San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

DEC - 7 2012

Ms. Melinda Hicks
Kern Oil and Refining Company
7724 E. Panama Lane
Bakersfield, CA 93307

Re: Notice of Preliminary Decision - ATC / Certificate of Conformity - Significant Modification

Facility # S-37
Project # 1123575

Dear Ms. Hicks:

Enclosed for your review and comment is the District's analysis of an application for Authority to Construct for Kern Oil and Refining Company located at 7724 E. Panama Lane in Bakersfield, CA. This project includes the installation of one 54,000 bbl organic liquid storage tank with an external floating roof.

After addressing all comments made during the 30-day public notice and the 45-day EPA comment periods, the Authority to Construct will be issued to the facility with a Certificate of Conformity. Prior to operating with modifications authorized by the Authority to Construct, the facility must submit an application to modify the Title V permit as an administrative amendment, in accordance with District Rule 2520, Section 11.5.

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

If you have any questions, please contact Mr. Leonard Scandura, Permit Services Manager, at (661) 392-5500.

Thank you for your cooperation in this matter.

Sincerely,

David Warner
Director of Permit Services

DW: SR/cp

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

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

www.valleyair.org www.healthyairliving.com

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

DEC - 7 2012

Gerardo C. Rios, Chief
Permits Office
Air Division
U.S. EPA - Region IX
75 Hawthorne St.
San Francisco, CA 94105

Re: Notice of Preliminary Decision - ATC / Certificate of Conformity - Significant Modification

Facility # S-37
Project # S-1123575

Dear Mr. Rios:

Enclosed for your review is the District's engineering evaluation of an application for Authority to Construct for Kern Oil and Refining Company located at 7724 E. Panama Lane in Bakersfield, CA, which has been issued a Title V permit. Kern Oil and Refining Company is requesting that a Certificate of Conformity, with the procedural requirements of 40 CFR Part 70, be issued with this project. This project includes the installation of one 54,000 bbl organic liquid storage tank with an external floating roof.

Enclosed is the engineering evaluation of this application and proposed Authority to Construct # S-37-148-0 with Certificate of Conformity. After demonstrating compliance with the Authority to Construct, the conditions will be incorporated into the facility's Title V permit through an administrative amendment.

Please submit your written comments on this project within the 45-day comment period that begins on the date you receive this letter. If you have any questions, please contact Mr. Leonard Scandura, Permit Services Manager, at (661) 392-5500.

Thank you for your cooperation in this matter.

Sincerely,

David Warner
Director of Permit Services

DW: SR/cp

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

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

www.valleyair.org www.healthyairliving.com

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

DEC - 7 2012

Mike Tollstrup, Chief
Project Assessment Branch
Air Resources Board
P O Box 2815
Sacramento, CA 95812-2815

Re: Notice of Preliminary Decision - ATC / Certificate of Conformity - Significant Modification

Facility # S-37
Project # 1123575

Dear Mr. Tollstrup:

Enclosed for your review and comment is the District's analysis of an application for Authority to Construct for Kern Oil and Refining Company located at 7724 E. Panama Lane in Bakersfield, CA. This project includes the installation of one 54,000 bbl organic liquid storage tank with an external floating roof.

The public notice will be published approximately three days from the date of this letter. Please submit your written comments 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, please contact Mr. Leonard Scandura, Permit Services Manager, at (661) 392-5500.

Thank you for your cooperation in this matter.

Sincerely,

David Warner
Director of Permit Services

DW: SR/cp

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

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

www.valleyair.org www.healthyairliving.com

Bakersfield Californian

NOTICE OF PRELIMINARY DECISION
FOR THE ISSUANCE OF AUTHORITY TO CONSTRUCT AND
THE PROPOSED SIGNIFICANT MODIFICATION OF FEDERALLY
MANDATED OPERATING PERMIT

NOTICE IS HEREBY GIVEN that the San Joaquin Valley Air Pollution Control District solicits public comment on the proposed issuance of Authority To Construct to Kern Oil and Refining Company for its refinery located at 7724 E. Panama Lane in Bakersfield, California. This project includes the installation of one 54,000 bbl organic liquid storage tank with an external floating roof.

The analysis of the regulatory basis for these proposed actions, Project #1123575, 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 the proposed initial permit must be submitted within 30 days of the publication date of this notice to **DAVID WARNER, DIRECTOR OF PERMIT SERVICES, SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT, 1990 E. GETTYSBURG AVE, FRESNO, CA 93726-0244.**

San Joaquin Valley Air Pollution Control District

Authority to Construct Application Review

54,000 Bbl External Floating Roof Organic Liquid Storage Tank

Facility Name:	Kern Oil and Refining Company	Date:	11/28/12
Mailing Address:	7724 E. Panama Lane Bakersfield, CA 93307	Engineer:	Steve Roeder
		Lead Engineer:	Allan Phillips
Contact Person:	Melinda Hicks		
Telephone:	(661) 845-0761		
Fax:	(661) 845-0330		
E-Mail:	mhicks@kernoil.com		
Application #:	S-37-148-0		
Project #:	S-1123575		
Deemed Complete:	9/28/12		

I. Proposal

Kern Oil and Refining Company (Kern Oil) operates a petroleum refining operation engaged in the production of petroleum distillates and has applied for an Authority to Construct (ATC) to install one 54,000 bbl external floating roof organic liquid storage tank.

Kern Oil has received their Title V Permit. This modification can be classified as a Title V significant modification pursuant to Rule 2520, and can be processed with a Certificate of Conformity (COC). Since the facility has specifically requested that this project be processed in that manner, the 45-day EPA comment period will be satisfied prior to the issuance of the ATC. Kern Oil must apply to administratively amend their Title V permit.

In addition, the emissions increase triggers a Federal Major Modification, and thus a 30-day public noticing period. The public noticing period will also be satisfied concurrently with the EPA-comment period, prior to the issuance of the ATC.

II. Applicable Rules

Rule 2201	New and Modified Stationary Source Review Rule (4/21/11)
Rule 2520	Federally Mandated Operating Permits (6/21/01)
Rule 4001	New Source Performance Standards (4/14/99)
Rule 4002	National Emissions Standards for Hazardous Air Pollutants (5/20/04)
Rule 4101	Visible Emissions (2/17/05)
Rule 4102	Nuisance (12/17/92)
Rule 4623	Storage of Organic Liquids (May 19, 2005)
CH&SC 41700	Health Risk Assessment
CH&SC 42301.6	School Notice

Public Resources Code 21000-21177: California Environmental Quality Act (CEQA)
California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387: CEQA Guidelines

III. Project Location

The project is located at 7724 E. Panama Lane in Bakersfield (S25, T30S, R28E). The project is not located within 1,000 feet of a K-12 school. Therefore, the public notification requirement of California Health and Safety Code 42301.6 is not applicable to this project.

IV. Process Description

Kern Oil has a railcar unloading operation and a pipeline supply. Crude Oil will be unloaded from the railcar into the new tank or from the pipeline into the new tank. The crude oil is stored until it is pumped into the feed tanks, which supply oil to the crude unit for refinery processing. The maximum oil throughput is proposed to be up to 25,000 bbl/day and 60 turnovers/year.

V. Equipment Listing

S-37-148-0: 54,000 BBL EXTERNAL FLOATING ROOF ORGANIC LIQUID STORAGE TANK WITH EITHER A DUAL WIPER SEAL WITH DRIP CURTAIN OR PRIMARY METAL SHOE SEAL WITH SECONDARY WIPER SEAL

VI. Emission Control Technology Evaluation

Emissions from the tank will be reduced as the tank is equipped a floating roof that has gasketed hatches, sliding cover, pole wiper, bolted cover, and vacuum breakers, that minimize VOC emissions due to evaporation by reducing the air space above the surface of the stored organic liquid. The permittee has requested the flexibility to install either a dual wiper seal with a drip curtain or a primary metal shoe seal with secondary wiper seal. Either configuration meets BACT and will result in at least 95% control of emissions from the tank.

VII. General Calculations

A. Assumptions

- This facility may operate 24 hours per day, 365 days per year
- Only VOC emissions come from the tank and components connected to the tank
- Tank diameter = 90 feet (Applicant)
- Shell height = 48 feet (Applicant)
- Maximum liquid height = 46 feet (Applicant)
- Maximum working capacity = 54,000 barrels (Applicant)
- Maximum daily throughput = 25,000 bbl/day (Applicant)
- Maximum annual throughput = 60 turnovers (3,126,000 bbl/yr) (Applicant)
- The weight present of VOC in the gas and oil = 100% (Applicant)
- The oil's API gravity is greater than 26 degrees (Applicant)
- The maximum storage temperature = 99 degrees F (Applicant)
- The True Vapor Pressure is less than 11 psia (Applicant)

B. Emission Factors

The emission factors or the components serving the new tank are taken from the document California Implementation Guidelines for Estimating Mass Emissions of Fugitive

Hydrocarbon Leaks at Petroleum Facilities, Table IV-2a, 1995 EPA Protocol Refinery, using Screening Value Range Emission Factors, and are presented in Appendix A.

The emission factors for the tank are from the EPA Tanks program version 4.0.9d, and are presented in Appendix B.

C. Calculations

1. Pre-Project Potential to Emit (PE1)

Since this is a new tank, PE1 = 0 for all pollutants.

2. Post Project Potential to Emit (PE2)

The daily and annual PE2 from the components serving the tank are calculated in Appendix A and presented in the following table.

The daily and annual PE2 from the tank are calculated in Appendix B and presented in the following table.

PE2		
	Daily VOC Emissions (lb/day)	Annual VOC Emissions (lb/year)
Components	1.9	701
Tank	19.0	4,837
Total	20.9	5,538

Greenhouse Gas (GHG) Emissions

The project results in an increase in VOC emissions of 5,538 lb/yr. Conservatively assuming this is 100% methane (CH_4), which has a Global Warming Potential (GWP) of 23 lb $CO2_e$/lb CH_4, the GHG increase is 127,374 lb-$CO2_e$/yr (58 metric tons $CO2_e$/yr), which is less than the Significance Threshold of 230 metric tons $CO2_e$/yr.

Pursuant to District Policy, project-specific greenhouse gas emissions less than or equal to 230 metric tons-CO2e/year are considered to be zero for District permitting purposes and are exempt from further environmental review.

3. Pre-Project Stationary Source Potential to Emit (SSPE1)

The SSPE1 is the Potential to Emit (PE) from all units with valid Authorities to Construct (ATC) or Permits to Operate (PTO) at the Stationary Source and the quantity of Emission Reduction Credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions (AER) that have occurred at the source, and which have not been used on-site.

According to Project 1121674, the SSPE for VOC emissions is already in excess of the major source and offset thresholds. Therefore, the SSPE1 calculation is not necessary.

4. Post Project Stationary Source Potential to Emit (SSPE2)

The SSPE2 is the PE from all units with valid ATCs or PTOs at the Stationary Source and the quantity of ERCs which have been banked since September 19, 1991 for AER that have occurred at the source, and which have not been used on-site.

Since the SSPE2 for VOC emissions is already above the major source and offset thresholds, the SSPE2 calculation is not necessary.

5. Major Source Determination

A major source is a stationary source with a SSPE2 equal to or exceeding one or more of the major source threshold values. The major source threshold for VOC emissions is 20,000 lb-VOC/year.

This facility is already a major source for VOC emissions and will remain a major source after this project. There are no proposed change in emissions for any other pollutants.

6. Baseline Emissions (BE)

The BE calculation (lb/year) is performed pollutant-by-pollutant for each unit within the project to calculate the QNEC, and if applicable, to determine the amount of offsets required.

Pursuant to District Rule 2201, BE = PE1 for any Clean Emissions Unit, located at a major source.

Since this tank is a new emissions unit, BE = PE1 = 0.

7. SB 288 Major Modification

SB 288 Major Modification is defined in 40 CFR Part 51.165 as "any physical change in or change in the method of operation of a major stationary source that would result in a significant net emissions increase of any pollutant subject to regulation under the [Clean Air] Act."

Since this facility is a major source for VOC, the project's PE2 is compared to the SB 288 Major Modification Thresholds in the following table in order to determine if the SB 288 Major Modification calculation is required.

SB 288 Major Modification Thresholds			
Pollutant	Project PE2 (lb/year)	Threshold (lb/year)	SB 288 Major Modification Calculation Required?
NO_x	0	50,000	No
SO_x	0	80,000	No
PM_{10}	0	30,000	No
VOC	5,538	50,000	No

Since none of the SB 288 Major Modification Thresholds are surpassed with this project, this project does not constitute an SB 288 Major Modification.

8. Federal Major Modification

District Rule 2201 states that a Federal Major Modification is the same as a "Major Modification" as defined in 40 CFR 51.165 and part D of Title I of the CAA.

The project's combined total emission increases are calculated above and compared to the Federal Major Modification Thresholds in the following table.

Federal Major Modification Thresholds for Emission Increases			
Pollutant	Total Emissions Increases (lb/yr)	Thresholds (lb/yr)	Federal Major Modification?
NO_x*	0	0	No
VOC*	5,538	0	Yes
PM_{10}	0	30,000	No
$PM_{2.5}$	0	20,000	No
SO_x	0	80,000	No

*If there is any emission increases in NO_x or VOC, this project is a Federal Major Modification and no further analysis is required.

Since there is an increase in VOC emissions, this project constitutes a Federal Major Modification, and therefore triggers a 30-day public noticing period. The public noticing period will be satisfied prior to the issuance of the ATC for this tank.

9. Quarterly Net Emissions Change (QNEC)

The QNEC is used to complete the emission profile screen for the District's PAS database. The QNEC for each pollutant is calculated as follows.

$$QNEC = \frac{(PE2 - PE1)\frac{lb}{yr}}{4\frac{Quarters}{yr}}$$

QNEC				
Unit	Pollutant	PE1 (lb/yr)	PE2 (lb/yr)	QNEC (lb/qtr)
S-27-148-0	NO_x	0	0	0
	SO_x	0	0	0
	PM_{10}	0	0	0
	CO	0	0	0
	VOC	0	5,538	1,385

VIII. Compliance

Rule 2201 New and Modified Stationary Source Review Rule

A. Best Available Control Technology (BACT)

1. BACT Applicability

BACT requirements are triggered on a pollutant-by-pollutant basis and on an emissions unit-by-emissions unit basis. Unless specifically exempted by Rule 2201, BACT shall be required for the following actions*:

a. Any new emissions unit with a potential to emit exceeding two pounds per day,
b. The relocation from one Stationary Source to another of an existing emissions unit with a potential to emit exceeding two pounds per day,
c. Modifications to an existing emissions unit with a valid Permit to Operate resulting in an AIPE exceeding two pounds per day, and/or
d. Any new or modified emissions unit, in a stationary source project, which results in an SB 288 Major Modification or a Federal Major Modification, as defined by the rule.

*Except for CO emissions from a new or modified emissions unit at a Stationary Source with an SSPE2 of less than 200,000 pounds per year of CO.

a. New emissions units – PE > 2 lb/day

Since the new tank has a PE of greater than 2 lb/day, BACT is triggered for the tank for VOC emissions.

b. Relocation of emissions units – PE > 2 lb/day

As discussed in Section I above, there are no emissions units being relocated from one stationary source to another for this project. Therefore BACT is not triggered for this purpose.

c. Modification of emissions units – AIPE > 2 lb/day

As discussed in Section I above, there are no modified emissions units associated with this project. Therefore BACT is not triggered for this purpose.

d. SB 288/Federal Major Modification

As discussed in above, this project does constitute a Federal Major Modification for VOC emissions. Therefore, BACT is triggered for Federal Major Modification purposes.

2. BACT Guideline

BACT Guideline 7.3.3 applies to floating roof organic liquid storage tanks ≥471 bbl and ≥0.5 psia TVP, and is presented in Appendix C.

3. Top-Down BACT Analysis

Pursuant to the attached Top-Down BACT Analysis (see Appendix C), BACT is satisfied with a floating roof consisting of Dual wiper seal with drip curtain or primary metal shoe seal with secondary wiper seal, or equal.

B. Offsets

1. Offset Applicability

Offset requirements are triggered on a pollutant by pollutant basis and shall be required if the SSPE2 equals to or exceeds the offset threshold levels established in Rule 2201.

Since the SSPE1 and SSPE2 are above the offset threshold of 20,000 lb-VOC/year, emission offsets are triggered for this project for VOC emissions.

2. Quantity of Offsets Required

Since offsets are triggered for VOC emissions, offset calculations are required for this project.

For sources where the SSPE1 is already greater than the offset threshold, and where no cargo carriers are involved, the quantity of offsets required is calculated as follows.

Offsets Required (lb/year) = PE2 x DOR

Where, DOR = Distance Offset Ratio, determined pursuant to Section 4.8.

Since this project triggers a Federal Major Modification, the DOR = 1.5. Therefore the quantity of offsets required is:

$$5{,}538\frac{lb \cdot VOC}{Year} x\ 1.5 = 8{,}307\frac{lb \cdot VOC}{year} \div \frac{4\ Quarters}{year} = 2{,}077\frac{lb \cdot VOC}{Quarter}$$

The quarterly amount of offsets required is presented in the following table.

Offsets Required				
	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
ERC S-3944-1	2,077	2,077	2,077	2,077

The applicant has proposed to use ERC certificate S-3944-1 to provide offsets, and the following conditions are listed on the ATC to ensure compliance.

- Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits in the amount of 2,077 lb/quarter. These amounts include the applicable offset ratio of 1.5:1, as specified in Rule 2201 Section 4.8 (as amended 4/21/11) for the ERC specified below. [District Rule 2201]

- ERC Certificate Number S-3944-1 (or a certificate split from this certificate) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201]

C. Public Notification

1. Applicability

Public noticing is required for:

a. New Major Sources, Federal Major Modifications, and SB 288 Major Modifications,
b. Any new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any one pollutant,
c. Any project which results in the offset thresholds being surpassed, and/or
d. Any project with an SSIPE of greater than 20,000 lb/year for any pollutant.

a. New Major Sources, Federal Major Modifications, and SB 288 Major Modifications

Since this project constitutes a Federal Major Modification, public noticing is required for this purpose.

b. PE > 100 lb/day

Since this project does not contain an emissions unit with a PE exceeding 100 lb/day for any pollutant, public noticing is not required for this purpose.

c. Offset Threshold

The SSPE1 and SSPE2 for this project are both above the offset threshold for VOC emissions. Since no offset thresholds are being surpassed with this project, public noticing is not required for this purpose.

d. SSIPE > 20,000 lb/year

Public notification is required for any permitting action that results in a SSIPE of more than 20,000 lb/year of any affected pollutant, where SSIPE = SSPE2 – SSPE1.

Since the SSIPE for this project is the same as the PE2, which is 5,538 lb/year, public noticing is not required for this purpose.

2. Public Notice Action

This project triggers public noticing for Federal Major Modification purposes. Therefore, public notice documents will be submitted to the California Air Resources Board (CARB) and a public notice will be published in a local newspaper of general circulation prior to the issuance of the ATC for this tank.

D. Daily Emission Limits (DELs)

DELs and other enforceable conditions are required by Rule 2201 to restrict a unit's maximum daily emissions, to a level at or below the emissions associated with the maximum design capacity. The DEL must be contained in the latest ATC and contained in or enforced by the latest PTO and enforceable, in a practicable manner, on a daily basis. DELs are also required to enforce the applicability of BACT.

The following conditions are listed on the permit to ensure compliance.

- The tank shall be equipped with a floating roof consisting of a 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 Rules 2201 and 4623, 5.3.1 and 40 CFR 60.112b(a)(2) & (i)]
- {271} All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201]
- Organic liquid throughput shall not exceed 25,000 bbl/day based on a monthly average. [District Rule 2201]
- The True Vapor Pressure (TVP) of the organic liquid stored shall be less than 11 psia. [District Rules 2201 and 4623 and 40 CFR 60.110b(b)]
- Emissions from the components serving the tank shall not exceed 1.9 lb-VOC/day. [District Rule 2201]

E. Compliance Assurance

1. Source Testing

Pursuant to District Policy APR 1705, source testing is not required to demonstrate compliance with Rule 2201.

2. Monitoring

Monitoring is required to demonstrate compliance with Rule 2201. The following condition is listed on the permit to ensure compliance.

- Permittee shall determine the true vapor pressure (TVP) of the organic liquid, using methods specified for maximum true vapor pressure in this permit, upon initial filling, and whenever there is a change in the source or type of organic liquid stored in this tank. [District Rule 2201]

3. Recordkeeping

Recordkeeping is required to demonstrate compliance with the offset, public notification and daily emission limit requirements of Rule 2201.

The following conditions are listed on the permit to ensure compliance.

- Operator shall maintain monthly and annual records of the tank's throughput. [District Rule 2201]
- Permittee shall maintain an accurate component count and resultant emissions according to California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities, Table IV-2a, 1995 EPA Protocol, Refinery, using screening value ranges emission factors. [District Rule 2201]

4. Reporting

No reporting is required to demonstrate compliance with Rule 2201.

F. Ambient Air Quality Analysis (AAQA)

An AAQA is conducted by the Technical Services Department, for any project which has an increase in emissions for which an Ambient Air Quality Standard (AAQS) exists, and triggers public notification requirements. Since no AAQS currently exists for VOC, an AAQA is not required for this project.

H. Alternate Siting Analysis

An Alternative Siting Analysis is required for any project which constitutes a Federal Major Modification. The current project is located at an existing facility.

The applicant proposes to install a 54,000 bbl floating roof storage tank. Since the tank will be located on-site, and will store crude oil from the pipeline and railcar unloading operation, an alternate siting is not practical for this project.

Rule 2520 Federally Mandated Operating Permits

Kern Oil is subject to this Rule, and has received their Title V Operating Permit. The proposed modification is a significant modification to the Title V Permit, since this project also triggers a Federal Major Modification. See the cover letter and Title V Compliance Certification form in Appendix D.

As discussed above, the facility has applied for a Certificate of Conformity (COC). Therefore, the facility must apply to modify their Title V permit with an administrative amendment prior to operating with the proposed modifications. Continued compliance with this rule is expected.

Rule 4001 New Source Performance Standards (NSPS)

This rule incorporates NSPS from Part 60, Chapter 1, Title 40, Code of Federal Regulations (40 CFR 60); and applies to all new sources of air pollution and modifications of existing sources of air pollution listed in 40 CFR 60. 40 CFR 60, Subpart Kb applies to volatile organic liquid storage vessels for which construction, reconstruction, or modification commenced after July 23, 1984.

40 CFR 60, Subpart Kb is summarized in Appendix E. The following conditions are listed on the permit to ensure compliance.

- The tank shall be equipped with a floating roof consisting of a 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 Rules 2201 and 4623, 5.3.1 and 40 CFR 60.112b(a)(2) & (i)]
- 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)]
- {2738} 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)]
- Accumulated area of gaps between the tank wall and the mechanical shoe or liquid-mounted primary seal shall not exceed 212 sq cm per meter of tank diameter, and the width of any gap shall not exceed 3.81 cm. [40CFR 60.113b(b)(4)(i)]
- Accumulated area of gaps between the tank wall and the secondary seal shall not exceed 21.2 sq cm per meter of tank diameter, and the width of any portion of any gap shall not exceed 1.27 cm (1/2 inch). [40CFR 60.113b(b)(4)(ii)(B)]
- {2741} 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)]
- {2742} 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)]
- {2749} 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)]]
- {2750} 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)]

- 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 and 40 CFR 60.113b(b)(1)(i) & (ii)]
- {2752} Operator shall also perform gap measurements on primary seals during hydrostatic testing of the vessel. [40CFR 60.113b(b)(1)(i)]
- {2753} 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. [40 CFR 60.113b(b)(1)(iii)]
- 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, 6.1.3.2 and 40 CFR 60.113b(b)(6)]
- {2755} 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)]
- {2756} 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)]
- {2757} 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)]
- {2758} 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)]
- {2759} 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)]
- {2760} 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)]
- {2761} 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)]

- An operator 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 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) Leak-free status of the tank and floating roof deck fittings. Records of the leak-free 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 and 40CFR 60.115b(b)(4)]
- {2763} 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)]
- {2630} 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)]
- {2624} 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)]
- {2626} 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)]
- {2627} 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)]
- {2623} 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)]
- {2764} 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)]

Rule 4002 National Emission Standards for Hazardous Air Pollutants (NESHAPs)

This rule incorporates NESHAPs from Part 61, Chapter I, Subchapter C, Title 40, CFR and the NESHAPs from Part 63, Chapter I, Subchapter C, Title 40, CFR; and applies to all sources of

hazardous air pollution listed in 40 CFR Part 61 or 40 CFR Part 63. However, no subparts of 40 CFR Part 61 or 40 CFR Part 63 apply to organic liquid storage tanks.

Rule 4101 Visible Emissions

Rule 4101 states that no person shall discharge into the atmosphere emissions of any air contaminant aggregating more than 3 minutes in any hour which is as dark as or darker than Ringelmann 1 (or 20% opacity). As emissions from this equipment consist only of fugitive VOC emissions, visible emissions are not expected to exceed Ringelmann 1 or 20% opacity.

Rule 4102 Nuisance

Rule 4102 prohibits discharge of air contaminants which could cause injury, detriment, nuisance or annoyance to the public. Public nuisance conditions are not expected as a result of these operations, provided the equipment is well maintained.

The following condition is listed on the permit to ensure compliance.

- {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

California Health & Safety Code 41700 (Health Risk Assessment)

District Policy APR 1905 – *Risk Management Policy for Permitting New and Modified Sources* specifies that for an increase in emissions associated with a proposed new source or modification, the District perform an analysis to determine the possible impact to the nearest resident or worksite.

Technical Services performed a prioritization using the District's HEARTs database. Since the facility-wide total prioritization scores were greater than one, a refined health risk assessment was required and performed. See the HRA results in Appendix F.

The RMR summary is shown below.

RMR Summary			
Categories	Crude Oil Storage Tank (Unit 148-0)	Project Totals	Facility Totals
Prioritization Score	0.03	0.03	>1.0
Acute Hazard Index	0.00	0.00	0.82
Chronic Hazard Index	0.00	0.00	0.26
Maximum Individual Cancer Risk	2.26E-08	2.26E-08	*9.83E-06**
T-BACT Required?	No		
Special Permit Conditions?	No		

**The Maximum Individual Cancer Risk has almost reached its facility-wide total limit of 9.99E-06.*

Discussion of Toxic Best Available Control Technology (T-BACT)

The acute and chronic indices are below 1.0; and the maximum individual cancer risk associated with the project is 2.26E-08, which is less than the 1 in a million threshold. In accordance with the District's Risk Management Policy, the project is approved without T-BACT.

Rule 4623 Storage of Organic Liquids

This rule applies to any tank with a design capacity of 1,100 gallons or greater used to store organic liquid with a True Vapor Pressure (TVP) of 0.5 psia or greater.

Section 5.1 requires that an operator shall not place, hold, or store organic liquid in any tank unless such tank is equipped with a VOC control system as follows.

Tank Design Capacity (gallon)	True Vapor Pressure (TVP) of Organic Liquid		
	0.5 < TVP (psia) <1.5	1.5 < TVP (psia) <11	11 < TVP (psia)
>39,600	Internal Floating Roof, Or External Floating Roof, Or Vapor Recovery System	Internal Floating Roof, Or External Floating Roof, Or Vapor Recovery System	Pressure Vessel, Or Vapor Recovery System

The tank design capacity is 2.3 million gallons and is storing organic liquid with a TVP of less than 11 psia. Therefore, the external floating roof design satisfies the requirements of this section. The following conditions are listed on the permit to ensure compliance.

- The True Vapor Pressure (TVP) of the organic liquid stored shall be less than 11 psia. [District Rules 2201 and 4623 and 40 CFR 60.110b(b)]

Section 5.1.2 applies to only to small producers.

Section 5.1.3 requires all tanks to be maintained in a leak-free condition except the primary and secondary seals, floating roof deck fittings. The following conditions are listed on the permit to ensure compliance.

- This tank shall be maintained in a leak-free condition, except for the primary and secondary seals, roof deck fittings and floating roof automatic bleeder vents, and as allowed by Section 5.2 and applicable provisions of Table 3 through Table 5, and Section 5.7.5.4. [District Rule 4623, 5.1.3]
- 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, except for primary and secondary seals, floating roof deck fittings, and floating roof automatic bleeder vents is a violation of this permit and Rule 4623 and shall be reported as a deviation. [District Rule 4623]

Section 5.2 applies only to P/V vent valves.

Section 5.3 lists the specifications for external floating roof tanks. The following conditions are applicable to welded tanks and are listed on the permit to ensure compliance.

- This tank shall be equipped with a floating roof consisting of a 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 Rules 2201 and 4623, 5.3.1 and 40 CFR 60.112b(a)(2) & (i)]
- 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)]
- {2656} Gaps between the tank shell and the primary seal shall not exceed 1 1/2 inches. [District Rule 4623, 5.3.2.1.1]
- {2657} 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]
- {2658} 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]
- {2659} 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]
- {2661} 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]
- {2662} 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] Y
- {2663} 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]
- {2741} 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)]
- {2665} 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]
- {2666} 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]

Section 5.4 applies only to internal floating roof tanks.

Section 5.5 specifies floating roof deck fitting requirements. The following conditions are listed on the permit to ensure compliance.

- {2687} 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]
- 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]
- 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]
- {2749} 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)]]
- {2750} 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)]
- Each emergency roof drain shall be provided with a slotted membrane fabric cover that covers at least 90 percent of the area of the opening. The fabric cover must be impermeable if the liquid is drained into the contents of the tanks. [District Rule 4623, 5.5.2.2.5]
- 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]

Section 5.5.2.3 specifies standards for the solid guidepole. The following conditions are listed on the permit to ensure compliance.

- 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]
- 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]
- 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, 5.5.2.3.3]

Section 5.6 applies to vapor recovery systems.

Section 6 lists administrative requirements and specifies external roof tank inspection requirements. The following conditions are listed on the permit to ensure compliance.

- {2699} 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]
- Operator 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, 6.1.2]
- Operator shall inspect all floating tanks within 60 days of initial startup and at least once every 12 months to determine compliance with the requirements of this rule. 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 and 40 CFR 60.113b(b)(1)(i) & (ii)]
- Operator shall inspect the primary and secondary seals for compliance with the requirements of this rule every time a tank is emptied or degassed. Actual gap measurements shall be performed when the liquid level is static but not more than 48 hours after the tank roof is re-floated. [District Rule 4623, 6.1.3.2 and 40 CFR 60.113b(b)(6)]

Section 6.2 applies to uncontrolled fixed roof tanks only.

Section 6.3 specifies recordkeeping requirements. The following conditions are listed on the permit to ensure compliance.

- An operator 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 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) Leak-free status of the tank and floating roof deck fittings. Records of the leak-free 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 and 40CFR 60.115b(b)(4)]

- {2755} 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)]
- All records shall be retained for a period of at least five years and shall be made readily available for District inspection upon request. [District Rules 4623 and 1070]
- The API gravity of crude oil or petroleum distillate shall be determined by using ASTM Method D 287-92 (2000) 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 4057-95 "Standard Practices for Manual Sampling of Petroleum and Petroleum Products". [District Rule 4623, 6.4.2]
- The TVP of any organic liquid shall be determined by measuring the Reid Vapor Pressure (RVP) using ASTM D 323-94 (Test Method for Vapor Pressure for Petroleum Products), 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 procedures in Appendix B. Appendix B is an excerpt from the oil and gas section of "ARB Technical Guidance Document to the Criteria and Guidelines Regulation for AB 2588", dated August 1989. As an alternative to using ASTM D 323-94, 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 US EPA. [District Rule 4623, 6.4.3]
- 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 US EPA, shall be used to determine the TVP of crude oil with an API gravity of 26 degrees or less, or for any API gravity that is specified in this test method. [District Rule 4623, 6.4.4]

Compliance with Rule 4623 is expected.

California Health & Safety Code 42301.6 (School Notice)

The District has verified that this site is not located within 1,000 feet of a school. Therefore, pursuant to California Health and Safety Code 42301.6, a school notice is not required.

California Environmental Quality Act (CEQA)

CEQA requires each public agency to adopt objectives, criteria, and specific procedures consistent with CEQA Statutes and the CEQA Guidelines for administering its responsibilities under CEQA, including the orderly evaluation of projects and preparation of environmental documents. The District adopted its *Environmental Review Guidelines* (ERG) in 2001. The basic purposes of CEQA are to:

- Inform governmental decision-makers and the public about the potential, significant environmental effects of proposed activities;
- Identify the ways that environmental damage can be avoided or significantly reduced;

- Prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible; and
- Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

Greenhouse Gas (GHG) Significance Determination

It is determined that no other agency has or will prepare an environmental review document for the project. Thus the District is the Lead Agency for this project.

The District's engineering evaluation (this document, see Section VII.C.2 above) demonstrates that the project would not result in a significant increase in project-specific greenhouse gas emissions. The District therefore concludes that the project would have a less than cumulatively significant impact on global climate change.

District CEQA Findings

The District is the Lead Agency for this project because there is no other agency with broader statutory authority over this project. The District performed an Engineering Evaluation (this document) for the proposed project and determined that the activity will occur at an existing facility and the project involves negligible expansion of the existing use. Furthermore, the District determined that the activity will not have a significant effect on the environment. The District finds that the activity is categorically exempt from the provisions of CEQA pursuant to CEQA Guideline § 15031 (Existing Facilities), and finds that the project is exempt per the general rule that CEQA applies only to projects which have the potential for causing a significant effect on the environment (CEQA Guidelines §15061(b)(3)).

IX. Recommendation

Compliance with all applicable rules and regulations is expected. Pending a successful Public Noticing and COC noticing period, issue ATC S-37-148-0 subject to the permit conditions listed on the attached draft ATC.

X. Billing Information

Annual Permit Fees			
Permit Number	Fee Schedule	Fee Description	Annual Fee
S-37-148-0	3020-05-G	2,300,000 gallons	$382.00

Appendixes

A: Emissions from Components Serving the Tank
B: Emissions from the Tank
C: BACT Guideline and BACT Analysis
D: Cover Letter and Compliance Certification Form
E: Summary of 40 CFR 60 Subpart Kb
F: HRA Summary
G: Draft ATC

APPENDIX A

Emissions from Components Serving the Tank

Kern Oil and Refining Company
S-37-148-0

Fugitive Emissions Using Screening Emission Factors

California Implementation Guidelines for Estimating Mass Emissions
of Fugitive Hydrocarbon Leaks at Petroleum Facilities
Table IV-2a. 1995 EPA Protocol Refinery
Screening Value Ranges Emission Factors

Percentage of components with ≥ 10,000 ppmv leaks allowed?	0 %
Weight percentage of VOC in the total organic compounds in gas (neglect non-organi	100 %
Weight percentage of VOC in the total organic compounds in oil (neglect non-organic	100 %

Equipment Type	Service	Component Count	Total allowable leaking components	Screening Value EF - TOC < 10,000 ppmv (lb/day/source)	Screening Value EF - TOC ≥ 10,000 ppmv (lb/day/source)	VOC emissions (lb/day)
Valves	Gas/Light Liquid	0	0	3.172E-02	1.389E+01	0.000
	Light Crude Oil	18	0	8.995E-02	4.508E+00	1.619
	Heavy Crude Oil	0	0	1.217E-02	1.217E-02	0.000
Pump Seals	Light Liquid	0	0	6.349E-01	2.312E+01	0.000
	Heavy Liquid	0	0	7.143E-01	2.056E+01	0.000
Compressor Seals	Gas	0	0	4.730E+00	8.508E+01	0.000
	Hydrogen**	0	0	0.000E+00	0.000E+00	0.000
Pressure Relief Valves	All (w/o rupture dis	0	0	2.365E+00	8.947E+01	0.000
	All (w rupture disc)***	0	0	0.000E+00	0.000E+00	0.000
Connectors	All (flanges)	20	0	3.173E-03	1.984E+00	0.063
	All (THD)	75	0	3.175E-03	1.984E+00	0.238
Open-ended lines	All	0	0	7.937E-02	1.032E+00	0.000

* Emission factor not available. All components from equipment type and service will be assessed as < 10,000 ppmv
** VOC Content < 10%
*** PRVs with Rupture Disc are assumed to have a 0 emission rate.

Total VOC Emissions = 1.92 lb/day
= 701 lb/year

APPENDIX B

Emissions from the Tank

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	TK 54000 EFR
City:	Bakersfield
State:	California
Company:	Kern Oil & Refining Co.
Type of Tank:	External Floating Roof Tank
Description:	

Tank Dimensions

Diameter (ft):	90.00
Volume (gallons):	2,188,956.00
Turnovers:	60.00

Paint Characteristics

Internal Shell Condition:	Light Rust
Shell Color/Shade:	Gray/Medium
Shell Condition	Good

Roof Characteristics

Type:	Double Deck
Fitting Category	Detail

Tank Construction and Rim-Seal System

Construction:	Welded
Primary Seal:	Mechanical Shoe
Secondary Seal	Shoe-mounted

Deck Fitting/Status	Quantity
Access Hatch (24-in. Diam.)/Bolted Cover, Gasketed	1
Automatic Gauge Float Well/Bolted Cover, Gasketed	1
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1
Unslotted Guide-Pole Well/Gasketed sliding Cover, w. Wiper	1
Gauge-Hatch/Sample Well (8-in. Diam.)/Weighted Mech. Actuation, Gask.	1
Roof Drain (3-in. Diameter)/90% Closed	1
Roof Leg (3-in. Diameter)/Adjustable, Double-Deck Roofs	20
Rim Vent (6-in. Diameter)/Weighted Mech. Actuation, Gask.	1

Meterological Data used in Emissions Calculations: Bakersfield, California (Avg Atmospheric Pressure = 14.47 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

TK 54000 EFR - External Floating Roof Tank
Bakersfield, California

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Crude Oil RVP 11	Jan	63.27	58.51	70.02	68.48	6.8148	N/A	N/A	50.0000			207.00	Option 4: RVP=9
Crude Oil RVP 11	Feb	67.47	58.59	76.34	68.48	7.3081	N/A	N/A	50.0000			207.00	Option 4: RVP=9
Crude Oil RVP 11	Mar	71.51	60.33	82.70	68.48	7.8093	N/A	N/A	50.0000			207.00	Option 4: RVP=9
Crude Oil RVP 11	Apr	76.56	62.62	90.50	68.48	8.4707	N/A	N/A	50.0000			207.00	Option 4: RVP=9
Crude Oil RVP 11	May	82.14	68.09	98.20	68.48	9.2515	N/A	N/A	50.0000			207.00	Option 4: RVP=9
Crude Oil RVP 11	Jun	88.48	69.21	103.78	68.48	9.8957	N/A	N/A	50.0000			207.00	Option 4: RVP=9
Crude Oil RVP 11	Jul	88.91	71.68	108.15	68.48	10.2714	N/A	N/A	50.0000			207.00	Option 4: RVP=9
Crude Oil RVP 11	Aug	86.97	71.01	102.92	68.48	9.9696	N/A	N/A	50.0000			207.00	Option 4: RVP=9
Crude Oil RVP 11	Sep	82.25	68.51	96.00	68.48	9.2679	N/A	N/A	50.0000			207.00	Option 4: RVP=9
Crude Oil RVP 11	Oct	75.69	64.35	87.02	68.48	8.3532	N/A	N/A	50.0000			207.00	Option 4: RVP=9
Crude Oil RVP 11	Nov	67.76	59.46	76.06	68.48	7.3432	N/A	N/A	50.0000			207.00	Option 4: RVP=9
Crude Oil RVP 11	Dec	62.79	56.34	69.23	68.48	6.7598	N/A	N/A	50.0000			207.00	Option 4: RVP=9

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

TK 54000 EFR - External Floating Roof Tank
Bakersfield, California

Month:	January	February	March	April	May	June	July	August	September	October	November	December
Rim Seal Losses (lb):	137.1857	172.1694	218.2167	276.3094	366.4986	411.4669	389.4629	342.5660	268.7498	198.7781	148.9274	129.6985
Seal Factor A (lb-mole/ft-yr):	1.6000	1.6000	1.6000	1.6000	1.6000	1.6000	1.6000	1.6000	1.6000	1.6000	1.6000	1.6000
Seal Factor B (lb-mole/ft-yr (mph)^n):	0.3000	0.3000	0.3000	0.3000	0.3000	0.3000	0.3000	0.3000	0.3000	0.3000	0.3000	0.3000
Average Wind Speed (mph):	5.2000	5.8000	6.5000	7.1000	7.9000	7.9000	7.2000	6.8000	6.2000	5.5000	5.1000	5.0000
Seal-related Wind Speed Exponent:	1.6000	1.6000	1.6000	1.6000	1.6000	1.6000	1.6000	1.6000	1.6000	1.6000	1.6000	1.6000
Value of Vapor Pressure Function:	0.1578	0.1740	0.1915	0.2166	0.2496	0.2802	0.2998	0.2839	0.2503	0.2120	0.1752	0.1561
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	6.8146	7.3081	7.8093	8.4707	9.2515	9.8957	10.2714	9.9696	9.2879	8.3532	7.3432	6.7598
Tank Diameter (ft):	90.0000	90.0000	90.0000	90.0000	90.0000	90.0000	90.0000	90.0000	90.0000	90.0000	90.0000	90.0000
Vapor Molecular Weight (lb/lb-mole):	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000
Product Factor:	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000
Withdrawal Losses (lb):	120.5154	120.5154	120.5154	120.5154	120.5154	120.5154	120.5154	120.5154	120.5154	120.5154	120.5154	120.5154
Net Throughput (gal/mo.):	11,340,000.0000	11,340,000.0000	11,340,000.0000	11,340,000.0000	11,340,000.0000	11,340,000.0000	11,340,000.0000	11,340,000.0000	11,340,000.0000	11,340,000.0000	11,340,000.0000	11,340,000.0000
Shell Clingage Factor (bbl/1000 sqft):	0.0060	0.0060	0.0060	0.0060	0.0060	0.0060	0.0060	0.0060	0.0060	0.0060	0.0060	0.0060
Average Organic Liquid Density (lb/gal):	7.1000	7.1000	7.1000	7.1000	7.1000	7.1000	7.1000	7.1000	7.1000	7.1000	7.1000	7.1000
Tank Diameter (ft):	90.0000	90.0000	90.0000	90.0000	90.0000	90.0000	90.0000	90.0000	90.0000	90.0000	90.0000	90.0000
Roof Fitting Losses (lb):	18.9054	21.3264	24.0782	27.7953	32.8822	36.9167	38.6012	36.0627	31.1253	25.6866	20.9084	18.5506
Value of Vapor Pressure Function:	0.1578	0.1740	0.1915	0.2166	0.2496	0.2802	0.2998	0.2839	0.2503	0.2120	0.1752	0.1561
Vapor Molecular Weight (lb/lb-mole):	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000
Product Factor:	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000
Tot. Roof Fitting Loss Fact.(lb-mole/yr):	71.6738	73.5312	75.4183	76.9961	79.0582	79.0582	77.2565	76.2100	74.6143	72.7077	71.5931	71.3113
Average Wind Speed (mph):	5.2000	5.8000	6.5000	7.1000	7.8000	7.9000	7.2000	6.8000	6.2000	5.5000	5.1000	5.0000
Total Losses (lb):	276.6085	314.0112	362.8083	424.6201	519.8972	568.8989	548.5795	499.1441	420.3905	342.9801	290.3492	268.7645

Roof Fitting/Status	Quantity	Roof Fitting Loss Factors KFa(lb-mole/yr)	KFb(lb-mole/(yr mph^n))	m	Losses(lb)
Access Hatch (24-in. Diam.)/Bolted Cover, Gasketed	1	1.60	0.00	0.00	7.0673
Automatic Gauge Float Well/Bolted Cover, Gasketed	1	2.80	0.00	0.00	12.3679
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1	6.20	1.20	0.94	49.4892
Unslotted Guide-Pole Well/Gasketed sliding Cover, w. Wiper	1	14.00	3.70	0.78	115.2086
Gauge-Hatch/Sample Well (8-in. Diam.)/Weighted Mech. Actuation, Gask.	1	0.47	0.02	0.97	2.4617
Roof Drain (3-in. Diameter)/90% Closed	1	1.80	0.14	1.10	11.2456
Roof Leg (3-in. Diameter)/Adjustable, Double-Deck Roofs	20	0.82	0.53	0.14	130.2808
Rim Vent (6-in. Diameter)/Weighted Mech. Actuation, Gask.	1	0.71	0.10	1.00	5.1552

$Q_1 = 276.6 + 314.0 + 362.8 = 953.4$

$Q_2 = 424.6 + 519.9 + 568.9 = 1,513.4$

$Q_3 = 548.6 + 499.1 + 420.4 = 1,468.1$

$Q_4 = 342.9 + 290.3 + 268.8 = 902.0$

TOTAL 4,837

MAXIMUM DAILY EMISSIONS OCCUR IN JUNE

$\frac{568.9 \text{ LB}}{30 \text{ days}} = 18.96 \text{ LB/day}$

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: January, February, March, April, May, June, July, August, September, October, November, December

TK 54000 EFR - External Floating Roof Tank
Bakersfield, California

	Losses(lbs)				
Components	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	Total Emissions
Crude Oil RVP 11	3,058.03	1,446.18	332.83	0.00	4,837.05

APPENDIX C

BACT Guideline and BACT Analysis

Best Available Control Technology (BACT) Guideline 7.3.3
Last Update: 10/1/2002

Petroleum and Petrochemical Production - Floating Roof Organic Liquid Storage or Processing Tank, = or > 471 bbl Tank capacity, = or > 0.5 psia TVP

Pollutant	Achieved in Practice or in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC	95% control (Primary metal shoe seal with secondary wiper seal, or equal)	95% Control (Dual wiper seal with drip curtain or primary metal shoe seal with secondary wiper seal, or equal.)	

BACT is the most stringent control technique for the emissions unit and class of source. Control techniques that are not achieved in practice or contained in s a state implementation plan must be cost effective as well as feasible. Economic analysis to demonstrate cost effectiveness is required for all determinations that are not achieved in practice or contained in an EPA approved State Implementation Plan.

BACT Analysis: Floating Roof Tank

1. BACT Analysis for VOC Emissions:

a. Step 1 - Identify all control technologies

The SJVUAPCD BACT Clearinghouse guideline 7.3.3, 4th quarter 2002, identifies BACT for VOC emissions from a floating roof organic liquid storage tank ≥471 bbl or ≥0.5 psia TVP as follows:

1) 95% Control (Primary metal shoe seal with secondary wiper seal, or equal). – Achieved in Practice
2) 95% Control (Dual wiper seal, with drip curtain or primary metal shoe seal with secondary wiper seal, or equal.) – Technologically Feasible

b. Step 2 - Eliminate technologically infeasible options

There are no technologically infeasible options to eliminate from step 1.

c. Step 3 - Rank remaining options by control effectiveness

1) 95% Control (Primary metal shoe seal with secondary wiper seal, or equal). – Achieved in Practice
2) 95% Control (Dual wiper seal, with drip curtain or primary metal shoe seal with secondary wiper seal, or equal.) – Technologically Feasible

d. Step 4 - Cost Effectiveness Analysis

The applicant has proposed installing technologically feasible BACT. Since this has the same control efficiency as Achieved-in-practice BACT, no cost-effectiveness analysis is necessary.

e. Step 5 – Selection of BACT

The proposed use of an external floating roof equipped with a primary metal shoe seal with secondary wiper seal resulting in 95% VOC emissions control efficiency satisfies BACT requirements for this tank.

Appendix D
Cover Letter and Compliance Certification Form

Kern Oil & Refining Co.
7724 E. PANAMA LANE
BAKERSFIELD, CALIFORNIA 93307-9210
(661) 845-0761 FAX (661) 845-0330

September 18, 2012

Mr. Leonard Scandura
SJVAPCD
34946 Flyover Court
Bakersfield, CA 93308

Subject: Kern Oil & Refining Co. – Compliance Certification
Project Tank 54000 Project Application

Dear Mr. Scandura:

District Rule 2201, Section 4.15.2, requires that an owner or operator proposing a Federal Major Modification certify that all major stationary sources owned or operated by such person (or by any entity controlling, controlled by, or under common control with such person) in California are either in compliance or on a schedule for compliance with all applicable emission limitations and standards. This letter certifies compliance for Kern Oil & Refining Co.

Kern Oil & Refining Co. (Kern) is the sole owner and operator of a petroleum refining facility, ID S-37, located at 7724 E. Panama Lane in Bakersfield, CA. Kern has Notices of Violation outstanding; however all issues associated with these are currently being addressed.

This certification is made on information and belief and is based upon a review of Kern's major source facility by employees who have responsibility for compliance and environmental requirements. This certification is as of the date of its execution.

If you have any questions, please call Juan Campos, EHS Advisor or Melinda Hicks, EHS Manager at (661) 845-0761.

Sincerely,

Bruce Cogswell
VP Manufacturing

cc: Melinda Hicks

San Joaquin Valley
Unified Air Pollution Control District

TITLE V MODIFICATION - COMPLIANCE CERTIFICATION FORM

I. TYPE OF PERMIT ACTION (Check appropriate box)

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

COMPANY NAME: Kern Oil and Refining Co.	FACILITY ID: S-37
1. Type of Organization:[X] Corporation [ ] Sole Ownership [ ] Government [ ] Partnership [ ] Utility	
2. Owner's Name: Kern Oil & Refining Co.	
3. Agent to the Owner: n/a	

II. COMPLIANCE CERTIFICATION (Read each statement carefully and initial all circles for confirmation):

BC Based on information and belief formed after reasonable inquiry, the equipment identified in this application will continue to comply with the applicable federal requirement(s).

BC Based on information and belief formed after reasonable inquiry, the equipment identified in this application will comply with applicable federal requirement(s) that will become effective during the permit term, on a timely basis.

BC Corrected information will be provided to the District when I become aware that incorrect or incomplete information has been submitted.

BC Based on information and belief formed after reasonable inquiry, information and statements in the submitted application package, including all accompanying reports, and required certifications are true accurate and complete.

I declare, under penalty of perjury under the laws of the state of California, that the forgoing is correct and true:

Bruce Cogswell — 9/19/12

Signature of Responsible Official — Date

Bruce Cogswell

Name of Responsible Official (please print)

Vice President - Manufacturing

Title of Responsible Official (please print)

APPENDIX E

Summary of 40 CFR 60 Subpart Kb

The following requirements are specified in 40 CFR 60.112b, 115b and 116b.

40 CFR 60.112b Standard for volatile organic compounds (VOC)

After installing the control equipment required to meet § 60.112b(a)(2) (external floating roof), the owner or operator shall:

(1) Determine the gap areas and maximum gap widths, between the primary seal and the wall of the storage vessel and between the secondary seal and the wall of the storage vessel according to the following frequency.

(i) Measurements of gaps between the tank wall and the primary seal (seal gaps) shall be performed during the hydrostatic testing of the vessel or within 60 days of the initial fill with VOL and at least once every 5 years thereafter.

(ii) Measurements of gaps between the tank wall and the secondary seal shall be performed within 60 days of the initial fill with VOL and at least once per year thereafter.

(iii) If any source ceases to store VOL for a period of 1 year or more, subsequent introduction of VOL into the vessel shall be considered an initial fill for the purposes of paragraphs (b)(1)(i) and (b)(1)(ii) of this section.

(2) Determine gap widths and areas in the primary and secondary seals individually by the following procedures:

(i) Measure seal gaps, if any, at one or more floating roof levels when the roof is floating off the roof leg supports.

(ii) Measure seal gaps around the entire circumference of the tank in each place where a 0.32-cm diameter uniform probe passes freely (without forcing or binding against seal) between the seal and the wall of the storage vessel and measure the circumferential distance of each such location.

(iii) The total surface area of each gap described in paragraph (b)(2)(ii) of this section shall be determined by using probes of various widths to measure accurately the actual distance from the tank wall to the seal and multiplying each such width by its respective circumferential distance.

(3) Add the gap surface area of each gap location for the primary seal and the secondary seal individually and divide the sum for each seal by the nominal diameter of the tank and compare each ratio to the respective standards in paragraph (b)(4) of this section.

(4) Make necessary repairs or empty the storage vessel within 45 days of identification in any inspection for seals not meeting the requirements listed in (b)(4) (i) and (ii) of this section:

(i) The accumulated area of gaps between the tank wall and the mechanical shoe or liquid-mounted primary seal shall not exceed 212 cm2 per meter of tank diameter, and the width of any portion of any gap shall not exceed 3.81 cm.

(A) One end of the mechanical shoe is to extend into the stored liquid, and the other end is to extend a minimum vertical distance of 61 cm above the stored liquid surface.

(B) There are to be no holes, tears, or other openings in the shoe, seal fabric, or seal envelope.

(ii) The secondary seal is to meet the following requirements:

(A) The secondary seal is to be installed above the primary seal so that it completely covers the space between the roof edge and the tank wall except as provided in paragraph (b)(2)(iii) of this section.

(B) The accumulated area of gaps between the tank wall and the secondary seal shall not exceed 21.2 cm2 per meter of tank diameter, and the width of any portion of any gap shall not exceed 1.27 cm.

(C) There are to be no holes, tears, or other openings in the seal or seal fabric.

(iii) If a failure that is detected during inspections required in paragraph (b)(1) of § 60.113b(b) cannot be repaired within 45 days and if the vessel cannot be emptied within 45 days, a 30-day extension may be requested from the Administrator in the inspection report required in § 60.115b(b)(4). Such extension request must include a demonstration of unavailability of alternate storage capacity and a specification of a schedule that will assure that the control equipment will be repaired or the vessel will be emptied as soon as possible.

(5) Notify the Administrator 30 days in advance of any gap measurements required by paragraph (b)(1) of this section to afford the Administrator the opportunity to have an observer present.

(6) Visually inspect the external floating roof, the primary seal, secondary seal, and fittings each time the vessel is emptied and degassed.

(i) If the external floating roof has defects, the primary seal has holes, tears, or other openings in the seal or the seal fabric, or the secondary seal has holes, tears, or other openings in the seal or the seal fabric, the owner or operator shall repair the items as necessary so that none of the conditions specified in this paragraph exist before filling or refilling the storage vessel with VOL.

(ii) For all the inspections required by paragraph (b)(6) of this section, the owner or operator shall notify the Administrator in writing at least 30 days prior to the filling or refilling of each storage vessel to afford the Administrator the opportunity to inspect the storage vessel prior to refilling. If the inspection required by paragraph (b)(6) of this section is not planned and the owner or operator could not have known about the inspection 30 days in advance of refilling the tank, the owner or operator shall notify the Administrator 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 that it is received by the Administrator at least 7 days prior to the refilling.

60.115b Reporting and recordkeeping requirements.

The owner or operator of each storage vessel as specified in § 60.112b(a) shall keep records and furnish reports as required by paragraphs (a), (b), or (c) of this section depending upon the control equipment installed to meet the requirements of § 60.112b.

The owner or operator shall keep copies of all reports and records required by this section, except for the record required by (c)(1), for at least 2 years. The record required by (c)(1) will be kept for the life of the control equipment.

(a) After installing control equipment in accordance with § 60.112b(a)(1) (fixed roof and internal floating roof), the owner or operator shall meet the following requirements.

(1) Furnish the Administrator with a report that describes the control equipment and certifies that the control equipment meets the specifications of § 60.112b(a)(1) and § 60.113b(a)(1). This report shall be an attachment to the notification required by § 60.7(a)(3).

(2) Keep a record of each inspection performed as required by § 60.113b (a)(1), (a)(2), (a)(3), and (a)(4). Each record shall identify the storage vessel on which the inspection was performed and shall contain the date the vessel was inspected and the observed condition of each component of the control equipment (seals, internal floating roof, and fittings).

(3) If any of the conditions described in § 60.113b(a)(2) are detected during the annual visual inspection required by § 60.113b(a)(2), a report shall be furnished to the Administrator within 30 days of the inspection. Each report shall identify the storage vessel, the nature of the defects, and the date the storage vessel was emptied or the nature of and date the repair was made.

(4) After each inspection required by § 60.113b(a)(3) that finds holes or tears in the seal or seal fabric, or defects in the internal floating roof, or other control equipment defects listed in § 60.113b(a)(3)(ii), a report shall be furnished to the Administrator within 30 days of the inspection. The report shall identify the storage vessel and the reason it did not meet the specifications of § 61.112b(a)(1) or § 60.113b(a)(3) and list each repair made.

(b) After installing control equipment in accordance with § 61.112b(a)(2) (external floating roof), the owner or operator shall meet the following requirements.

(1) Furnish the Administrator with a report that describes the control equipment and certifies that the control equipment meets the specifications of § 60.112b(a)(2) and § 60.113b(b)(2), (b)(3), and (b)(4). This report shall be an attachment to the notification required by § 60.7(a)(3).

(2) Within 60 days of performing the seal gap measurements required by § 60.113b(b)(1), furnish the Administrator with a report that contains:

(i) The date of measurement.

(ii) The raw data obtained in the measurement.

(iii) The calculations described in § 60.113b (b)(2) and (b)(3).

(3) Keep a record of each gap measurement performed as required by § 60.113b(b). Each record shall identify the storage vessel in which the measurement was performed and shall contain:

(i) The date of measurement.

(ii) The raw data obtained in the measurement.

(iii) The calculations described in § 60.113b (b)(2) and (b)(3).

(4) After each seal gap measurement that detects gaps exceeding the limitations specified by § 60.113b(b)(4), submit a report to the Administrator within 30 days of the inspection. The report will identify the vessel and contain the information specified in paragraph (b)(2) of this section and the date the vessel was emptied or the repairs made and date of repair.

60.116b Monitoring of operations

(a) The owner or operator shall keep copies of all records required by this section, except for the record required by paragraph (b) of this section, for at least 2 years. The record required by paragraph (b) of this section will be kept for the life of the source.
(b) The owner or operator of each storage vessel as specified in § 60.110b(a) shall keep readily accessible records showing the dimension of the storage vessel and an analysis showing the capacity of the storage vessel.
(c) Except as provided in paragraphs (f) and (g) of this section, the owner or operator of each storage vessel either with a design capacity greater than or equal to 151 m3 storing a liquid with a maximum true vapor pressure greater than or equal to 3.5 kPa or with a design capacity greater than or equal to 75 m3 but less than 151 m3 storing a liquid with a maximum true vapor pressure greater than or equal to 15.0 kPa shall maintain a record of the VOL stored, the period of storage, and the maximum true vapor pressure of that VOL during the respective storage period.
(d) Except as provided in paragraph (g) of this section, the owner or operator of each storage vessel either with a design capacity greater than or equal to 151 m3 storing a liquid with a maximum true vapor pressure that is normally less than 5.2 kPa or with a design capacity greater than or equal to 75 m3 but less than 151 m3 storing a liquid with a maximum true vapor pressure that is normally less than 27.6 kPa shall notify the Administrator within 30 days when the maximum true vapor pressure of the liquid exceeds the respective maximum true vapor vapor pressure values for each volume range.
(e) Available data on the storage temperature may be used to determine the maximum true vapor pressure as determined below.

(1) For vessels operated above or below ambient temperatures, the maximum true vapor pressure is calculated 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.
(2) For crude oil or refined petroleum products the vapor pressure may be obtained by the following:

(i) Available data on the Reid vapor pressure and the maximum expected storage temperature based on the highest expected calendar-month average temperature of the stored product may be used to determine the maximum true vapor pressure from nomographs contained in API Bulletin 2517 (incorporated by reference—see § 60.17), unless the Administrator specifically requests that the liquid be sampled, the actual storage temperature determined, and the Reid vapor pressure determined from the sample(s).
(ii) The true vapor pressure of each type of crude oil with a Reid vapor pressure less than 13.8 kPa or with physical properties that preclude determination by the recommended method is to be determined from available data and recorded if the estimated maximum true vapor pressure is greater than 3.5 kPa.

(3) For other liquids, the vapor pressure:

(i) May be obtained from standard reference texts, or
(ii) Determined by ASTM D2879-83, 96, or 97 (incorporated by reference—see § 60.17); or
(iii) Measured by an appropriate method approved by the Administrator; or
(iv) Calculated by an appropriate method approved by the Administrator.

(f) The owner or operator of each vessel storing a waste mixture of indeterminate or variable composition shall be subject to the following requirements.

(1) Prior to the initial filling of the vessel, the highest maximum true vapor pressure for the range of anticipated liquid compositions to be stored will be determined using the methods described in paragraph (e) of this section.

(2) For vessels in which the vapor pressure of the anticipated liquid composition is above the cutoff for monitoring but below the cutoff for controls as defined in § 60.112b(a), an initial physical test of the vapor pressure is required; and a physical test at least once every 6 months thereafter is required as determined by the following methods:

(i) ASTM D2879-83, 96, or 97 (incorporated by reference—see § 60.17); or

(ii) ASTM D323-82 or 94 (incorporated by reference—see § 60.17); or

(iii) As measured by an appropriate method as approved by the Administrator.

(g) The owner or operator of each vessel equipped with a closed vent system and control device meeting the specification of § 60.112b or with emissions reductions equipment as specified in 40 CFR 65.42(b)(4), (b)(5), (b)(6), or (c) is exempt from the requirements of paragraphs (c) and (d) of this section.

The following conditions are listed on the permit to ensure compliance.

- The tank shall be equipped with a floating roof consisting of a 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 Rules 2201 and 4623, 5.3.1 and 40 CFR 60.112b(a)(2) & (i)]
- 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 40 CFR 60.112b(a)(2)(iii)]
- {2738} Primary seal (lower seal) shall be either a mechanical shoe seal or a liquid-mounted seal. [40 CFR 60.112b(a)(2)(i) and 60.112b(a)(2)(i)(A)]
- Accumulated area of gaps between the tank wall and the mechanical shoe or liquid-mounted primary seal shall not exceed 212 sq cm per meter of tank diameter, and the width of any gap shall not exceed 3.81 cm. [40 CFR 60.113b(b)(4)(i)]
- Accumulated area of gaps between the tank wall and the secondary seal shall not exceed 21.2 sq cm per meter of tank diameter, and the width of any portion of any gap shall not exceed 1.27 cm (1/2 inch). [40 CFR 60.113b(b)(4)(ii)(B)]
- {2741} 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)]
- {2742} Secondary seal shall completely cover the annular space between the external floating roof and the wall of the storage vessel in a continuous fashion. [40 CFR 60.112b(a)(2)(i)(B)]
- {2749} 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 40 CFR 60.112b(a)(2)(ii)]]

- {2750} 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)]
- 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 and 40 CFR 60.113b(b)(1)(i) & (ii)]
- {2752} Operator shall also perform gap measurements on primary seals during hydrostatic testing of the vessel. [40 CFR 60.113b(b)(1)(i)]
- {2753} 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. [40 CFR 60.113b(b)(1)(iii)]
- 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, 6.1.3.2 and 40 CFR 60.113b(b)(6)]
- {2755} 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)]
- {2756} 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. [40 CFR 60.113b(b)(5)]
- {2757} 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)]
- {2758} 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. [40 CFR 60.113b(b)(6)(ii)]
- {2759} 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. [40 CFR 60.113b(b)(6)(ii)]
- {2760} 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. [40 CFR 60.115b(b)(3)]

- {2761} 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. [40 CFR 60.115b(b)(2)]
- An operator 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 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) Leak-free status of the tank and floating roof deck fittings. Records of the leak-free 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 and 40CFR 60.115b(b)(4)]
- {2763} 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. [40 CFR 60.113b(b)(4)]
- {2630} 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)]
- {2624} 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)]
- {2626} 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)]
- {2627} 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)]
- {2623} 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)]
- {2764} 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. [40 CFR 60.116b(f)]

APPENDIX F

San Joaquin Valley Air Pollution Control District
Risk Management Review

To:	Steve Roeder – Permit Services
From:	Ester Davila – Technical Services
Date:	October 3, 2012
Facility Name:	Kern Oil & Refining Company
Location:	7724 E. Panama Lane, Bakersfield
Application #(s):	S-37-148-0
Project #:	S-1123575

A. RMR SUMMARY

RMR Summary			
Categories	**Crude Oil Storage Tank (Unit 148-0)**	**Project Totals**	**Facility Totals**
Prioritization Score	0.03	0.03	>1.0
Acute Hazard Index	0.00	0.00	0.82
Chronic Hazard Index	0.00	0.00	0.26
Maximum Individual Cancer Risk	**2.26E-08**	2.26E-08	*9.83E-06**
T-BACT Required?	**No**		
Special Permit Conditions?	**No**		

**The Maximum Individual Cancer Risk has almost reached its facilitywide total limit of 9.99E-06.*

Proposed Permit Conditions

To ensure that human health risks will not exceed District allowable levels; the following permit conditions must be included for:

Unit # 148-0

1. No special conditions are required.

B. RMR REPORT

I. Project Description

Technical Services received a request on September 27, 2012, to perform a Risk Management Review for the installation of a new 50,000 bbl floating roof organic liquid storage tank, S-37-148-0. Public Notice was also triggered for VOC; however there are no State or Federal Ambient Air Quality Standards for VOC, consequently an AAQA was not required.

II. Analysis

Technical Services performed a prioritization using the District's HEARTs database. Since the facilitywide total prioritization scores were greater than one, a refined health risk assessment was required and performed. Toxic emissions were calculated using toxic fugitive emission factors from oilfield equipment. AERMOD was used, with area source parameters outlined below, and the 5-year concatenated meteorological data from Bakersfield to determine maximum dispersion factors at the nearest residential and business receptors. These dispersion factors were input into the HARP model to calculate the chronic and acute hazard indices and the carcinogenic risk for the project.

The following parameters were used for the review:

Analysis Parameters* Unit 148-0			
Source Type	Area	**Closest Receptor (m)**	270
Release Height (m)	15	**Closest Receptor Type**	Business
Size of "x" Width (m)	27	**Project Location Type**	Rural
Size of "y" Width (m)	27		

III. Conclusion

The acute and chronic indices are below 1.0; and the maximum individual cancer risk associated with the project is **2.26E-08**, which is less than the 1 in a million threshold. In accordance with the District's Risk Management Policy, the project is approved **without** Toxic Best Available Control Technology (T-BACT).

These conclusions are based on the data provided by the applicant and the project engineer. Therefore, this analysis is valid only as long as the proposed data and parameters do not change.

APPENDIX G

Draft ATC

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: S-37-148-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: KERN OIL & REFINING CO.
MAILING ADDRESS: 7724 E PANAMA LANE
BAKERSFIELD, CA 93307-9210

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

EQUIPMENT DESCRIPTION:
54,000 BBL EXTERNAL FLOATING ROOF ORGANIC LIQUID STORAGE TANK WITH EITHER A DUAL WIPER SEAL WITH DRIP CURTAIN OR PRIMARY METAL SHOE SEAL WITH SECONDARY WIPER SEAL

CONDITIONS

1. This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District NSR Rule] Federally Enforceable Through Title V Permit
2. Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit
4. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
5. Emissions from the components serving the tank shall not exceed 1.9 lb-VOC/day. [District Rule 2201] Federally Enforceable Through Title V Permit
6. Permittee shall maintain an accurate component count and resultant emissions according to California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities, Table IV-2a, 1995 EPA Protocol, Refinery, using screening value ranges emission factors. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director APCO

DRAFT

DAVID WARNER, Director of Permit Services
S-37-148-0 : Nov 26 2012 2:12PM -- ROEDERB : Joint Inspection Required with ROEDERB

7. Upon initial start-up, the operator shall furnish the APCO with a report describing the control equipment and certifying the control equipment meets the specifications of 40CFR 60.112b(a)(2) and 60.113b(b)(2), (b)(3), and (b)(4). [40CFR 60.115b(b)(1)] Federally Enforceable Through Title V Permit

8. The True Vapor Pressure (TVP) of the organic liquid stored shall be less than 11 psia. [District Rules 2201 and 4623 and 40 CFR 60.110b(b)] Federally Enforceable Through Title V Permit

9. Organic liquid throughput shall not exceed 25,000 bbl/day based on a monthly average. [District Rule 2201] Federally Enforceable Through Title V Permit

10. Maximum annual organic liquid throughput shall not exceed 3,125,860 bbl/year. [District Rule 2201] Federally Enforceable Through Title V Permit

11. This tank shall be equipped with a floating roof consisting of a 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 Rules 2201 and 4623, 5.3.1 and 40 CFR 60.112b(a)(2) & (i)] Federally Enforceable Through Title V Permit

12. 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

13. {2738} 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

14. This tank shall be maintained in a leak-free condition, except for the primary and secondary seals, roof deck fittings and floating roof automatic bleeder vents, and as allowed by Section 5.2 and applicable provisions of Table 3 through Table 5, and Section 5.7.5.4. [District Rule 4623, 5.1.3] Federally Enforceable Through Title V Permit

15. 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, except for primary and secondary seals, floating roof deck fittings, and floating roof automatic bleeder vents is a violation of this permit and Rule 4623 and shall be reported as a deviation. [District Rule 4623] Federally Enforceable Through Title V Permit

16. Accumulated area of gaps between the tank wall and the mechanical shoe or liquid-mounted primary seal shall not exceed 212 sq cm per meter of tank diameter, and the width of any gap shall not exceed 3.81 cm. [40CFR 60.113b(b)(4)(i)] Federally Enforceable Through Title V Permit

17. Accumulated area of gaps between the tank wall and the secondary seal shall not exceed 21.2 sq cm per meter of tank diameter, and the width of any portion of any gap shall not exceed 1.27 cm (1/2 inch). [40 CFR 60.112b(b)(4)(ii)(C)] Federally Enforceable Through Title V Permit

18. {2656} 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

19. {2657} 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

20. {2658} 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

21. {2659} 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

22. {2661} 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

CONDITIONS CONTINUE ON NEXT PAGE

23. {2662} 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

24. {2663} 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

25. {2741} 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

26. {2665} 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

27. {2666} 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

28. {2742} 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

29. {2687} 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

30. 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

31. 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

32. {2749} 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

33. {2750} 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

34. Each emergency roof drain shall be provided with a slotted membrane fabric cover that covers at least 90 percent of the area of the opening. The fabric cover must be impermeable if the liquid is drained into the contents of the tanks. [District Rule 4623, 5.5.2.2.5] Federally Enforceable Through Title V Permit

35. 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

36. 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

37. 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

38. 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, 5.5.2.3.3] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

39. {2699} 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

40. Operator 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, 6.1.2] Federally Enforceable Through Title V Permit

41. Operator shall inspect all floating tanks within 60 days of initial startup and at least once every 12 months to determine compliance with the requirements of this rule. 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 and 40 CFR 60.113b(b)(1)(i) & (ii)] Federally Enforceable Through Title V Permit

42. Operator shall inspect the primary and secondary seals for compliance with the requirements of this rule every time a tank is emptied or degassed. Actual gap measurements shall be performed when the liquid level is static but not more than 48 hours after the tank roof is re-floated. [District Rule 4623, 6.1.3.2 and 40 CFR 60.113b(b)(6)] Federally Enforceable Through Title V Permit

43. {2752} 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

44. {2753} 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

45. {2755} 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

46. An operator 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 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) Leak-free status of the tank and floating roof deck fittings. Records of the leak-free 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 and 40CFR 60.115b(b)(4)] Federally Enforceable Through Title V Permit

47. {2756} 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

48. {2757} 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

CONDITIONS CONTINUE ON NEXT PAGE

49. {2758} 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

50. {2759} 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

51. {2760} 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

52. {2761} 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

53. {2763} 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

54. {2630} 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

55. {2624} 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

56. {2626} 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

57. {2627} 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

58. {2623} 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

59. {2764} 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

60. Permittee shall determine the true vapor pressure (TVP) of the organic liquid, using methods specified for maximum true vapor pressure in this permit, upon initial filling, and whenever there is a change in the source or type of organic liquid stored in this tank. [District Rule 2201] Federally Enforceable Through Title V Permit

61. {2592} 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, 9.3.2] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

62. The API gravity of crude oil or petroleum distillate shall be determined by using ASTM Method D 287-92 (2000) 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 4057-95 "Standard Practices for Manual Sampling of Petroleum and Petroleum Products". [District Rule 4623, 6.4.2] Federally Enforceable Through Title V Permit

63. The TVP of any organic liquid shall be determined by measuring the Reid Vapor Pressure (RVP) using ASTM D 323-94 (Test Method for Vapor Pressure for Petroleum Products), 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 procedures in Appendix B. Appendix B is an excerpt from the oil and gas section of "ARB Technical Guidance Document to the Criteria and Guidelines Regulation for AB 2588", dated August 1989. As an alternative to using ASTM D 323-94, 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 US EPA. [District Rule 4623, 6.4.3] Federally Enforceable Through Title V Permit

64. 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 US EPA, shall be used to determine the TVP of crude oil with an API gravity of 26 degrees or less, or for any API gravity that is specified in this test method. [District Rule 4623, 6.4.4] Federally Enforceable Through Title V Permit

65. Operator shall maintain monthly and annual records of the tank's throughput. [District Rule 2201] Federally Enforceable Through Title V Permit

66. All records shall be retained for a period of at least five years and shall be made readily available for District inspection upon request. [District Rules 4623 and 1070] Federally Enforceable Through Title V Permit

67. Operator of each storage vessel with a design capacity greater than or equal to 151 cu m storing a liquid with a maximum true vapor pressure that is normally less than 0.75 psia shall notify the APCO within 30 days when the maximum true vapor pressure of the liquid exceeds 0.75 psia. [40CFR 60.116b(d)] Federally Enforceable Through Title V Permit

68. {2636} This unit commenced construction, modification, or reconstruction after July 23, 1984. Therefore, the requirements of 40 CFR 60 Subpart K and Ka do not apply to this source. A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

69. Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits in the amount of 2,077 lb/quarter. These amounts include the applicable offset ratio of 1.5:1, as specified in Rule 2201 Section 4.8 (as amended 4/21/11) for the ERC specified below. [District Rule 2201] Federally Enforceable Through Title V Permit

70. ERC Certificate Number S-3944-1 (or a certificate split from this certificate) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit