr-Jun)	Q3 (Jul –Sep)	Q4 (Oct-Dec)
S-1427-47	9	9	9	9
S-1427-48	9	9	9	9
Total PE2	18	18	18	18

** The quarterly PE 2 was based on calculated annual emissions (Annual PE2 ÷ 4), Attachment E.

The AER is calculated below using the equation: $\text{AER} = \text{HAE} - \text{PE2}$

Post-Project Potential to Emit (lb-VOC/qtr)				
	Q1 (Jan-Mar)	Q2 (Apr-Jun)	Q3 (Jul –Sep)	Q4 (Oct-Dec)
HAE	271	268	266	266
PE2	18	18	18	18
AER	253	250	248	248

The Air Quality Improvement Deduction (AQID) is 10% of the AER per Rule 2201, Sections 3.5 and 4.12.1 as shown below:

Post-Project Potential to Emit (lb-VOC/qtr)				
	Q1 (Jan-Mar)	Q2 (Apr-Jun)	Q3 (Jul –Sep)	Q4 (Oct-Dec)
AER	253	250	248	248
AQID (10%)	25	25	25	25

E. Bankable Emissions Reductions Credits

To obtain the bankable emissions, the AQID is subtracted from the AER as shown below:

Bankable Emissions (lb-VOC/qtr)				
	Q1 (Jan-Mar)	Q2 (Apr-Jun)	Q3 (Jul –Sep)	Q4 (Oct-Dec)
AER	253	250	248	248
AQID (10%)	25	25	25	25
Bankable Emissions	228	225	223	223

VI. COMPLIANCE:

To be eligible for banking, emission reduction credits must be verified as real, enforceable, quantifiable, permanent, and surplus pursuant to District Rules 2201 and 2301. In addition the application must be submitted within a timely manner specified in Rule 2301.

A. Real

Surrendering permits and installation of vapor control system caused real emission reductions to occur. The replacement tanks ('-47 and -48) for tanks ('-23 and -23) were inspected by the District on July 27, 2011. Tanks '-22 and -23 have been taken out of service and their PTOs have been cancelled; therefore, the reductions are real.

B. Enforceable

The PTOs for the old tanks were cancelled and enforceable ATCs were issued lowering the permitted emissions of the replacement tanks in compliance with the provisions of District Rule 2201. The quantified AER's are enforceable.

C. Quantifiable

The AERs were calculated using District recognized emission factors and actual production data; therefore, the reductions are quantifiable.

D. Permanent

The current PTOs of the replacement tanks had emissions limits and conditions requiring the tanks to operate with vapor recovery system. These requirements were retained in the newly issued ATCs ('-47-1 and -48-1) to ensure that the emissions reductions from the affected tanks are permanent. Therefore, the reductions are permanent.

E. Surplus

Installation of the vapor recovery system for the replacement tanks was voluntary. The resulting emission reductions are not mandated by any law, rule, regulation, agreement, or order of the District, State, or Federal Government. The reductions are not attributed to a control measure noticed for workshop or proposed, nor contained in a State Implementation Plan.

The old tanks have been taken out of service and the replacement tanks operate under Permits to Operate issued by the District. They will not be modified without first obtaining Authorities to Construct and satisfying all applicable New Source Review requirements. Therefore, the reductions are surplus.

District Rule 4623 (Storage of Organic Liquids)

The tanks that were replaced were subject to Rule 4623; but, as they exclusively stored oil with a TVP of less than 0.5 psia, they were exempt from the rule requirements except for periodic TVP and API gravity testing and recordkeeping. Copies of the ATCs are included as Appendix F.

F. Timeliness

The application for ERC was submitted to the District on February 6, 2012. The ATCs to replace the vapor recovery and control system were implemented on July 27, 2011. The old tanks were taken out of service in October 2011 and the PTOs have been cancelled. Pursuant to Rule 2301, Section 4.2.3, an application for ERC must be filed no later than 180 days after the emission reductions have occurred.

VII. RECOMMENDATION:

Issue the requested ERC Banking Certificate to San Joaquin Facilities Management, Inc. after completion of the required 30-day public notification period, and review of comments received, for the following amounts:

Bankable Emissions (lb-VOC/qtr)				
	Q1 (Jan-Mar)	Q2 (Apr-Jun)	Q3 (Jul –Sep)	Q4 (Oct-Dec)
Bankable Emissions	228	225	223	223

Attachments:

- A: Subject PTOs and ATCs
- B: Tank Location Diagrams
- C: Crude Oil Vapor Pressure Laboratory Analysis
- D: Historical Tank Throughputs
- E: Emissions Calculations
- F: Draft ERCs

Attachment A

Subject PTOs and ATCs

San Joaquin Valley Air Pollution Control District

PERMIT UNIT: S-1427-22-0

EXPIRATION DATE: 04/30/2015

SECTION: 22 **TOWNSHIP:** 29S **RANGE:** 27E

EQUIPMENT DESCRIPTION:

ONE 83,160 GALLON FIXED-ROOF PETROLEUM STORAGE TANK #4

PERMIT UNIT REQUIREMENTS

1. 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]
2. Permittee shall conduct true vapor pressure (TVP) testing of the organic liquid stored in this tank at least once every 24 months during summer (July - September), and/or whenever there is a change in the source or type of organic liquid stored in this tank in order to maintain exemption from the rule. [District Rule 4623]
3. 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 Rule 4623]
4. 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 Rule 4623]
5. The TVP testing shall be conducted at actual storage temperature of the organic liquid in the tank. The permittee shall also conduct an API gravity testing. [District Rule 4623]
6. 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 Rule 4623]
7. The permittee shall keep accurate records of each organic liquid stored in the tank, including its storage temperature, TVP, and API gravity. [District Rule 4623]
8. All records required to be maintained by this permit shall be maintained for a period of at least five years and shall be made readily available for District inspection upon request. [District Rule 4623]

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

San Joaquin Valley Air Pollution Control District

PERMIT UNIT: S-1427-23-0

EXPIRATION DATE: 04/30/2015

SECTION: 22 TOWNSHIP: 29S RANGE: 27E

EQUIPMENT DESCRIPTION:

ONE 83,160 GALLON FIXED-ROOF PETROLEUM STORAGE TANK #6

PERMIT UNIT REQUIREMENTS

1. 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]
2. Permittee shall conduct true vapor pressure (TVP) testing of the organic liquid stored in this tank at least once every 24 months during summer (July - September), and/or whenever there is a change in the source or type of organic liquid stored in this tank in order to maintain exemption from the rule. [District Rule 4623]
3. 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 Rule 4623]
4. 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 Rule 4623]
5. The TVP testing shall be conducted at actual storage temperature of the organic liquid in the tank. The permittee shall also conduct an API gravity testing. [District Rule 4623]
6. 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 Rule 4623]
7. The permittee shall keep accurate records of each organic liquid stored in the tank, including its storage temperature, TVP, and API gravity. [District Rule 4623]
8. All records required to be maintained by this permit shall be maintained for a period of at least five years and shall be made readily available for District inspection upon request. [District Rule 4623]

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

San Joaquin Valley Air Pollution Control District

PERMIT UNIT: S-1427-47-0

EXPIRATION DATE: 04/30/2015

EQUIPMENT DESCRIPTION:

ONE 2,000 BBL (84,000 GALLON) FIXED-ROOF PETROLEUM STOCK TANK CONNECTED TO VAPOR RECOVERY SYSTEM

PERMIT UNIT REQUIREMENTS

1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
3. Sulfur compound emissions shall not exceed 2000 ppmv as SO₂. [District Rule 4801]
4. This tank shall be equipped with a vapor recovery system consisting of a closed vent system that collects all VOCs from the storage tank, and a VOC control device. The vapor recovery system shall be APCO-approved and maintained in leak-free condition. The VOC control device shall be 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 6.4.6 of District Rule 4623. [District Rules 2201 and 4623]
5. Tank vapor recovery system shall vent only to sales gas line, permit exempt heater, and/or flare S-1427-45. [District Rule 2201]
6. A leak-free condition is defined as a condition without a gas leak or a liquid leak. A gas leak is defined as a reading in excess of 10,000 parts per million by volume (ppmv), as methane, above background on a portable hydrocarbon detection instrument that is calibrated with methane in accordance with EPA Method 21. A liquid leak is defined as the dripping of organic liquid at a rate of more than 3 drops per minute. [District Rule 4623]
7. The vapor control system shall activate and operate at a pressure setting lower than the settings of the pressure relief valves (PRVs) on the individual tanks being served. [District Rule 2201]
8. Any tank gauging or sampling device on a tank vented to the vapor recovery system shall be equipped with a leak-free cover which shall be closed at all times except during gauging or sampling. [District Rule 4623]
9. All piping, valves, and fittings shall be constructed and maintained in a leak-free condition. [District Rule 4623]
10. Fugitive VOC emissions rate for the tank shall be calculated using 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), from the total number of components in gas service, shall not exceed 7.7 lb-VOC/day. [District Rule 2201]
11. Operator shall visually inspect tank shell, hatches, seals, seams, cable seals, valves, flanges, connectors, and any other piping components directly affixed to the tank and within five feet of the tank at least once per year for liquid leaks, and with a portable hydrocarbon detection instrument conducted in accordance with EPA Method 21 for gas leaks. Operator shall also visually or ultrasonically inspect as appropriate, the external shells and roofs of uninsulated tanks for structural integrity annually. [District Rule 4623, Table 3]
12. Upon detection of a liquid leak, defined as a leak rate of greater than or equal to 30 drops per minute, operator shall repair the leak within 8 hours. For leaks with a liquid leak rate of between 3 and 30 drops per minute, the leaking component shall be repaired within 24 hours after detection. [District Rule 4623, Table 3]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

Facility Name: SAN JOAQUIN FACILITIES MGMT
Location: HEAVY OIL CENTRAL, CA

13. Upon detection of a gas leak, defined as a VOC concentration of greater than 10,000 ppmv measured in accordance with EPA Method 21, operator shall take on of the following actions: 1) eliminate the leak within 8 hours after detection; or 2) if the leak cannot be eliminated, then minimize the leak to the lowest possible level within 8 hours after detection by using best maintenance practices, and eliminate the leak within 48 hours after minimization. In no event shall the total time to minimize and eliminate a leak exceed 56 hours after detection [District Rule 4623, Table 3]
14. Components found to be leaking either liquids or gases shall be immediately affixed with a tag showing the component to be leaking. Operator shall maintain records of the liquid or gas leak detection readings, date/time the leak was discovered, and date/time the component was repaired to a leak-free condition. [District Rule 4623, Table 3]
15. Leaking components that have been discovered by the operator that have been immediately tagged and repaired within the timeframes specified in District Rule 4623, Table 3 shall not constitute a violation of this rule. Leaking components as defined by District Rule 4623 discovered by District staff that were not previously identified and/or tagged by the operator, and/or any leaks that were not repaired within the timeframes specified in District Rule 4623, Table 3 shall constitute a violation of this rule. [District Rule 4623, Table 3]
16. If a component type for a given tank is found to leak during an annual inspection, operator shall conduct quarterly inspections of that component type on the tank or tank system for four consecutive quarters. If no components are found to leak after four consecutive quarters, the operator may revert to annual inspections. [District Rule 4623, Table 3]
17. Any component found to be leaking on two consecutive annual inspections is in violation of the District Rule 4623, even if it is under the voluntary inspection and maintenance program. [District Rule 4623]
18. Permittee shall notify the APCO in writing at least three (3) days prior to performing tank degassing and interior tank cleaning activities. Written notification shall include the following: 1) the Permit to Operate number and physical location of the tank being degassed, 2) the date and time that tank degassing and cleaning activities will begin, 3) the degassing method, as allowed in this permit, to be used, 4) the method to be used to clean the tank, including any solvents to be used, and 5) the method to be used to dispose of any removed sludge, including methods that will be used to control emissions from the receiving vessel and emissions during transport. [District Rule 4623]
19. If the vapors from this tank battery demonstrate less than 10% VOC content by laboratory analysis, this tank shall not be required to be de-gassed before commencing cleaning activities. All other applicable requirements shall be complied with before, during, and after tank cleaning activities. [District Rule 4623]
20. Prior to opening the tank to allow tank cleaning one of the following procedures must be followed: 1) This tank shall be degassed before commencing interior cleaning by exhausting VOCs contained in the tank vapor space to an APCO-approved vapor recovery system until the organic vapor concentration is 5,000 ppmv or less, or is 10% or less of the lower explosion limit (LEL), whichever is less, 2) This tank shall be degassed before commencing interior cleaning by displacing VOCs contained in the tank vapor space to an APCO-approved vapor recovery system by filling the tank with a suitable liquid until 90% or more of the maximum operating level of the tank is filled. Suitable liquids are organic liquids having a TVP of less than 0.5 psia, water, clean produced water. or produced water derived from crude oil having a TVP less than 0.5 psia, 3) This tank shall be degassed before commencing interior cleaning by displacing VOCs contained in the tank vapor space to an APCO-approved vapor recovery system by filling the tank with a suitable gas. Degassing shall continue until the operator has achieved a vapor displacement equivalent to at least 2.3 times the tank capacity. Suitable gases are air, nitrogen, carbon dioxide, or natural gas containing less than 10% VOC by weight. [District Rule 4623]
21. During tank degassing, the operator shall discharge or displace organic vapors contained in the tank vapor space to an APCO-approved vapor recovery system. [District Rule 4623]
22. To facilitate connection to an external APCO-approved recovery system, a suitable tank fitting, such as a manway, may be temporarily removed for a period of time not to exceed 1 hour. [District Rule 4623]
23. This tank shall be in compliance with the applicable requirements of District Rule 4623 at all times during draining, degassing, and refilling the tank with an organic liquid having a TVP of 0.5 psia or greater. [District Rule 4623]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

24. After a tank has been degassed pursuant to the requirements of this permit, vapor control requirements are not applicable until an organic liquid having a TVP of 0.5 psia or greater is placed, held, or stored in this tank. [District Rule 4623]
25. While performing tank cleaning activities, operators may only use the following cleaning agents: diesel, 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 of VOC per liter or less. [District Rule 4623]
26. Steam cleaning shall only be allowed at locations where wastewater treatment facilities are limited, or during the months of December through March. [District Rule 4623]
27. If this tank was holding organic liquids with a TVP of 1.5 psia or greater then during sludge removal, the operator shall control emissions from the sludge receiving vessel by operating an APCO-approved vapor control device that reduces emissions of organic vapors by at least 95%. [District Rule 4623]
28. If this tank was holding organic liquids with a TVP of 1.5 psia or greater then the permittee shall only transport removed sludge in closed, liquid leak-free containers. [District Rule 4623]
29. If this tank was holding organic liquids with a TVP of 1.5 psia or greater then the permittee shall store removed sludge, until final disposal, in vapor leak-free containers, or in tanks complying with the vapor control requirements of District Rule 4623. Sludge that is to be used to manufacture roadmix, as defined in District Rule 2020, is not required to be stored in this manner. Roadmix manufacturing operations exempt pursuant to District Rule 2020 shall maintain documentation of their compliance with Rule 2020, and shall readily make said documentation available for District inspection upon request. [District Rules 2020 and 4623]
30. 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 4623]
31. Gas-leak concentration shall be determined by EPA Method 21. [District Rule 4623]
32. Operator shall maintain an inspection log containing the following 1) Type of component leaking; 2) Date and time of leak detection, and method of detection; 3) Date and time of leak repair, and emission level of recheck after leak is repaired; 4) Method used to minimize the leak to lowest possible level within 8 hours after detection. [District Rules 1070 and 2201]
33. Permittee shall keep in their facility at all times a copy of the letter sent to the APCO requesting participation in the Rule 4623 Fixed Roof Tank Preventive Inspection and Maintenance Program, and Tank Interior Cleaning Program, and maintain the records of annual tank inspections, maintenance, and cleaning to document the participation in the program. [District Rule 4623.5.7]
34. The operator shall maintain records of the fugitive component count and calculated VOC emissions. The operator shall update such records when new components are installed. [District Rule 2201]
35. Permittee shall record and maintain monthly records of average daily crude oil throughput and shall make such records readily available for District inspection upon request for a period of five years. [District Rule 4623]

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

San Joaquin Valley Air Pollution Control District

PERMIT UNIT: S-1427-48-0

EXPIRATION DATE: 04/30/2015

EQUIPMENT DESCRIPTION:

ONE 2,000 BBL (84,000 GALLON) FIXED-ROOF PETROLEUM WASH TANK #2 CONNECTED TO VAPOR RECOVERY SYSTEM LISTED ON '47

PERMIT UNIT REQUIREMENTS

1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
3. Sulfur compound emissions shall not exceed 2000 ppmv as SO₂. [District Rule 4801]
4. This tank shall be equipped with a vapor recovery system consisting of a closed vent system that collects all VOCs from the storage tank, and a VOC control device. The vapor recovery system shall be APCO-approved and maintained in leak-free condition. The VOC control device shall be 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 6.4.6 of District Rule 4623. [District Rules 2201 and 4623]
5. Tank vapor recovery system shall vent only to sales gas line, permit exempt heater, and/or flare S-1427-45. [District Rule 2201]
6. A leak-free condition is defined as a condition without a gas leak or a liquid leak. A gas leak is defined as a reading in excess of 10,000 parts per million by volume (ppmv), as methane, above background on a portable hydrocarbon detection instrument that is calibrated with methane in accordance with EPA Method 21. A liquid leak is defined as the dripping of organic liquid at a rate of more than 3 drops per minute. [District Rule 4623]
7. The vapor control system shall activate and operate at a pressure setting lower than the settings of the pressure relief valves (PRVs) on the individual tanks being served. [District Rule 2201]
8. Any tank gauging or sampling device on a tank vented to the vapor recovery system shall be equipped with a leak-free cover which shall be closed at all times except during gauging or sampling. [District Rule 4623]
9. All piping, valves, and fittings shall be constructed and maintained in a leak-free condition. [District Rule 4623]
10. Fugitive VOC emissions rate for the tank shall be calculated using 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), from the total number of components in gas service, shall not exceed 7.7 lb-VOC/day. [District Rule 2201]
11. Operator shall visually inspect tank shell, hatches, seals, seams, cable seals, valves, flanges, connectors, and any other piping components directly affixed to the tank and within five feet of the tank at least once per year for liquid leaks, and with a portable hydrocarbon detection instrument conducted in accordance with EPA Method 21 for gas leaks. Operator shall also visually or ultrasonically inspect as appropriate, the external shells and roofs of uninsulated tanks for structural integrity annually. [District Rule 4623, Table 3]
12. Upon detection of a liquid leak, defined as a leak rate of greater than or equal to 30 drops per minute, operator shall repair the leak within 8 hours. For leaks with a liquid leak rate of between 3 and 30 drops per minute, the leaking component shall be repaired within 24 hours after detection. [District Rule 4623, Table 3]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

Facility Name: SAN JOAQUIN FACILITIES MGMT
Location: HEAVY OIL CENTRAL, CA

13. Upon detection of a gas leak, defined as a VOC concentration of greater than 10,000 ppmv measured in accordance with EPA Method 21, operator shall take on of the following actions: 1) eliminate the leak within 8 hours after detection; or 2) if the leak cannot be eliminated, then minimize the leak to the lowest possible level within 8 hours after detection by using best maintenance practices, and eliminate the leak within 48 hours after minimization. In no event shall the total time to minimize and eliminate a leak exceed 56 hours after detection [District Rule 4623, Table 3]
14. Components found to be leaking either liquids or gases shall be immediately affixed with a tag showing the component to be leaking. Operator shall maintain records of the liquid or gas leak detection readings, date/time the leak was discovered, and date/time the component was repaired to a leak-free condition. [District Rule 4623, Table 3]
15. Leaking components that have been discovered by the operator that have been immediately tagged and repaired within the timeframes specified in District Rule 4623, Table 3 shall not constitute a violation of this rule. Leaking components as defined by District Rule 4623 discovered by District staff that were not previously identified and/or tagged by the operator, and/or any leaks that were not repaired within the timeframes specified in District Rule 4623, Table 3 shall constitute a violation of this rule. [District Rule 4623, Table 3]
16. If a component type for a given tank is found to leak during an annual inspection, operator shall conduct quarterly inspections of that component type on the tank or tank system for four consecutive quarters. If no components are found to leak after four consecutive quarters, the operator may revert to annual inspections. [District Rule 4623, Table 3]
17. Any component found to be leaking on two consecutive annual inspections is in violation of the District Rule 4623, even if it is under the voluntary inspection and maintenance program. [District Rule 4623]
18. Permittee shall notify the APCO in writing at least three (3) days prior to performing tank degassing and interior tank cleaning activities. Written notification shall include the following: 1) the Permit to Operate number and physical location of the tank being degassed, 2) the date and time that tank degassing and cleaning activities will begin, 3) the degassing method, as allowed in this permit, to be used, 4) the method to be used to clean the tank, including any solvents to be used, and 5) the method to be used to dispose of any removed sludge, including methods that will be used to control emissions from the receiving vessel and emissions during transport. [District Rule 4623]
19. If the vapors from this tank battery demonstrate less than 10% VOC content by laboratory analysis, this tank shall not be required to be de-gassed before commencing cleaning activities. All other applicable requirements shall be complied with before, during, and after tank cleaning activities. [District Rule 4623]
20. Prior to opening the tank to allow tank cleaning one of the following procedures must be followed: 1) This tank shall be degassed before commencing interior cleaning by exhausting VOCs contained in the tank vapor space to an APCO-approved vapor recovery system until the organic vapor concentration is 5,000 ppmv or less, or is 10% or less of the lower explosion limit (LEL), whichever is less, 2) This tank shall be degassed before commencing interior cleaning by displacing VOCs contained in the tank vapor space to an APCO-approved vapor recovery system by filling the tank with a suitable liquid until 90% or more of the maximum operating level of the tank is filled. Suitable liquids are organic liquids having a TVP of less than 0.5 psia, water, clean produced water, or produced water derived from crude oil having a TVP less than 0.5 psia, 3) This tank shall be degassed before commencing interior cleaning by displacing VOCs contained in the tank vapor space to an APCO-approved vapor recovery system by filling the tank with a suitable gas. Degassing shall continue until the operator has achieved a vapor displacement equivalent to at least 2.3 times the tank capacity. Suitable gases are air, nitrogen, carbon dioxide, or natural gas containing less than 10% VOC by weight. [District Rule 4623]
21. During tank degassing, the operator shall discharge or displace organic vapors contained in the tank vapor space to an APCO-approved vapor recovery system. [District Rule 4623]
22. To facilitate connection to an external APCO-approved recovery system, a suitable tank fitting, such as a manway, may be temporarily removed for a period of time not to exceed 1 hour. [District Rule 4623]
23. This tank shall be in compliance with the applicable requirements of District Rule 4623 at all times during draining, degassing, and refilling the tank with an organic liquid having a TVP of 0.5 psia or greater. [District Rule 4623]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

24. After a tank has been degassed pursuant to the requirements of this permit, vapor control requirements are not applicable until an organic liquid having a TVP of 0.5 psia or greater is placed, held, or stored in this tank. [District Rule 4623]
25. While performing tank cleaning activities, operators may only use the following cleaning agents: diesel, 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 of VOC per liter or less. [District Rule 4623]
26. Steam cleaning shall only be allowed at locations where wastewater treatment facilities are limited, or during the months of December through March. [District Rule 4623]
27. If this tank was holding organic liquids with a TVP of 1.5 psia or greater then during sludge removal, the operator shall control emissions from the sludge receiving vessel by operating an APCO-approved vapor control device that reduces emissions of organic vapors by at least 95%. [District Rule 4623]
28. If this tank was holding organic liquids with a TVP of 1.5 psia or greater then the permittee shall only transport removed sludge in closed, liquid leak-free containers. [District Rule 4623]
29. If this tank was holding organic liquids with a TVP of 1.5 psia or greater then the permittee shall store removed sludge, until final disposal, in vapor leak-free containers, or in tanks complying with the vapor control requirements of District Rule 4623. Sludge that is to be used to manufacture roadmix, as defined in District Rule 2020, is not required to be stored in this manner. Roadmix manufacturing operations exempt pursuant to District Rule 2020 shall maintain documentation of their compliance with Rule 2020, and shall readily make said documentation available for District inspection upon request. [District Rules 2020 and 4623]
30. 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 4623]
31. Gas-leak concentration shall be determined by EPA Method 21. [District Rule 4623]
32. Operator shall maintain an inspection log containing the following 1) Type of component leaking; 2) Date and time of leak detection, and method of detection; 3) Date and time of leak repair, and emission level of recheck after leak is repaired; 4) Method used to minimize the leak to lowest possible level within 8 hours after detection. [District Rules 1070 and 2201]
33. Permittee shall keep in their facility at all times a copy of the letter sent to the APCO requesting participation in the Rule 4623 Fixed Roof Tank Preventive Inspection and Maintenance Program, and Tank Interior Cleaning Program, and maintain the records of annual tank inspections, maintenance, and cleaning to document the participation in the program. [District Rule 4623.5.7]
34. The operator shall maintain records of the fugitive component count and calculated VOC emissions. The operator shall update such records when new components are installed. [District Rule 2201]
35. Permittee shall record and maintain monthly records of average daily crude oil throughput and shall make such records readily available for District inspection upon request for a period of five years. [District Rule 4623]

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



AUTHORITY TO CONSTRUCT

PERMIT NO: S-1427-47-1

ISSUANCE DATE: 03/22/2012

LEGAL OWNER OR OPERATOR: SAN JOAQUIN FACILITIES MGMT
MAILING ADDRESS: 4520 CALIFORNIA AVENUE, SUITE 300
BAKERSFIELD, CA 93309

LOCATION: HEAVY OIL CENTRAL
CA

EQUIPMENT DESCRIPTION:

MODIFICATION OF ONE 2,000 BBL FIXED-ROOF PETROLEUM STOCK TANK CONNECTED TO VAPOR RECOVERY SYSTEM: REVISE COMPONENT COUNTS AND FUGITIVE EMISSIONS FACTORS FROM EPA AVERAGE EMISSIONS FACTORS TO CAPCOA SCREENING LEVEL (NO LEAK) EMISSIONS FACTORS

CONDITIONS

1. This tank shall be equipped with a vapor recovery system consisting of a closed vent system that collects all VOCs from the storage tank, and a VOC control device. The vapor recovery system shall be APCO-approved and maintained in leak-free condition. The VOC control device shall be 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 6.4.6 of District Rule 4623. [District Rules 2201 and 4623]
2. Tank vapor recovery system shall vent only to sales gas line, permit exempt heater, and/or flare S-1427-45. [District Rule 2201]
3. A leak-free condition is defined as a condition without a gas leak or a liquid leak. A gas leak is defined as a reading in excess of 10,000 parts per million by volume (ppmv) for tank components, for components in piping from the tank to the vapor control system truck line, and for vapor control system components. The ppmv readings, as methane above background, shall be taken using a portable hydrocarbon detection instrument that is calibrated to methane in accordance with the procedures specified in EPA Test Method 21. A liquid leak is defined as the dripping of organic liquid at a rate more than 3 drops per minute. [District Rules 2201 and 4623]
4. The vapor control system shall activate and operate at a pressure setting lower than the settings of the pressure relief valves (PRVs) on the individual tanks being served. [District Rule 2201]

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

5. Any tank gauging or sampling device on a tank vented to the vapor recovery system shall be equipped with a leak-free cover which shall be closed at all times except during gauging or sampling. [District Rule 4623]
6. All piping, valves, and fittings shall be constructed and maintained in a leak-free condition. [District Rule 4623]
7. VOC fugitive emissions from the tank and from components in piping from the tank and vapor line from the tank to the vapor control system trunk line shall not exceed 0.1 lb/day. [District Rule 2201]
8. VOC fugitive emissions from tank vapor control system shall not exceed 0.6 lb/day. [District Rule 2201]
9. Fugitive VOC emissions rate for the tank shall be calculated using from the "California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities," Table IV-2c. Oil and Gas Production Screening Value Ranges Emission Factors. [District Rule 2201]
10. Operator shall visually inspect tank shell, hatches, seals, seams, cable seals, valves, flanges, connectors, and any other piping components directly affixed to the tank and within five feet of the tank at least once per year for liquid leaks, and with a portable hydrocarbon detection instrument conducted in accordance with EPA Method 21 for gas leaks. Operator shall also visually or ultrasonically inspect as appropriate, the external shells and roofs of uninsulated tanks for structural integrity annually. [District Rule 4623, Table 3]
11. Upon detection of a liquid leak, defined as a leak rate of greater than or equal to 30 drops per minute, operator shall repair the leak within 8 hours. For leaks with a liquid leak rate of between 3 and 30 drops per minute, the leaking component shall be repaired within 24 hours after detection. [District Rule 4623, Table 3]
12. Upon detection of a gas leak, defined as a VOC concentration of greater than 10,000 ppmv measured in accordance with EPA Method 21, operator shall take on of the following actions: 1) eliminate the leak within 8 hours after detection; or 2) if the leak cannot be eliminated, then minimize the leak to the lowest possible level within 8 hours after detection by using best maintenance practices, and eliminate the leak within 48 hours after minimization. In no event shall the total time to minimize and eliminate a leak exceed 56 hours after detection [District Rule 4623, Table 3]
13. Components found to be leaking either liquids or gases shall be immediately affixed with a tag showing the component to be leaking. Operator shall maintain records of the liquid or gas leak detection readings, date/time the leak was discovered, and date/time the component was repaired to a leak-free condition. [District Rule 4623, Table 3]
14. Leaking components that have been discovered by the operator that have been immediately tagged and repaired within the timeframes specified in District Rule 4623, Table 3 shall not constitute a violation of this rule. Leaking components as defined by District Rule 4623 discovered by District staff that were not previously identified and/or tagged by the operator, and/or any leaks that were not repaired within the timeframes specified in District Rule 4623, Table 3 shall constitute a violation of this rule. [District Rule 4623, Table 3]
15. If a component type for a given tank is found to leak during an annual inspection, operator shall conduct quarterly inspections of that component type on the tank or tank system for four consecutive quarters. If no components are found to leak after four consecutive quarters, the operator may revert to annual inspections. [District Rule 4623, Table 3]
16. Any component found to be leaking on two consecutive annual inspections is in violation of the District Rule 4623, even if it is under the voluntary inspection and maintenance program. [District Rule 4623]
17. Permittee shall notify the APCO in writing at least three (3) days prior to performing tank degassing and interior tank cleaning activities. Written notification shall include the following: 1) the Permit to Operate number and physical location of the tank being degassed, 2) the date and time that tank degassing and cleaning activities will begin, 3) the degassing method, as allowed in this permit, to be used, 4) the method to be used to clean the tank, including any solvents to be used, and 5) the method to be used to dispose of any removed sludge, including methods that will be used to control emissions from the receiving vessel and emissions during transport. [District Rule 4623]
18. If the vapors from this tank battery demonstrate less than 10% VOC content by laboratory analysis, this tank shall not be required to be de-gassed before commencing cleaning activities. All other applicable requirements shall be complied with before, during, and after tank cleaning activities. [District Rule 4623]

19. Prior to opening the tank to allow tank cleaning one of the following procedures must be followed: 1) This tank shall be degassed before commencing interior cleaning by exhausting VOCs contained in the tank vapor space to an APCO-approved vapor recovery system until the organic vapor concentration is 5,000 ppmv or less, or is 10% or less of the lower explosion limit (LEL), whichever is less, 2) This tank shall be degassed before commencing interior cleaning by displacing VOCs contained in the tank vapor space to an APCO-approved vapor recovery system by filling the tank with a suitable liquid until 90% or more of the maximum operating level of the tank is filled. Suitable liquids are organic liquids having a TVP of less than 0.5 psia, water, clean produced water, or produced water derived from crude oil having a TVP less than 0.5 psia, 3) This tank shall be degassed before commencing interior cleaning by displacing VOCs contained in the tank vapor space to an APCO-approved vapor recovery system by filling the tank with a suitable gas. Degassing shall continue until the operator has achieved a vapor displacement equivalent to at least 2.3 times the tank capacity. Suitable gases are air, nitrogen, carbon dioxide, or natural gas containing less than 10% VOC by weight. [District Rule 4623]
20. During tank degassing, the operator shall discharge or displace organic vapors contained in the tank vapor space to an APCO-approved vapor recovery system. [District Rule 4623]
21. To facilitate connection to an external APCO-approved recovery system, a suitable tank fitting, such as a manway, may be temporarily removed for a period of time not to exceed 1 hour. [District Rule 4623]
22. This tank shall be in compliance with the applicable requirements of District Rule 4623 at all times during draining, degassing, and refilling the tank with an organic liquid having a TVP of 0.5 psia or greater. [District Rule 4623]
23. After a tank has been degassed pursuant to the requirements of this permit, vapor control requirements are not applicable until an organic liquid having a TVP of 0.5 psia or greater is placed, held, or stored in this tank. [District Rule 4623]
24. While performing tank cleaning activities, operators may only use the following cleaning agents: diesel, 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 of VOC per liter or less. [District Rule 4623]
25. Steam cleaning shall only be allowed at locations where wastewater treatment facilities are limited, or during the months of December through March. [District Rule 4623]
26. If this tank was holding organic liquids with a TVP of 1.5 psia or greater then during sludge removal, the operator shall control emissions from the sludge receiving vessel by operating an APCO-approved vapor control device that reduces emissions of organic vapors by at least 95%. [District Rule 4623]
27. If this tank was holding organic liquids with a TVP of 1.5 psia or greater then the permittee shall only transport removed sludge in closed, liquid leak-free containers. [District Rule 4623]
28. If this tank was holding organic liquids with a TVP of 1.5 psia or greater then the permittee shall store removed sludge, until final disposal, in vapor leak-free containers, or in tanks complying with the vapor control requirements of District Rule 4623. Sludge that is to be used to manufacture roadmix, as defined in District Rule 2020, is not required to be stored in this manner. Roadmix manufacturing operations exempt pursuant to District Rule 2020 shall maintain documentation of their compliance with Rule 2020, and shall readily make said documentation available for District inspection upon request. [District Rules 2020 and 4623]
29. 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 4623]
30. Gas-leak concentration shall be determined by EPA Method 21. [District Rule 4623]
31. Operator shall maintain an inspection log containing the following 1) Type of component leaking; 2) Date and time of leak detection, and method of detection; 3) Date and time of leak repair, and emission level of recheck after leak is repaired; 4) Method used to minimize the leak to lowest possible level within 8 hours after detection. [District Rules 1070 and 2201]

32. Permittee shall keep in their facility at all times a copy of the letter sent to the APCO requesting participation in the Rule 4623 Fixed Roof Tank Preventive Inspection and Maintenance Program, and Tank Interior Cleaning Program, and maintain the records of annual tank inspections, maintenance, and cleaning to document the participation in the program. [District Rule 4623.5.7]
33. The operator shall maintain records of the fugitive component count and calculated VOC emissions. The operator shall update such records when new components are installed. [District Rule 2201]
34. ATC shall be implemented concurrently with or subsequent to ATC S-1427-47-0. [District Rule 2201]



AUTHORITY TO CONSTRUCT

PERMIT NO: S-1427-48-1

ISSUANCE DATE: 03/22/2012

LEGAL OWNER OR OPERATOR: SAN JOAQUIN FACILITIES MGMT
MAILING ADDRESS: 4520 CALIFORNIA AVENUE, SUITE 300
BAKERSFIELD, CA 93309

LOCATION: HEAVY OIL CENTRAL
CA

EQUIPMENT DESCRIPTION:

MODIFICATION OF ONE 2,000 BBL FIXED-ROOF PETROLEUM WASH TANK #2 CONNECTED TO VAPOR RECOVERY SYSTEM LISTED ON '47: REVISE COMPONENT COUNTS AND FUGITIVE EMISSIONS FACTORS FROM EPA AVERAGE EMISSIONS FACTORS TO CAPCOA SCREENING LEVEL (NO LEAK) EMISSIONS FACTORS

CONDITIONS

1. Tank shall only vent to vapor control system listed on S-1427-47. [District Rule 2201]
2. A leak-free condition is defined as a condition without a gas leak or a liquid leak. A gas leak is defined as a reading in excess of 10,000 parts per million by volume (ppmv), as methane, above background on a portable hydrocarbon detection instrument that is calibrated with methane in accordance with EPA Method 21. A liquid leak is defined as the dripping of organic liquid at a rate of more than 3 drops per minute. [District Rule 4623]
3. Any tank gauging or sampling device on a tank vented to the vapor recovery system shall be equipped with a leak-free cover which shall be closed at all times except during gauging or sampling. [District Rule 4623]
4. All piping, valves, and fittings shall be constructed and maintained in a leak-free condition. [District Rule 4623]
5. VOC fugitive emissions from the tank and from components in piping from the tank and vapor line from the tank to the vapor control system trunk line shall not exceed 0.1 lb/day. [District Rule 2201]
6. Fugitive VOC emissions rate for the tank shall be calculated using from the "California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities," Table IV-2c. Oil and Gas Production Screening Value Ranges Emission Factors. [District Rule 2201]

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

7. Operator shall visually inspect tank shell, hatches, seals, seams, cable seals, valves, flanges, connectors, and any other piping components directly affixed to the tank and within five feet of the tank at least once per year for liquid leaks, and with a portable hydrocarbon detection instrument conducted in accordance with EPA Method 21 for gas leaks. Operator shall also visually or ultrasonically inspect as appropriate, the external shells and roofs of uninsulated tanks for structural integrity annually. [District Rule 4623, Table 3]
8. Upon detection of a liquid leak, defined as a leak rate of greater than or equal to 30 drops per minute, operator shall repair the leak within 8 hours. For leaks with a liquid leak rate of between 3 and 30 drops per minute, the leaking component shall be repaired within 24 hours after detection. [District Rule 4623, Table 3]
9. Upon detection of a gas leak, defined as a VOC concentration of greater than 10,000 ppmv measured in accordance with EPA Method 21, operator shall take on of the following actions: 1) eliminate the leak within 8 hours after detection; or 2) if the leak cannot be eliminated, then minimize the leak to the lowest possible level within 8 hours after detection by using best maintenance practices, and eliminate the leak within 48 hours after minimization. In no event shall the total time to minimize and eliminate a leak exceed 56 hours after detection [District Rule 4623, Table 3]
10. Components found to be leaking either liquids or gases shall be immediately affixed with a tag showing the component to be leaking. Operator shall maintain records of the liquid or gas leak detection readings, date/time the leak was discovered, and date/time the component was repaired to a leak-free condition. [District Rule 4623, Table 3]
11. Leaking components that have been discovered by the operator that have been immediately tagged and repaired within the timeframes specified in District Rule 4623, Table 3 shall not constitute a violation of this rule. Leaking components as defined by District Rule 4623 discovered by District staff that were not previously identified and/or tagged by the operator, and/or any leaks that were not repaired within the timeframes specified in District Rule 4623, Table 3 shall constitute a violation of this rule. [District Rule 4623, Table 3]
12. If a component type for a given tank is found to leak during an annual inspection, operator shall conduct quarterly inspections of that component type on the tank or tank system for four consecutive quarters. If no components are found to leak after four consecutive quarters, the operator may revert to annual inspections. [District Rule 4623, Table 3]
13. Any component found to be leaking on two consecutive annual inspections is in violation of the District Rule 4623, even if it is under the voluntary inspection and maintenance program. [District Rule 4623]
14. Permittee shall notify the APCO in writing at least three (3) days prior to performing tank degassing and interior tank cleaning activities. Written notification shall include the following: 1) the Permit to Operate number and physical location of the tank being degassed, 2) the date and time that tank degassing and cleaning activities will begin, 3) the degassing method, as allowed in this permit, to be used, 4) the method to be used to clean the tank, including any solvents to be used, and 5) the method to be used to dispose of any removed sludge, including methods that will be used to control emissions from the receiving vessel and emissions during transport. [District Rule 4623]
15. If the vapors from this tank battery demonstrate less than 10% VOC content by laboratory analysis, this tank shall not be required to be de-gassed before commencing cleaning activities. All other applicable requirements shall be complied with before, during, and after tank cleaning activities. [District Rule 4623]
16. Prior to opening the tank to allow tank cleaning one of the following procedures must be followed: 1) This tank shall be degassed before commencing interior cleaning by exhausting VOCs contained in the tank vapor space to an APCO-approved vapor recovery system until the organic vapor concentration is 5,000 ppmv or less, or is 10% or less of the lower explosion limit (LEL), whichever is less, 2) This tank shall be degassed before commencing interior cleaning by displacing VOCs contained in the tank vapor space to an APCO-approved vapor recovery system by filling the tank with a suitable liquid until 90% or more of the maximum operating level of the tank is filled. Suitable liquids are organic liquids having a TVP of less than 0.5 psia, water, clean produced water. or produced water derived from crude oil having a TVP less than 0.5 psia, 3) This tank shall be degassed before commencing interior cleaning by displacing VOCs contained in the tank vapor space to an APCO-approved vapor recovery system by filling the tank with a suitable gas. Degassing shall continue until the operator has achieved a vapor displacement equivalent to at least 2.3 times the tank capacity. Suitable gases are air, nitrogen, carbon dioxide, or natural gas containing less than 10% VOC by weight. [District Rule 4623]
17. During tank degassing, the operator shall discharge or displace organic vapors contained in the tank vapor space to an APCO-approved vapor recovery system. [District Rule 4623]

18. To facilitate connection to an external APCO-approved recovery system, a suitable tank fitting, such as a manway, may be temporarily removed for a period of time not to exceed 1 hour. [District Rule 4623]
19. This tank shall be in compliance with the applicable requirements of District Rule 4623 at all times during draining, degassing, and refilling the tank with an organic liquid having a TVP of 0.5 psia or greater. [District Rule 4623]
20. After a tank has been degassed pursuant to the requirements of this permit, vapor control requirements are not applicable until an organic liquid having a TVP of 0.5 psia or greater is placed, held, or stored in this tank. [District Rule 4623]
21. While performing tank cleaning activities, operators may only use the following cleaning agents: diesel, 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 of VOC per liter or less. [District Rule 4623]
22. Steam cleaning shall only be allowed at locations where wastewater treatment facilities are limited, or during the months of December through March. [District Rule 4623]
23. If this tank was holding organic liquids with a TVP of 1.5 psia or greater then during sludge removal, the operator shall control emissions from the sludge receiving vessel by operating an APCO-approved vapor control device that reduces emissions of organic vapors by at least 95%. [District Rule 4623]
24. If this tank was holding organic liquids with a TVP of 1.5 psia or greater then the permittee shall only transport removed sludge in closed, liquid leak-free containers. [District Rule 4623]
25. If this tank was holding organic liquids with a TVP of 1.5 psia or greater then the permittee shall store removed sludge, until final disposal, in vapor leak-free containers, or in tanks complying with the vapor control requirements of District Rule 4623. Sludge that is to be used to manufacture roadmix, as defined in District Rule 2020, is not required to be stored in this manner. Roadmix manufacturing operations exempt pursuant to District Rule 2020 shall maintain documentation of their compliance with Rule 2020, and shall readily make said documentation available for District inspection upon request. [District Rules 2020 and 4623]
26. Gas-leak concentration shall be determined by EPA Method 21. [District Rule 4623]
27. Operator shall maintain an inspection log containing the following 1) Type of component leaking; 2) Date and time of leak detection, and method of detection; 3) Date and time of leak repair, and emission level of recheck after leak is repaired; 4) Method used to minimize the leak to lowest possible level within 8 hours after detection. [District Rules 1070 and 2201]
28. Permittee shall keep in their facility at all times a copy of the letter sent to the APCO requesting participation in the Rule 4623 Fixed Roof Tank Preventive Inspection and Maintenance Program, and Tank Interior Cleaning Program, and maintain the records of annual tank inspections, maintenance, and cleaning to document the participation in the program. [District Rule 4623.5.7]
29. The operator shall maintain records of the fugitive component count and calculated VOC emissions. The operator shall update such records when new components are installed. [District Rule 2201]
30. ATC shall be implemented concurrently with or subsequent to ATC S-1427-48-0. [District Rule 2201]

Attachment B

Tank Location Diagrams

SITE / AREA DIAGRAM

San Joaquin Facilities Management



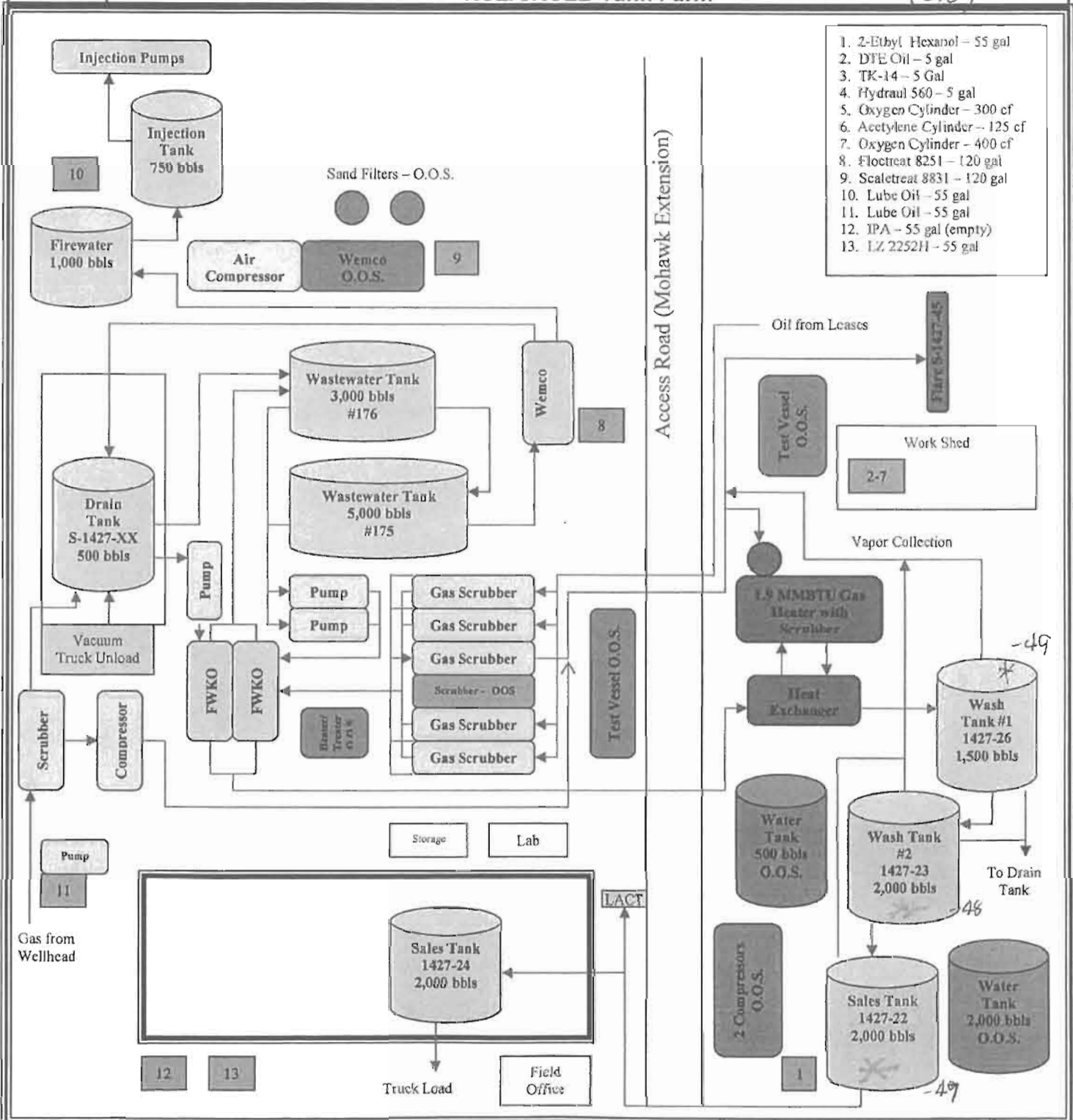
BUSINESS NAME: Fruitvale North
SCALE: NONE

SW Section 22/ T29S/ R27E

KCLA/KCLB Tank Farm

(old)

1. 2-Ethyl Hexanol - 55 gal
2. DFE Oil - 5 gal
3. TK-14 - 5 Gal
4. Hydraul 560 - 5 gal
5. Oxygen Cylinder - 300 cf
6. Acetylene Cylinder - 125 cf
7. Oxygen Cylinder - 400 cf
8. Floctreat 8251 - 120 gal
9. Scaletreat 8831 - 120 gal
10. Lube Oil - 55 gal
11. Lube Oil - 55 gal
12. IPA - 55 gal (empty)
13. LZ 2252H - 55 gal



SITE / AREA DIAGRAM

San Joaquin Facilities Management

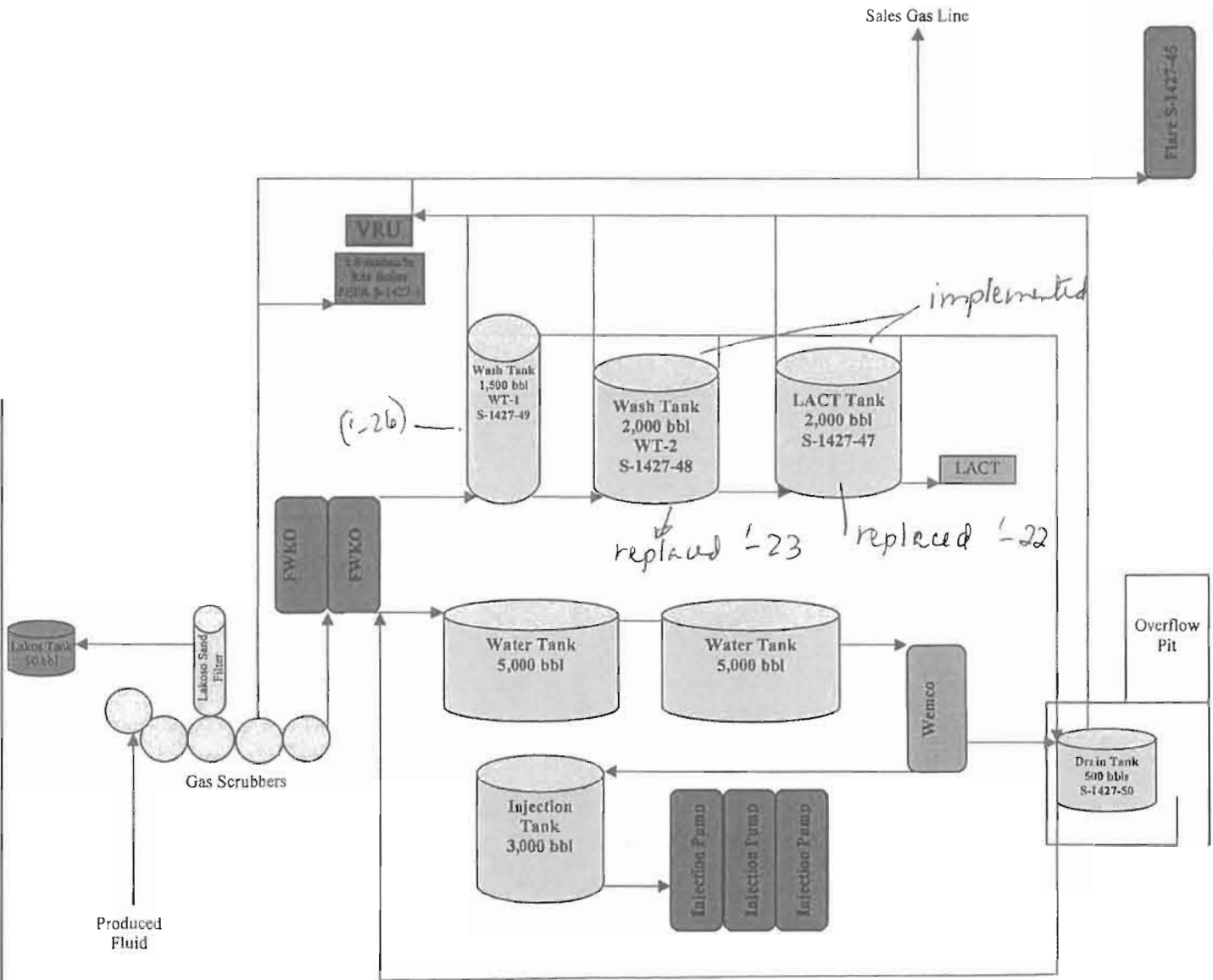


BUSINESS NAME: Fruitvale North
SCALE: NONE

NE Section 22/ T29S/ R27E

KCLA/KCLB Tank Farm

(new)



Appendix C

Crude Oil Vapor Pressure Laboratory Analysis



O I L F I E L D E N V I R O N M E N T A L A N D C O M P L I A N C E

Client: Enviro Tech Consultants, Inc. 5400 Rosedale Highway Bakersfield, CA 93308 Attn: Brian Smith Project: KCL SJ Site: Bakersfield	SAMPLE ID: 1002848-1 Date Sampled: 08/10/10 Date Analyzed: 08/19/10 Date Received: 08/11/10 Lab Contact: J. Carstens
--	--

Report Of Analytical Results
HOST Method

OEC ID	Client ID	Constituent	Results	Units	Method	PQL
1002848-1	KCL SJ B Wash Tk #2 (S-1427-23)	API Gravity Vapor Pressure @ 112°F	18.1 0.059	API psi	ASTM D-4052 HOST ¹	0.1 0.005

¹Test Method for Vapor Pressure of Reactive Organic Compounds in Heavy Crude Oil Using Gas Chromatography, Revised Draft, calculation from page 6. David Littlejohn and Donald Lucas, Lawrence Berkeley National Laboratory, March 1, 2000. Results listed as ND would have been reported if present at or above the listed PQL(Practical Quantitation Limit).
N/A= Not available, due to sample matrix.

Julius G. Carstens, Lab Director

Appendix D
Tank Throughputs

Year	Throughput (bbl)**
2009	144,989
2010	140,543
Average	142,766

** Taken from inventory records submitted to the District (from DOGGR records per applicant)

	Q1(Jan-Mar)	Q2(Apr-Jun)	Q3(Jul-Sep)	Q4(Oct-Dec)
2009	36,247	36,247	36,247	36,247
2010	35,136	35,136	35,136	35,136
Average	35,692	35,692	35,692	35,692
Ave daily	397	392	388	388

Quarterly historical throughputs were calculated from annual oil throughput divided by 4.

Average daily throughputs were calculated from average quarterly divided by the number of days per quarter

Appendix E

Emissions Calculations

Tank Input Data	
permit number (S-XXXX-XX-XX)	S-1427-22
facility tank I.D.	Stock
nearest city (1: Bakersfield, 2: Fresno, 3: Stockton)	1
tank ROC vapor pressure (psia)	0.059
liquid bulk storage temperature, T _b (°F)	100
is this a constant-level tank? (yes, no)	no
will flashing losses occur in this tank (only if first-line tank)? (yes, no)	no
breather vent pressure setting range (psi)	0.06
diameter of tank (feet)	30
capacity of tank (bbf)	2,000
conical or dome roof? (c, d)	c
shell height of tank (feet)	16
average liquid height (feet)	10
are the roof and shell the same color? (yes,no)	yes
For roof:	
color (1:Spec Al, 2:Diff Al, 3:Light, 4:Med, 5:Red, 6:White)	4
condition (1: Good, 2: Poor)	1
-----This row only used if shell is different color from roof-----	4
-----This row only used if shell is different color from roof-----	1

Liquid Input Data	A	B
maximum daily fluid throughput (bbf)		397
maximum annual fluid throughput (bbf)		144,905
-----This row only used if flashing losses occur in this tank-----		391
-----This row only used if flashing losses occur in this tank-----		142,715
molecular weight, M _w (lb/lb-mol)		100

Calculated Values	A	B
daily maximum ambient temperature, T _{ax} (°F)		77.65
daily minimum ambient temperature, T _{an} (°F)		53.15
daily total solar insulation factor, I (Btu/ft ² -day)		1648.9
atmospheric pressure, P _a (psia)		14.47
water vapor pressure at daily maximum liquid surface temperature (T _{lx}), P _{vx} (psia)	99.0	0.9259
water vapor pressure at daily minimum liquid surface temperature (T _{ln}), P _{vn} (psia)	88.2	0.8853
water vapor pressure at average liquid surface temperature (T _{la}), P _{va} (psia)	93.6	0.7903
roof outage, H _{ro} (feet)		0.3125
vapor space volume, V _v (cubic feet)		4462.04
paint factor, alpha		0.68
vapor density, W _v (lb/cubic foot)		0.0010
daily vapor temperature range, delta T _v (degrees Rankine)		49.04
vapor space expansion factor, K _e		0.1032

Results	lb/year	lb/day
Standing Storage Loss	167	0.46
Working Loss	855	2.34
Flashing Loss	N/A	N/A
Total Uncontrolled Tank VOC Emissions	1,022	2.8

Summary Table	
Permit Number	S-1427-22
Facility Tank I.D.	Stock
Tank capacity (bbf)	2,000
Tank diameter (ft)	30
Tank shell height (ft)	16
Conical or Dome Roof	Conical
Maximum Daily Fluid Throughput (bbf/day)	397
Maximum Annual Fluid Throughput (bbf/year)	144,905
Maximum Daily Oil Throughput (bbf/day)	N/A
Maximum Annual Oil Throughput (bbf/year)	N/A
Total Uncontrolled Daily Tank VOC Emissions (lb/day)	2.8
Total Uncontrolled Annual Tank VOC Emissions (lb/year)	1,022

$$\frac{1022}{4} = 256$$

Year	Throughput (bbl)**
2009	144,989
2010	140,543
Average	142,766

** Taken from inventory records submitted to the District (from DOGGR records per applicant)

	Q1(Jan-Mar)	Q2(Apr-Jun)	Q3(Jul-Sep)	Q4(Oct-Dec)
2009	36,247	36,247	36,247	36,247
2010	35,136	35,136	35,136	35,136
Average	35,692	35,692	35,692	35,692
Ave daily	397	392	388	388

Quarterly historical throughputs were calculated from annual oil throughput divided by 4.

Average daily throughputs were calculated from average quarterly divided by the number of days per quarter

Tank Input Data	
permit number (S-xxxx-xx-xx)	S-1427-22
facility tank I.D.	Stock
nearest city {1: Bakersfield, 2: Fresno, 3: Stockton}	1
tank ROC vapor pressure (psia)	0.059
liquid bulk storage temperature, Tb (°F)	100
is this a constant-level tank? {yes, no}	no
will flashing losses occur in this tank (only if first-line tank)? {yes, no}	no
breather vent pressure setting range (psi)	0.06
diameter of tank (feet)	30
capacity of tank (bbl)	2,000
conical or dome roof? {c, d}	c
shell height of tank (feet)	16
average liquid height (feet)	10
are the roof and shell the same color? {yes,no}	yes
For roof:	
color {1:Spec Al, 2:Diff Al, 3:Light, 4:Med, 5:Red, 6:White}	4
condition {1: Good, 2: Poor}	1
-----This row only used if shell is different color from roof-----	4
-----This row only used if shell is different color from roof-----	1

Liquid Input Data	A	B
maximum daily fluid throughput (bbl)		388
maximum annual fluid throughput (bbl)		141,620
-----This row only used if flashing losses occur in this tank-----		391
-----This row only used if flashing losses occur in this tank-----		142,715
molecular weight, Mw (lb/lb-mol)		100

Calculated Values	A	B
daily maximum ambient temperature, T _{ax} (°F)		77.65
daily minimum ambient temperature, T _{an} (°F)		53.15
daily total solar insolation factor, I (Btu/R ² -day)		1648.9
atmospheric pressure, P _a (psia)		14.47
water vapor pressure at daily maximum liquid surface temperature (T _{lx}), P _{vx} (psia)	99.0	0.9259
water vapor pressure at daily minimum liquid surface temperature (T _{ln}), P _{vn} (psia)	88.2	0.6653
water vapor pressure at average liquid surface temperature (T _{la}), P _{va} (psia)	93.6	0.7903
roof outage, H _{ro} (feet)		0.3125
vapor space volume, V _v (cubic feet)		4462.04
paint factor, alpha		0.68
vapor density, W _v (lb/cubic foot)		0.0010
daily vapor temperature range, delta T _v (degrees Rankine)		49.04
vapor space expansion factor, K _e		0.1032

Results	lb/year	lb/day
Standing Storage Loss	167	0.46
Working Loss	836	2.29
Flashing Loss	N/A	N/A
Total Uncontrolled Tank VOC Emissions	1,003	2.7

Summary Table	
Permit Number	S-1427-22
Facility Tank I.D.	Stock
Tank capacity (bbl)	2,000
Tank diameter (ft)	30
Tank shell height (ft)	16
Conical or Dome Roof	Conical
Maximum Daily Fluid Throughput (bbl/day)	388
Maximum Annual Fluid Throughput (bbl/year)	141,620
Maximum Daily Oil Throughput (bbl/day)	N/A
Maximum Annual Oil Throughput (bbl/year)	N/A
Total Uncontrolled Daily Tank VOC Emissions (lb/day)	2.7
Total Uncontrolled Annual Tank VOC Emissions (lb/year)	1,003

$$\frac{1003}{4} = 251$$

Tank Input Data	
permit number (S-xxxx-xx-xx)	S-1427-23
facility tank I.D.	Wash
nearest city {1: Bakersfield, 2: Fresno, 3: Stockton}	1
tank RÖC vapor pressure (psia)	0.059
liquid bulk storage temperature, T _b (°F)	100
is this a constant-level tank? {yes, no}	yes
will flashing losses occur in this tank (only if first-line tank)? {yes, no}	no
breather vent pressure setting range (psi)	0.06
diameter of tank (feet)	30
capacity of tank (bbl)	2,000
conical or dome roof? {c, d}	c
shell height of tank (feet)	16
average liquid height (feet)	14
are the roof and shell the same color? {yes,no}	yes
For roof:	
color {1:Spec Al, 2:Diff Al, 3:Light, 4:Med, 5:Red, 6:White}	4
condition {1: Good, 2: Poor}	1
-----This row only used if shell is different color from roof-----	4
-----This row only used if shell is different color from roof-----	1

Liquid Input Data	A	B
maximum daily fluid throughput (bbl)		397
maximum annual fluid throughput (bbl)		144,905
-----This row only used if flashing losses occur in this tank-----		397
-----This row only used if flashing losses occur in this tank-----		144,905
molecular weight, M _w (lb/lb-mol)		100

Calculated Values	A	B
daily maximum ambient temperature, T _{ax} (°F)		77.65
daily minimum ambient temperature, T _{an} (°F)		53.15
daily total solar insolation factor, I (Btu/ft ² -day)		1648.9
atmospheric pressure, P _a (psia)		14.47
water vapor pressure at daily maximum liquid surface temperature (T _{lx}), P _{vx} (psia)	99.0	0.9259
water vapor pressure at daily minimum liquid surface temperature (T _{ln}), P _{vn} (psia)	88.2	0.6653
water vapor pressure at average liquid surface temperature (T _{la}), P _{va} (psia)	93.6	0.7903
roof outage, H _{ro} (feet)		0.3125
vapor space volume, V _v (cubic feet)		1634.61
paint factor, alpha		0.68
vapor density, W _v (lb/cubic foot)		0.0010
daily vapor temperature range, delta T _v (degrees Rankine)		49.04
vapor space expansion factor, K _e		0.1032

Results	lb/year	lb/day
Standing Storage Loss	61	0.17
Working Loss	N/A	N/A
Flashing Loss	N/A	N/A
Total Uncontrolled Tank VOC Emissions	61	0.2

Summary Table	
Permit Number	S-1427-23
Facility Tank I.D.	Wash
Tank capacity (bbl)	2,000
Tank diameter (ft)	30
Tank shell height (ft)	16
Conical or Dome Roof	Conical
Maximum Daily Fluid Throughput (bbl/day)	397
Maximum Annual Fluid Throughput (bbl/year)	144,905
Maximum Daily Oil Throughput (bbl/day)	N/A
Maximum Annual Oil Throughput (bbl/year)	N/A
Total Uncontrolled Daily Tank VOC Emissions (lb/day)	0.2
Total Uncontrolled Annual Tank VOC Emissions (lb/year)	61

$$\frac{61}{4} = 15$$

Tank Input Data	
permit number (S-xxxx-xx-xx)	S-1427-23
facility tank I.D.	Wash
nearest city {1: Bakersfield, 2: Fresno, 3: Stockton}	1
tank ROC vapor pressure (psia)	0.059
liquid bulk storage temperature, T _b (°F)	100
is this a constant-level tank? {yes, no}	yes
will flashing losses occur in this tank (only if first-line tank)? {yes, no}	no
breather vent pressure setting range (psi)	0.06
diameter of tank (feet)	30
capacity of tank (bbl)	2,000
conical or dome roof? {c, d}	c
shell height of tank (feet)	16
average liquid height (feet)	14
are the roof and shell the same color? {yes,no}	yes
For roof:	
color (1:Spec Al, 2:Diff Al, 3:Light, 4:Med, 5:Red, 6:White)	4
condition (1: Good, 2: Poor)	1
-----This row only used if shell is different color from roof-----	4
-----This row only used if shell is different color from roof-----	1

Liquid Input Data	A	B
maximum daily fluid throughput (bbl)		388
maximum annual fluid throughput (bbl)		141,620
-----This row only used if flashing losses occur in this tank-----		388
-----This row only used if flashing losses occur in this tank-----		141,620
molecular weight, M _w (lb/lb-mol)		100

Calculated Values	A	B
daily maximum ambient temperature, T _{ax} (°F)		77.65
daily minimum ambient temperature, T _{an} (°F)		53.15
daily total solar insolation factor, I (Btu/ft ² -day)		1648.9
atmospheric pressure, P _a (psia)		14.47
water vapor pressure at daily maximum liquid surface temperature (T _{lx}), P _{vx} (psia)	99.0	0.9259
water vapor pressure at daily minimum liquid surface temperature (T _{ln}), P _{vn} (psia)	88.2	0.6653
water vapor pressure at average liquid surface temperature (T _{la}), P _{va} (psia)	93.6	0.7903
roof outage, H _{ro} (feet)		0.3125
vapor space volume, V _v (cubic feet)		1634.61
paint factor, alpha		0.68
vapor density, W _v (lb/cubic foot)		0.0010
daily vapor temperature range, delta T _v (degrees Rankine)		49.04
vapor space expansion factor, K _e		0.1032

Results	lb/year	lb/day
Standing Storage Loss	61	0.17
Working Loss	N/A	N/A
Flashing Loss	N/A	N/A
Total Uncontrolled Tank VOC Emissions	61	0.2

Summary Table	
Permit Number	S-1427-23
Facility Tank I.D.	Wash
Tank capacity (bbl)	2,000
Tank diameter (ft)	30
Tank shell height (ft)	16
Conical or Dome Roof	Conical
Maximum Daily Fluid Throughput (bbl/day)	388
Maximum Annual Fluid Throughput (bbl/year)	141,620
Maximum Daily Oil Throughput (bbl/day)	N/A
Maximum Annual Oil Throughput (bbl/year)	N/A
Total Uncontrolled Daily Tank VOC Emissions (lb/day)	0.2
Total Uncontrolled Annual Tank VOC Emissions (lb/year)	61

San Joaquin Facilities Management
 S-1427: Fruitvale/RRR Leases
 Fugitive Emission Calculations

PE 2

Number of Components	Flange		Valve		Threaded Connection		Pump Seals		Open Ended Lines		Others		Total			
	Light Oil	Gas	Light Oil	Gas	Light Oil	Gas	Light Oil	Gas	Light Oil	Gas	Light Oil	Gas	Light Oil	Gas		
S-1427-47	2,000	bbl Stock	20	2	10	1	50	6	0	0	0	0	4	0	84	9
S-1427-48	2,000	bbl Wash #2	20	2	10	1	50	6	0	0	0	0	4	0	116	14
S-1427-50	500	bbl Drain	4	2	2	1	25	5	0	0	0	0	2	0	33	8

Emission Factors - (AP-42: CAPCOA Table IV-2c)	Flange		Valve		Threaded Connection		Pump Seals		Open Ended Lines		Others	
	Heavy Oil	Gas	Light Oil	Gas	Light Oil	Gas	Light Oil	Gas	Light Oil	Gas	Light Oil	Gas
kg/hr/source	3.900E-07	3.900E-04	8.400E-06	4.500E-03	7.500E-06	2.000E-04	N/A	2.400E-03	1.400E-04	2.000E-03	3.200E-06	8.800E-03
lb/day/source	2.059E-05	2.059E-02	4.435E-04	2.376E-01	3.960E-04	1.056E-02	N/A	1.267E-01	7.392E-03	1.056E-01	1.690E-03	4.646E-01

Emissions - lb/day	Flange		Valve		Threaded Connection		Pump Seals		Open Ended Lines		Others		Total - lb/day		Total		
	Light Oil	Gas	Light Oil	Gas	Light Oil	Gas	Light Oil	Gas	Light Oil	Gas	Light Oil	Gas	Light Oil	Gas			
S-1427-10	1,550	bbl Stock	0.000	0.041	0.004	0.238	0.020	0.063	-	-	-	-	0.007	-	0.03	0.34	0.37
S-1427-11	1,980	bbl Wash	0.000	0.041	0.004	0.238	0.020	0.063	-	-	-	-	0.007	-	0.03	0.34	0.37
S-1427-26	1,550	bbl Wash	0.000	0.041	0.001	0.238	0.010	0.053	-	-	-	-	0.003	-	0.01	0.33	0.35

Emissions - lb/year	Flange		Valve		Threaded Connection		Pump Seals		Open Ended Lines		Others		Total - lb/year		Total	Tons/yr		
	Light Oil	Gas	Light Oil	Gas	Light Oil	Gas	Light Oil	Gas	Light Oil	Gas	Light Oil	Gas	Light Oil	Gas				
S-1427-10	1,550	bbl Stock	0	15	2	87	7	23	-	-	-	-	2	-	11	125	136	0.07
S-1427-11	1,980	bbl Wash	0	15	2	87	7	23	-	-	-	-	2	-	11	125	136	0.07
S-1427-26	1,550	bbl Wash	0	15	0	87	4	19	-	-	-	-	1	-	5	121	126	0.06

0.1 lb/day
 37 lb/yr

2/22/12

Appendix F

Draft ERCs

San Joaquin Valley
Air Pollution Control District

Southern Regional Office • 34946 Flyover Court • Bakersfield, CA 93308

Emission Reduction Credit Certificate
S-3801-1

ISSUED TO: SAN JOAQUIN FACILITIES MGMT
ISSUED DATE: <DRAFT>
LOCATION OF REDUCTION: HEAVY OIL CENTRAL
CA

For VOC Reduction In The Amount Of:

Quarter 1	Quarter 2	Quarter 3	Quarter 4
228 lbs	225 lbs	223 lbs	223 lbs

Conditions Attached

Method Of Reduction

- Shutdown of Entire Stationary Source
 Shutdown of Emissions Units
 Other

Shutdown and replaced with tanks on vapor control.

Use of these credits outside the San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD) is not allowed without express written authorization by the SJVUAPCD.

Seyed Sadredin, Executive Director / APCO

DRAFT

David Warner, Director of Permit Services