



JUN 09 2014

Mr. Kawika Tupou  
Shell Pipeline Company LP  
20945 S. Wilmington Ave.  
Carson, CA 90810

**Re: Proposed Authority to Construct/Certificate of Conformity (Minor Mod)  
District Facility # S-77  
Project # 1141686**

Dear Mr. Tupou:

Enclosed for your review is the District's analysis of an application for Authorities to Construct for the facility identified above. You requested that Certificates of Conformity with the procedural requirements of 40 CFR Part 70 be issued with this project. Shell Pipeline Company LP has requested Authority to Construct (ATC) permits to increase the true vapor pressure (TVP) limit for floating roof tanks S-77-9 and '14.

After addressing all comments made during the 45-day EPA comment period, the District intends to issue the Authorities to Construct with Certificates of Conformity. Prior to operating with modifications authorized by the Authorities 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.

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,

Arnaud Marjollet  
Director of Permit Services

Enclosures

cc: Gerardo C. Rios, EPA (w/enclosure) via email

Seyed Sadredin  
Executive Director/Air Pollution Control Officer

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#### **IV. Process Description**

The Carneras Pump Station receives crude oil from other pumping stations located in the area. The tanks provide storage capacity to handle normal pipeline volume and pressure surges during normal and upset conditions.

#### **V. Equipment Listing**

Pre-Project Equipment Description (see PTOs in Appendix A):

S-77-9-7: 55,000 BBL RIVETED INTERNAL FLOATING ROOF STORAGE TANK #55GL5 WITH METALLIC SHOE PRIMARY SEAL AND SECONDARY WIPER SEAL

S-77-14-7: 126,000 BBL WELDED EXTERNAL FLOATING ROOF TANK #126GL6 WITH METALLIC SHOE PRIMARY SEAL AND SECONDARY WIPER SEAL

Proposed ATCs:

S-77-9-8: MODIFICATION OF 55,000 BBL RIVETED INTERNAL FLOATING ROOF STORAGE TANK #55GL5 WITH METALLIC SHOE PRIMARY SEAL AND SECONDARY WIPER SEAL: INCREASE MAXIMUM TVP LIMIT TO 11.0 PSIA

S-77-14-8: MODIFICATION OF 126,000 BBL WELDED EXTERNAL FLOATING ROOF TANK #126GL6 WITH METALLIC SHOE PRIMARY SEAL AND SECONDARY WIPER SEAL: INCREASE MAXIMUM TVP TO 11.0 PSIA

Post Project Equipment Description:

S-77-9-8: 55,000 BBL RIVETED INTERNAL FLOATING ROOF STORAGE TANK #55GL5 WITH METALLIC SHOE PRIMARY SEAL AND SECONDARY WIPER SEAL

S-77-14-8: 126,000 BBL WELDED EXTERNAL FLOATING ROOF TANK #126GL6 WITH METALLIC SHOE PRIMARY SEAL AND SECONDARY WIPER SEAL

#### **VI. Emission Control Technology Evaluation**

The external floating roof tanks are fitted with mechanical shoe primary seals and secondary wiper seals to minimize VOC emissions due to evaporation by reducing the air space above the surface of the stored organic liquid.

#### **VII. General Calculations**

##### **A. Assumptions**

- The equipment's operating schedule is 24 hours/day and 365 days/year.
- Volatile Organic Compounds (VOCs) are the only pollutants emitted from the internal floating roof tank.

##### **Pre-Project**

Tanks S-77-9 and '14 are in an SLC plan with the following requirements:

Shell Pipeline Company LP, 1141686, S-77

Total throughput of organic liquid with TVP greater than 5.9 psia and less than or equal to 9.2 psia shall not exceed 190,000 bbl/day nor 85,000 bbl/day on a monthly average basis. [District Rule 2201] Y

Total throughput of organic liquid with TVP less than or equal to 5.9 psia shall not exceed 360,000 bbl/day nor 180,000 bbl/day on a monthly average basis. [District Rule 2201] Y

Combined total throughput of permits S-77-9, '-11, and '-14 shall not exceed 550,000 bbl/day nor 265,000 bbl/day on a monthly average basis. [District Rule 2201] Y

VOC emission rate from permits S-77-9, '-11, and '-14 shall not exceed 227.1 lb/day. [District Rule 2201] Y

VOC emission rate from permits S-77-9, '-11, and '-14 shall not exceed 41,913 lb/yr. [District Rule 2201] Y

These operating scenarios are shown in the below tables:

<b>Pre-Project Method of Operation</b>		
Tank	TVP (psia)	Throughput (bbl/day)
S-77-9	5.9	360,000
S-77-14		180,000 on a monthly average basis
S-77-9	9.2	190,000
S-77-14		85,000 on a monthly average basis

- Daily emissions are calculated based on the highest monthly emissions divided by the days in that month and are based on annual turnovers calculated using maximum daily throughput (bbl/day).
- Annual emissions are calculated based on annual turnovers calculated using monthly average throughput (bbl/day).

S-77-9-7:

The true vapor pressure of liquid stored shall not exceed 9.2 psia. [District Rule 2201]

VOC emission rate shall not exceed 152.8 lb/day. [District Rule 2201] Y

S-77-14-7:

The true vapor pressure of liquid stored shall not exceed 9.2 psia. [District Rule 2201]

VOC emission rate shall not exceed 129.9 lb/day. [District Rule 2201] Y

**Post-Project**

Tanks S-77-9 and '14 are in an SLC plan with the following requirements:

Shell Pipeline Company LP, 1141686, S-77

Total throughput of organic liquid with TVP greater than 5.9 psia and less than or equal to 9.2 11.0 psia shall not exceed 190,000 bbl/day nor 85,000 bbl/day on a monthly average basis. [District Rule 2201] Y

Total throughput of organic liquid with TVP less than or equal to 5.9 psia shall not exceed 360,000 bbl/day nor 180,000 bbl/day on a monthly average basis. [District Rule 2201] Y

Combined total throughput of permits S-77-9, '-11, and '-14 shall not exceed 550,000 bbl/day nor 265,000 bbl/day on a monthly average basis. [District Rule 2201] Y

VOC emission rate from permits S-77-9, '-11, and '-14 shall not exceed 227.1 lb/day. [District Rule 2201] Y

VOC emission rate from permits S-77-9, '-11, and '-14 shall not exceed 41,913 lb/yr. [District Rule 2201] Y

These operating scenarios are shown in the below tables:

Post-Project Method of Operation		
Tank	TVP (psia)	Throughput (bbl/day)
S-77-9	5.9	360,000
S-77-14		180,000 on a monthly average basis
S-77-9	11.0	190,000
S-77-14		85,000 on a monthly average basis

- Daily emissions are calculated based on the highest monthly emissions divided by the days in that month and are based on annual turnovers calculated using maximum daily throughput (bbl/day).
- Annual emissions are calculated based on annual turnovers calculated using monthly average throughput (bbl/day).

S-77-9-8:

The true vapor pressure of liquid stored shall not exceed 11.0 psia. [District Rule 2201]

VOC emission rate shall not exceed 152.8 lb/day. [District Rule 2201] Y

S-77-14-8:

The true vapor pressure of liquid stored shall not exceed 11.0 psia. [District Rule 2201]

VOC emission rate shall not exceed 129.9 lb/day. [District Rule 2201] Y

Pre and post-project, the subject permits' DELs and annual emissions are greatest from storing oil with a TVP of 5.9 psia and a throughput of 360,000 bbl/day; therefore, the DELs and SLC emissions are unchanged with this project.

**B. Emission Factors**

Annual pre-project and post-project potential VOC emissions from the external floating roof organic liquid storage tanks are calculated using the U.S. Environmental Protection Agency Tanks 4 computer program.

**C. Calculations**

**1. Pre-Project Potential to Emit (PE1)**

<b>S-77-9 Pre Project Potential to Emit (PE1)</b>		
Operating Mode	Daily Emissions (lb/day)*	Annual Emissions (lb/year)*
190,000 bbl/day @ 9.2 psia TVP	84.3	NA
360,000 bbl/day @ 5.9 psia TVP	152.8**	NA
85,000 bbl/day (monthly ave) @ 9.2 psia TVP	NA	16,588
180,000 bbl/day (monthly ave) @ 5.9 psia TVP	NA	28,626

\*from project S1084202

\*\*current DEL

<b>S-77-14 Pre Project Potential to Emit (PE1)</b>		
Operating Mode	Daily Emissions (lb/day)*	Annual Emissions (lb/year)*
190,000 bbl/day @ 9.2 psia TVP	74.3	NA
360,000 bbl/day @ 5.9 psia TVP	129.9**	NA
85,000 bbl/day (monthly ave) @ 9.2 psia TVP	NA	13,287
180,000 bbl/day (monthly ave) @ 5.9 psia TVP	NA	23,984

\*from project S1084202

\*\*current DEL

**2. Post Project Potential to Emit (PE2)**

<b>S-77-9 Post Project Potential to Emit (PE2)</b>		
Operating Mode	Daily Emissions (lb/day)*	Annual Emissions (lb/year)*
190,000 bbl/day @ 11.0 psia TVP	91.0**	NA
360,000 bbl/day @ 5.9 psia TVP	152.8*	NA
85,000 bbl/day (monthly ave) @ 11.0 psia TVP	NA	17,637**
180,000 bbl/day (monthly ave) @ 5.9 psia TVP	NA	28,626

\*DEL

\*\*see calculations in Appendix B

<b>S-77-14</b>		
<b>Post Project Potential to Emit (PE2)</b>		
Operating Mode	Daily Emissions (lb/day)*	Annual Emissions (lb/year)*
190,000 bbl/day @ 11.0 psia TVP	76.8**	NA
360,000 bbl/day @ 5.9 psia TVP	129.9*	NA
85,000 bbl/day (monthly ave) @ 11.0 psia TVP	NA	14,316**
180,000 bbl/day (monthly ave) @ 5.9 psia TVP	NA	23,984

\*DEL

\*\*see calculations in Appendix B

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

Pursuant to District Rule 2201, the SSPE 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.

<b>Pre-Project Stationary Source Potential to Emit [SSPE1] (lb/year)</b>					
Permit Unit	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	CO	VOC
S-77-1 (PTO PAS emissions)	3000	86	228	2520	165
S-77-9	0	0	0	0	41,913
S-77-11	0	0	0	0	
S-77-14	0	0	0	0	
S-77-13 (PTO PAS emissions)	1434	35	10	126	24
Pre-Project SSPE (SSPE <sub>1total</sub> )	4434	121	238	2646	42,102

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

Pursuant to District Rule 2201, 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.

<b>Post-Project Stationary Source Potential to Emit [SSPE2] (lb/year)</b>					
Permit Unit	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	CO	VOC
S-77-1 (PTO PAS emissions)	3000	86	228	2520	165
S-77-9	0	0	0	0	41,913
S-77-11	0	0	0	0	
S-77-14	0	0	0	0	
S-77-13 (PTO PAS emissions)	1434	35	10	126	24
Post-Project SSPE (SSPE <sub>2total</sub> )	4434	121	238	2646	42,102

## 5. Major Source Determination

### Rule 2201 Major Source Determination:

Pursuant to District Rule 2201, a Major Source is a stationary source with a SSPE2 equal to or exceeding one or more of the following threshold values. For the purposes of determining major source status the following shall not be included:

- any ERCs associated with the stationary source
- Emissions from non-road IC engines (i.e. IC engines at a particular site at the facility for less than 12 months)
- Fugitive emissions, except for the specific source categories specified in 40 CFR 51.165

<b>Major Source Determination (lb/year)</b>					
	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	CO	VOC
Pre-Project SSPE (SSPE1)	4434	121	238	2646	42,102*
Post Project SSPE (SSPE2)	4434	121	238	2646	42,102*
Major Source Threshold	20,000	140,000	140,000	200,000	20,000
Major Source?	No	No	No	No	Yes

\*The facility is in a source categories specified in 40 CFR 51.165 (petroleum storage and transfer units with a total storage capacity exceeding 300,000 barrels); therefore, fugitive emissions are included in Major Source calculations

### Rule 2410 Major Source Determination:

The facility or the equipment evaluated under this project is listed as one of the categories specified in 40 CFR 52.21 (b)(1)(i). Therefore the following PSD Major Source thresholds are applicable.

<b>PSD Major Source Determination (tons/year)</b>							
	NO <sub>2</sub>	VOC	SO <sub>2</sub>	CO	PM	PM <sub>10</sub>	CO <sub>2e</sub>
Estimated Facility PE before Project Increase	2.2	21.1	0.1	1.3	0.1	0.1	<<100,000
PSD Major Source Thresholds	100	100	100	100	100	100	100,000
PSD Major Source ? (Y/N)	n	n	n	n	n	n	n

As shown above, the facility is not an existing major source for PSD for at least one pollutant. Therefore the facility is not an existing major source for PSD.

## 6. Baseline Emissions (BE)

The BE calculation (in lbs/year) is performed pollutant-by-pollutant for each unit within the project to determine the amount of offsets required.

Pursuant to District Rule 2201, BE = PE1 for:

- Any unit located at a non-Major Source,
- Any Highly-Utilized Emissions Unit, located at a Major Source,
- Any Fully-Offset Emissions Unit, located at a Major Source, or
- Any Clean Emissions Unit, located at a Major Source.

otherwise,

BE = Historic Actual Emissions (HAE), calculated pursuant to District Rule 2201.

**a. BE VOC**

Pursuant to Rule 2201, a Clean Emissions Unit is defined as an emissions unit that is “equipped with an emissions control technology with a minimum control efficiency of at least 95% or is equipped with emission control technology that meets the requirements for achieved-in-practice BACT as accepted by the APCO during the five years immediately prior to the submission of the complete application.

The subject tanks are equipped with primary metal shoe seal with secondary wiper seals, which meets the requirements for current achieved-in-practice BACT. Therefore, BE = PE1.

**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 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 <sub>x</sub>	0	50,000	N
SO <sub>x</sub>	0	80,000	N
PM <sub>10</sub>	0	30,000	N
VOC	40,172	50,000	N

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.

**Step 1**

For new emissions units, the increase in emissions is equal to the PE2 for each new unit included in this project.

For existing emissions units, the increase in emissions is calculated as follows.

The proposed replacement boiler is considered to be an existing emissions unit for Federal Major Modification calculation purposes.

Emission Increase = PAE – BAE - UBC

Where: PAE = Projected Actual Emissions, and  
BAE = Baseline Actual Emissions  
UBC = Unused baseline capacity

If there is no increase in design capacity or potential to emit, the PAE is equal to the annual emission rate at which the unit is projected to emit in any one year, selected by the operator, within 5 years after the unit resumes normal operation (10 years for existing units with an increase in design capacity or potential to emit). If detailed PAE are not provided, the PAE is equal to the PE2 for each permit unit.

The BAE is calculated based on historical emissions and operating records for any 24 month period, selected by the operator, within the previous 10 year period (5 years for electric utility steam generating units). The BAE must be adjusted to exclude any non-compliant operation emissions and emissions that are no longer allowed due to lower applicable emission limits that were in effect when this application was deemed complete.

UBC: Since this project does not result in an increase in design capacity or potential to emit, and it does not impact the ability of the emission unit to operate at a higher utilization rate, the UBC is the portion of PAE that the emission units could have accommodated during the baseline period.

Therefore, the Net Emission Increase (NEI) = PAE – BAE – UBC = 0

Since Federal Major Modification Thresholds are not surpassed with this project, this project does not constitute a Federal Major Modification and no further analysis is required.

## **9. Rule 2410 – Prevention of Significant Deterioration (PSD) Applicability Determination**

Rule 2410 applies to pollutants for which the District is in attainment or for unclassified, pollutants. The pollutants addressed in the PSD applicability determination are listed as follows:

- NO<sub>2</sub> (as a primary pollutant)
- SO<sub>2</sub> (as a primary pollutant)
- CO
- PM
- PM<sub>10</sub>
- Greenhouse gases (GHG): CO<sub>2</sub>, N<sub>2</sub>O, CH<sub>4</sub>, HFCs, PFCs, and SF<sub>6</sub>

### **I. Potential to Emit for New or Modified Emission Units vs PSD Major Source Thresholds**

As a screening tool, the project potential to emit from all new and modified units is compared to the PSD major source threshold, and if total project potential to emit

from all new and modified units is below this threshold, no further analysis will be needed.

The equipment evaluated under this project is listed as one of the categories specified in 40 CFR 52.21 (b)(1)(i). Therefore the following PSD Major Source thresholds are applicable.

<b>PSD Major Source Determination: Potential to Emit (tons/year)</b>							
	NO2	VOC	SO2	CO	PM	PM10	CO2e
Total PE from New and Modified Units	2.2	21.1	0.1	1.3	0.1	0.1	<<100,000
PSD Major Source threshold	100	100	100	100	100	100	100,000
New PSD Major Source?	n	n	n	n	n	n	n

As shown in the table above, the project potential to emit, by itself, does not exceed any of the PSD major source thresholds. Therefore Rule 2410 is not applicable and no further discussion is required.

## **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**

As discussed in Section I above, there are no new emissions units associated with this project. Therefore BACT for new units with PE > 2 lb/day purposes is not triggered.

#### **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; therefore BACT is not triggered.

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

$$AIPE = PE2 - HAPE$$

Where,

AIPE = Adjusted Increase in Permitted Emissions, (lb/day)

PE2 = Post-Project Potential to Emit, (lb/day)

HAPE = Historically Adjusted Potential to Emit, (lb/day)

$$HAPE = PE1 \times (EF2/EF1)$$

Where,

PE1 = The emissions unit's PE prior to modification or relocation, (lb/day)

EF2 = The emissions unit's permitted emission factor for the pollutant after modification or relocation. If EF2 is greater than EF1 then EF2/EF1 shall be set to 1

EF1 = The emissions unit's permitted emission factor for the pollutant before the modification or relocation

$$AIPE = PE2 - (PE1 * (EF2 / EF1))$$

The PEs and EFs for the subject permits are unchanged as a result of this project; therefore, the AIPEs = 0. Therefore BACT is not triggered.

**d. SB 288/Federal Major Modification**

As discussed in Sections VII.C.7 and VII.C.8 above, this project does not constitute an SB 288 and/or Federal Major Modification for NO<sub>x</sub> emissions. Therefore BACT is not triggered for any pollutant.

**B. Offsets**

**1. Offset Applicability**

Offset requirements shall be triggered on a pollutant by pollutant basis and shall be required if the SSPE2 equals to or exceeds the offset threshold levels in Table 4-1 of Rule 2201.

The SSPE2 is compared to the offset thresholds in the following table.

Offset Determination (lb/year)					
	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	CO	VOC
SSPE2	4434	121	238	2646	42,102
Offset Thresholds	20,000	54,750	29,200	200,000	20,000
Offsets triggered?	No	No	No	No	Yes

**2. Quantity of Offsets Required**

As seen above, the facility is an existing Major Source for VOC and the SSPE2 is greater than the offset thresholds. Therefore offset calculations will be required for this project.

The quantity of offsets in pounds per year for VOC is calculated as follows for sources with an SSPE1 greater than the offset threshold levels before implementing the project being evaluated.

Offsets Required (lb/year) =  $(\Sigma[\text{PE2} - \text{BE}] + \text{ICCE}) \times \text{DOR}$ , for all new or modified emissions units in the project,

Where,

PE2 = Post Project Potential to Emit, (lb/year)

BE = Baseline Emissions, (lb/year)

ICCE = Increase in Cargo Carrier Emissions, (lb/year)

DOR = Distance Offset Ratio, determined pursuant to Section 4.8

BE = PE1 for:

- Any unit located at a non-Major Source,
- Any Highly-Utilized Emissions Unit, located at a Major Source,
- Any Fully-Offset Emissions Unit, located at a Major Source, or
- Any Clean Emissions Unit, Located at a Major Source.

otherwise,

BE = HAE

As calculated in Section VII.C.6 above, the BE from this unit are equal to the PE1 since the unit is a Clean Emissions Unit.

Also, there is only one emissions unit associated with this project and there are no increases in cargo carrier emissions. Therefore offsets can be determined as follows:

Offsets Required (lb/year) =  $([\text{PE2} - \text{BE}] + \text{ICCE}) \times \text{DOR}$

The PE for the subject tanks is equal to their SLC limit which does not change as a result of this project.

PE2 = 41,913 lb/year

BE = 41,913 lb/year

ICCE = 0 lb/year

Offsets Required (lb/year) =  $([41,913 - 41,913] + 0) \times \text{DOR}$   
= 0 lb VOC/year

As demonstrated in the calculation above, the amount of offsets is zero. Therefore, offsets will not be required for this project.

### 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**

New Major Sources are new facilities, which are also Major Sources. Since this is not a new facility, public noticing is not required for this project for New Major Source purposes.

As demonstrated in Sections VII.C.7 and VII.C.8, this project does not constitute an SB 288 or Federal Major Modification; therefore, public noticing for SB 288 or Federal Major Modification purposes is not required.

**b. PE > 100 lb/day**

Applications which include a new emissions unit with a PE greater than 100 pounds during any one day for any pollutant will trigger public noticing requirements. There are no new emissions units associated with this project. Therefore public noticing is not required for this project for PE > 100 lb/day.

**c. Offset Threshold**

The SSPE1 and SSPE2 are compared to the offset thresholds in the following table.

<b>Offset Thresholds</b>				
<b>Pollutant</b>	<b>SSPE1 (lb/year)</b>	<b>SSPE2 (lb/year)</b>	<b>Offset Threshold</b>	<b>Public Notice Required?</b>
NO <sub>x</sub>	4434	4434	20,000 lb/year	No
SO <sub>x</sub>	121	121	54,750 lb/year	No
PM <sub>10</sub>	238	238	29,200 lb/year	No
CO	2646	2646	200,000 lb/year	No
VOC	42,102	42,102	20,000 lb/year	No

As detailed above, there were no thresholds surpassed with this project; therefore public noticing is not required for offset purposes.

**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. According to District policy, the SSIPE = SSPE2 – SSPE1. The SSIPE is compared to the SSIPE Public Notice thresholds in the following table.

<b>SSIPE Public Notice Thresholds</b>
---------------------------------------

Pollutant	SSPE1 (lb/year)	SSPE2 (lb/year)	SSIPE (lb/year)	SSIPE Public Notice Threshold	Public Notice Required?
NO <sub>x</sub>	4434	4434	0	20,000 lb/year	No
SO <sub>x</sub>	121	121	0	20,000 lb/year	No
PM <sub>10</sub>	238	238	0	20,000 lb/year	No
CO	2646	2646	0	20,000 lb/year	No
VOC	42,102	42,102	0	20,000 lb/year	No

As demonstrated above, the SSIPEs for all pollutants were less than 20,000 lb/year; therefore public noticing for SSIPE purposes is not required.

**2. Public Notice Action**

As discussed above, this project will not result in emissions, for any pollutant, which would subject the project to any of the noticing requirements listed above. Therefore, public notice will not be required for this project.

**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.

**Proposed Rule 2201 (DEL) Conditions:**

S-77-9-8:

Total throughput of organic liquid with TVP less than or equal to 5.9 psia shall not exceed 360,000 bbl/day nor 180,000 bbl/day on a monthly average basis. [District Rule 2201] Y

Combined total throughput of permits S-77-9, '-11, and '-14 shall not exceed 550,000 bbl/day nor 265,000 bbl/day on a monthly average basis. [District Rule 2201] Y

VOC emission rate from permits S-77-9, '-11, and '-14 shall not exceed 227.1 lb/day. [District Rule 2201] Y

VOC emission rate shall not exceed 152.8 lb/day. [District Rule 2201] Y

S-77-14-8:

Total throughput of organic liquid with TVP less than or equal to 5.9 psia shall not exceed 360,000 bbl/day nor 180,000 bbl/day on a monthly average basis. [District Rule 2201] Y

Combined total throughput of permits S-77-9, '-11, and '-14 shall not exceed 550,000 bbl/day nor 265,000 bbl/day on a monthly average basis. [District Rule 2201] Y

VOC emission rate from permits S-77-9, '-11, and '-14 shall not exceed 227.1 lb/day. [District Rule 2201] Y

VOC emission rate shall not exceed 129.9 lb/day. [District Rule 2201] Y

## **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**

No monitoring is required to demonstrate compliance with 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 condition(s) are listed on the permit to operate:

- Permittee shall maintain a record of the liquid stored, the period of storage, and the maximum true vapor pressure of that liquid during the respective storage period. [40 CFR 60.116b(c) and District Rule 2201] Y
- Permittee shall maintain records of maximum daily throughput and monthly average daily throughput. [District Rule 2201] Y
- 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 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] Y
- All records required to be maintained by this permit shall be maintained for a period of at least five years and shall be made readily available for District inspection upon request. [District Rule 4623, 6.3 and 40 CFR 60.116b(a)] Y
- The owner or operator of each storage vessel shall keep readily accessible records showing the dimension of the storage vessel and an analysis showing the capacity of the storage vessel. Such records shall be retained for the life of the source. [40 CFR 60.116b(b)] Y
- Permittee shall maintain records of daily throughput. [District Rule 2520, 9.4.2] Y

### **4. Reporting**

No reporting is required to demonstrate compliance with Rule 2201.

This facility is subject to this Rule, and has received their Title V Operating Permit. The proposed modification is a Minor Modification to the Title V Permit.

In accordance with Rule 2520, these modifications:

1. Do not violate requirements of any applicable federally enforceable local or federal requirement;
2. Do not relax monitoring, reporting, or recordkeeping requirements in the permit and are not significant changes in existing monitoring permit terms or conditions;
3. Do not require or change a case-by-case determination of an emission limitation or other standard, or a source-specific determination for temporary sources of ambient impacts, or a visibility or increment analysis;
4. Do not seek to establish or change a permit term or condition for which there is no corresponding underlying applicable requirement and that the source has assumed to avoid an applicable requirement to which the source would otherwise be subject. Such terms and conditions include:
  - a. A federally enforceable emission cap assumed to avoid classification as a modification under any provisions of Title I of the Federal Clean Air Act; and
  - b. An alternative emissions limit approved pursuant to regulations promulgated under section 112(i)(5) of the Federal Clean Air Act; and
5. Are not Title I modifications as defined in District Rule 2520 or modifications as defined in section 111 or 112 of the Federal Clean Air Act; and
6. Do not seek to consolidate overlapping applicable requirements.

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. The facility may construct/operate under the ATC upon submittal of the Title V administrative amendment/minor modification application.

#### **Rule 4001 New Source Performance Standards (NSPS)**

##### **40 CFR Part 60, Subpart Kb: Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984**

Pursuant to 40 CFR Part 60 Section 60.110b(a), *Applicability And Designation Of Affected Facility*, except as provided in paragraph (b) of this section, the affected facility to which this subpart applies is each storage vessel with a capacity greater than or equal to 75 cubic meters (m<sup>3</sup>) (equivalent to 19,813 gal) that is used to store volatile organic liquids (VOL) for which construction, reconstruction, or modification is commenced after July 23, 1984.

The tanks are currently in compliance with this rule. Therefore, as long as the units are operated in accordance with the permit requirements compliance with Rule 4001 is expected.

#### **Rule 4101 Visible Emissions**

Rule 4101 states that no air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity.

As long as the equipment is properly maintained and operated, compliance with visible emissions limits is expected under normal operating conditions.

### **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. Therefore, compliance with this rule is expected.

### **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.

As demonstrated above, there are no increases in emissions associated with this project, therefore a health risk assessment is not necessary and no further risk analysis is required.

### **Rule 4623 Storage of Organic Liquids**

The purpose of this rule is to limit volatile organic compound (VOC) emissions from the 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. The subject tanks are equipped with metallic shoe primary and wiper type secondary seals and therefore meet the requirements for external floating roof tanks storing organic liquids with a TVP of up to 11.0 psia as specified in Rule 4623. Rule 4623 requirements are currently included on the ATC as enforceable permit conditions. Continued compliance is expected.

### **California Health & Safety Code 42301.6 (School Notice)**

Pursuant to California Health and Safety Code 42301.6, since this project will not result in an increase in emissions, 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.

The District performed an Engineering Evaluation (this document) for the proposed project and determined that all project specific emission unit(s) are exempt from Best Available Control Technology (BACT) requirements. Furthermore, the District has determined that potential emission increases would have a less than significant health impact on sensitive receptors.

Issuance of permits for emissions units not subject to BACT requirements and with health impact less than significant is a matter of ensuring conformity with applicable District rules and regulations and does not require discretionary judgment or deliberation. Thus, the District concludes that this permitting action constitutes a ministerial approval. Section 21080 of the Public Resources Code exempts from the application of CEQA those projects over which a public agency exercises only ministerial approval. Therefore, the District finds that this project is exempt from the provisions of CEQA.

**IX. Recommendation**

Compliance with all applicable rules and regulations is expected. Issue ATCs S-77-9-8 and '14-8 subject to the permit conditions on the attached draft ATCs in **Appendix C**.

**X. Billing Information**

<b>Annual Permit Fees</b>			
<b>Permit Number</b>	<b>Fee Schedule</b>	<b>Fee Description</b>	<b>Annual Fee</b>
S-77-11	3020-05-G	6,300,000 gallons	\$382
S-77-14	3020-05-G	5,292,000 gallons	\$382

**APPENDIX A**  
**Current PTOS**

# San Joaquin Valley Air Pollution Control District

**PERMIT UNIT:** S-77-9-7

**EXPIRATION DATE:** 08/31/2017

**SECTION:** SW34 **TOWNSHIP:** 27S **RANGE:** 20E

**EQUIPMENT DESCRIPTION:**

55,000 BBL RIVETED INTERNAL FLOATING ROOF STORAGE TANK #55GL5 WITH METALLIC SHOE PRIMARY SEAL AND SECONDARY WIPER SEAL

## PERMIT UNIT REQUIREMENTS

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1. The true vapor pressure of liquid stored shall not exceed 9.2 psia. [District Rule 2201] Federally Enforceable Through Title V Permit
2. Total throughput of organic liquid with TVP greater than 5.9 psia and less than or equal to 9.2 psia shall not exceed 190,000 bbl/day nor 85,000 bbl/day on a monthly average basis. [District Rule 2201] Federally Enforceable Through Title V Permit
3. Total throughput of organic liquid with TVP less than or equal to 5.9 psia shall not exceed 360,000 bbl/day nor 180,000 bbl/day on a monthly average basis. [District Rule 2201] Federally Enforceable Through Title V Permit
4. Combined total throughput of permits S-77-9, '-11, and '-14 shall not exceed 550,000 bbl/day nor 265,000 bbl/day on a monthly average basis. [District Rule 2201] Federally Enforceable Through Title V Permit
5. VOC emission rate from permits S-77-9, '-11, and '-14 shall not exceed 227.1 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit
6. VOC emission rate from permits S-77-9, '-11, and '-14 shall not exceed 41,913 lb/yr. [District Rule 2201] Federally Enforceable Through Title V Permit
7. VOC emission rate shall not exceed 152.8 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit
8. Tank shall be equipped with operational temperature indicator. [District Rule 2201] Federally Enforceable Through Title V Permit
9. Permittee shall maintain a record of the liquid stored, the period of storage, and the maximum true vapor pressure of that liquid during the respective storage period. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Permittee shall maintain records of maximum daily throughput and monthly average daily throughput. [District Rule 2201] Federally Enforceable Through Title V Permit
11. When storing organic liquids with true vapor pressure less than 0.5 psia, the requirements of Sections 5.3, 5.5 and 6.1 of District Rule 4623 (Amended May 19, 2005) shall not apply to this unit. This exemption applies to all conditions in this permit referencing Rule 4623 Sections 5.3, 5.5 or 6.1 only. [District Rule 4623, 2.0] Federally Enforceable Through Title V Permit
12. Before switching to the storage of organic liquids with true vapor pressure greater than or equal to 0.5 psia, all covers, seals, and lids shall be inspected by the facility operator to ensure compliance with the provisions of this permit. This includes all conditions containing District Rule 4623 reference. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

13. The internal floating roof shall rest or float on the liquid surface (but not necessarily in complete contact with it) inside a storage vessel that has a fixed roof. The internal roof shall be floating on the liquid surface except during initial fill and when the storage vessel is completely emptied or subsequently emptied and 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 days prior to performing the work. [District Rule 4623] Federally Enforceable Through Title V Permit
14. Gaps between the tank shell and the primary seal shall not exceed 2 1/2 inches. [District Rule 4623] Federally Enforceable Through Title V Permit
15. The cumulative length of all primary seal gaps greater than 1 1/2 inches shall not exceed 10% of the circumference of the tank. [District Rule 4623] Federally Enforceable Through Title V Permit
16. 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] Federally Enforceable Through Title V Permit
17. No continuous gap in the primary seal greater than 1/8 inch wide shall exceed 10% of the tank circumference. [District Rule 4623] Federally Enforceable Through Title V Permit
18. No gap between the tank shell and the secondary seal shall exceed 1/2 inch. [District Rule 4623] Federally Enforceable Through Title V Permit
19. 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] Federally Enforceable Through Title V Permit
20. 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 18 inches above the stored liquid surface. [District Rule 4623] Federally Enforceable Through Title V Permit
21. 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 5 inches for a length of at least 18 inches in the vertical plane above the liquid. [District Rule 4623] Federally Enforceable Through Title V Permit
22. 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] Federally Enforceable Through Title V Permit
23. The secondary seal shall allow easy insertion of probes up to 2 1/2 inches in width in order to measure gaps in the primary seal. [District Rule 4623] Federally Enforceable Through Title V Permit
24. The secondary seal shall extend from the roof to the tank shell and shall not be attached to the primary seal. [District Rule 4623] Federally Enforceable Through Title V Permit
25. 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] Federally Enforceable Through Title V Permit
26. A gas-tight condition is defined as a condition without a gas leak. A gas leak is defined as a reading in excess of 10,000 ppmv, above background, as measured by a portable hydrocarbon detection instrument in accordance with the procedures specified in EPA Test Method 21. A reading in excess of 10,000 ppmv above background is a violation of this permit and Rule 4623 and shall be reported as a deviation. [District Rule 4623] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

27. A leak-free condition is defined as a condition without a gas leak or a liquid leak. A liquid leak is defined as the dripping of organic liquid at a rate of more than 3 drops per minute. 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 liquid leak or reading in excess of 10,000 ppmv above background is a violation of this permit and Rule 4623 and shall be reported as a deviation. [District Rule 4623, 6.4] Federally Enforceable Through Title V Permit
28. Each opening in a non-contact internal floating roof, except for automatic bleeder vents (vacuum breaker vents) and rim space vents, shall provide a projection below the liquid surface. [District Rule 4623] Federally Enforceable Through Title V Permit
29. Each opening in the internal floating roof except for leg sleeves, automatic bleeder vents, rim space vents, column wells, ladder wells, sample wells, and stub drains is to be equipped with a cover or lid which is to be maintained in a closed position at all times (i.e., no visible gap) except when the device is in actual use. The cover or lid shall be equipped with a gasket. Covers on each access hatch and automatic gauge float well shall be bolted except when they are in use. [District Rule 4623] Federally Enforceable Through Title V Permit
30. 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] Federally Enforceable Through Title V Permit
31. Rim vents shall be equipped with a gasket and are to be set to open only when the internal floating roof is not floating or at the manufacturer's recommended setting. [District Rule 4623] Federally Enforceable Through Title V Permit
32. Each penetration of the internal floating roof for the purpose of sampling shall be a sample well. The well shall have a slit fabric cover that covers at least 90% of the opening. The fabric cover must be impermeable. [District Rule 4623] Federally Enforceable Through Title V Permit
33. Each penetration of the internal floating roof that allows for passage of a column supporting the fixed roof shall have a flexible fabric sleeve seal or a gasketed sliding cover. The fabric sleeve must be impermeable. [District Rule 4623] Federally Enforceable Through Title V Permit
34. The permittee shall visually inspect the internal floating roof, and its appurtenant parts, fittings, etc. and measure the gaps of the primary seal and/or secondary seal prior to filling the tank for newly constructed, repair, or rebuilt internal floating roof tanks. If holes, tears, or openings in the primary seal, the secondary seal, the seal fabric or defects in the internal floating roof or its appurtenant parts, components, fittings, etc., are found, they shall be repaired prior to filling the tank. [District Rule 4623] Federally Enforceable Through Title V Permit
35. The permittee shall visually inspect, through the manholes, roof hatches, or other openings on the fixed roof, the internal floating roof and its appurtenant parts, fittings, etc., and the primary seal and/or secondary seal at least once every 12 months after the tank is initially filled with an organic liquid. There should be no visible organic liquid on the roof, tank walls, or anywhere. Other than the gap criteria specified by this rule, no holes, tears, or other openings are allowed that would permit the escape of vapors. Any defects found are violations of this rule. [District Rule 4623] Federally Enforceable Through Title V Permit
36. The permittee shall conduct actual gap measurements of the primary seal and/or secondary seal at least once every 60 months. [District Rule 4623] Federally Enforceable Through Title V Permit
37. Permittee shall submit the reports of the floating roof tank inspections to the APCO within five calendar days after the completion of the inspection only for those tanks that failed to meet the applicable requirements of Rule 4623, Sections 5.2 through 5.5. The inspection report for tanks that have been determined to be in compliance with the requirements of Sections 5.2 through 5.5 need not be submitted to the APCO, but the inspection report shall be kept on-site and made available upon request by the APCO. The inspection report shall contain all necessary information to demonstrate compliance with the provisions of Rule 4623. [District Rule 4623] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

38. Permittee shall maintain the records of the internal 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 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] Federally Enforceable Through Title V Permit
39. The tank pressure-vacuum (PV) relief valve shall be set to within 10% of the maximum allowable working pressure of the tank. The PV relief valve shall be permanently labeled with the operating pressure settings. The PV relief valve shall be properly installed and maintained in good operating order in accordance with the manufacturer's instructions, and shall remain in leak-free condition except when the operating pressure exceeds the valve's set pressure. [District Rule 4623, 5.2] Federally Enforceable Through Title V Permit
40. Permittee shall notify District at least 7 days prior to the date when unobstructed primary and secondary seal/gap testing will occur. [District Rule 1070] Federally Enforceable Through Title V Permit
41. All records required to be maintained by this permit shall be maintained for a period of at least five years and shall be made readily available for District inspection upon request. [District Rule 4623] Federally Enforceable Through Title V Permit
42. This unit was constructed prior to 1973 and has not been modified (as defined in 40 CFR 60.14) or reconstructed (as defined in 40 CFR 60.15) since 1973. Therefore, the requirements of 40 CFR 60 are not applicable to this unit. A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
43. Permittee shall conduct true vapor pressure (TVP) testing of the organic liquid stored in this tank at least once every 24 months and/or whenever there is a change in the source or type of organic liquid stored in the tank. The TVP of any organic liquid shall be determined by measuring the Reid Vapor Pressure (RVP) using ASTM D 323 (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 of District Rule 4623. Records of TVP testing shall be maintained. [District Rule 2520, 9.3.2; 4623, 6.2.2, 6.3, 6.4] Federally Enforceable Through Title V Permit

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

# San Joaquin Valley Air Pollution Control District

**PERMIT UNIT:** S-77-14-7

**EXPIRATION DATE:** 08/31/2017

**SECTION:** SW34 **TOWNSHIP:** 27S **RANGE:** 20E

**EQUIPMENT DESCRIPTION:**

126,000 BBL WELDED EXTERNAL FLOATING ROOF TANK #126GL6 WITH METALLIC SHOE PRIMARY SEAL AND SECONDARY WIPER SEAL

## PERMIT UNIT REQUIREMENTS

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1. The true vapor pressure of liquid stored shall not exceed 9.2 psia. [District Rule 2201] Federally Enforceable Through Title V Permit
2. Total throughput of organic liquid with TVP greater than 5.9 psia and less than or equal to 9.2 psia shall not exceed 190,000 bbl/day nor 85,000 bbl/day on a monthly average basis. [District Rule 2201] Federally Enforceable Through Title V Permit
3. Total throughput of organic liquid with TVP less than or equal to 5.9 psia shall not exceed 360,000 bbl/day nor 180,000 bbl/day on a monthly average basis. [District Rule 2201] Federally Enforceable Through Title V Permit
4. Combined total throughput of permits S-77-9, '-11, and '-14 shall not exceed 550,000 bbl/day nor 265,000 bbl/day on a monthly average basis. [District Rule 2201] Federally Enforceable Through Title V Permit
5. VOC emission rate from permits S-77-9, '-11, and '-14 shall not exceed 227.1 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit
6. VOC emission rate from permits S-77-9, '-11, and '-14 shall not exceed 41,913 lb/yr. [District Rule 2201] Federally Enforceable Through Title V Permit
7. VOC emission rate shall not exceed 129.9 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit
8. Permittee shall maintain a record of the liquid stored, the period of storage, and the maximum true vapor pressure of that liquid during the respective storage period. [40 CFR 60.116b(c) and District Rule 2201] Federally Enforceable Through Title V Permit
9. Permittee shall maintain records of maximum daily throughput and monthly average daily throughput. [District Rule 2201] Federally Enforceable Through Title V Permit
10. When storing organic liquids with true vapor pressure less than 0.5 psia, the requirements of Sections 5.3, 5.5 and 6.1 of District Rule 4623 (Amended May 19, 2005) shall not apply to this unit. This exemption applies to all conditions in this permit referencing Rule 4623 Sections 5.3, 5.5 or 6.1 only. [District Rule 4623, 2.0] Federally Enforceable Through Title V Permit
11. When storing organic liquids with true vapor pressure less than 0.75 psia, the requirements of 40 CFR 60 Subpart Kb shall not apply to this unit. This exemption applies to all conditions in this permit referencing 40 CFR 60 Subpart Kb only. [40 CFR 60.112b(a)] Federally Enforceable Through Title V Permit
12. Before switching to the storage of organic liquids with true vapor pressure greater than or equal to 0.5 psia, all covers, seals, and lids shall be inspected by the facility operator to ensure compliance with the provisions of this permit. This includes all conditions containing District Rule 4623 reference. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

13. Before switching to the storage of organic liquids with true vapor pressure greater than or equal to 0.75 psia, all covers, seals, and lids shall be inspected by the facility operator to ensure compliance with the provisions of this permit. This includes all conditions containing District Rule 4623 or 40 CFR 60 Subpart Kb reference. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
14. This tank shall be equipped with a closure device between the tank shell and roof edge consisting of two seals mounted one above the other; the one below shall be referred to as the primary seal, and the one above shall be referred as the secondary seal. [District NSR Rule; District Rule 4623, 5.3.1.2 and 40 CFR 60.112b(a)(2)(i)] Federally Enforceable Through Title V Permit
15. 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)] Federally Enforceable Through Title V Permit
16. Gaps between the tank shell and the primary seal shall not exceed 1 1/2 inches. [District Rule 4623, 5.3.2.1.1 and 40 CFR 60.113b(b)(4)(i)] Federally Enforceable Through Title V Permit
17. 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 and 40 CFR 60.113b(b)(4)(i)] Federally Enforceable Through Title V Permit
18. 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 and 40 CFR 60.113b(b)(4)(i)] Federally Enforceable Through Title V Permit
19. 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 and 40 CFR 60.113b(b)(4)(i)] Federally Enforceable Through Title V Permit
20. No gap between the tank shell and the secondary seal shall exceed 1/2 inch. [District Rule 4623, 5.3.2.1.2, 6.1 and 40 CFR 60.113b(b)(4)(ii)(B)] Federally Enforceable Through Title V Permit
21. 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 and 40 CFR 60.113b(b)(4)(ii)(B)] Federally Enforceable Through Title V Permit
22. 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 and 40 CFR 60.113b(b)(4)(i)(A)] Federally Enforceable Through Title V Permit
23. 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
24. 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. Except for gaps meeting permit requirements, the primary seal shall completely cover the annular space between the edge of the floating roof and tank wall. [District Rule 4623, 5.3.2.1.5; 40 CFR 60.112b(a)(2)(i)(A), 40 CFR 60.113b(b)(4)(i)(B) and 60.113b(b)(4)(ii)(C)] Federally Enforceable Through Title V Permit
25. 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
26. The secondary seal shall extend from the roof to the tank shell and shall not be attached to the primary seal. Except for gaps meeting permit requirements, the secondary seal shall completely cover the annular space between the external floating roof and the wall of the storage vessel in a continuous fashion. [District Rule 4623, 5.3.2.1.7; 40 CFR 60.112b(a)(2)(i)(B) and 40 CFR 60.113b(b)(4)(ii)(A)] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

27. 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, 5.2 & 5.5.1] Federally Enforceable Through Title V Permit
28. A gas-tight condition is defined as a condition without a gas leak. A gas leak is defined as a reading in excess of 10,000 ppmv, above background, as measured by a portable hydrocarbon detection instrument in accordance with the procedures specified in EPA Test Method 21. A reading in excess of 10,000 ppmv above background is a violation of this permit and Rule 4623 and shall be reported as a deviation. [District Rule 4623, 3.10 and 6.4.8] Federally Enforceable Through Title V Permit
29. 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, and 40 CFR 60.112b(a)(2)(ii)] Federally Enforceable Through Title V Permit
30. 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, and 40 CFR 60.112b(a)(2)(ii)] Federally Enforceable Through Title V Permit
31. 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, and 40 CFR 60.112b(a)(2)(ii)] Federally Enforceable Through Title V Permit
32. 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 40 CFR 60.112b(a)(2)(ii)] Federally Enforceable Through Title V Permit
33. 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, and 40 CFR 60.112b(a)(2)(ii)] Federally Enforceable Through Title V Permit
34. 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
35. 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
36. 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
37. 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
38. The slotted guidepole well on a external floating roof shall be equipped with the following: a sliding cover, a well gasket, a pole sleeve, a pole wiper, and an internal float and float wiper designed to minimize the gap between the float and the well, and provided the gap shall not exceed 1/8 inch; or shall be equipped with a well gasket, a zero gap pole wiper seal and a pole sleeve that projects below the liquid surface. [District Rule 4623, 5.5.2.4.2] Federally Enforceable Through Title V Permit
39. The gap between the pole wiper and the slotted guidepole shall be added to the gaps measured to determine compliance with the secondary seal requirement, and in no case shall exceed 1/8 inch. [District Rule 4623, 5.5.2.4.3] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

40. The permittee of external floating roof tanks 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] Federally Enforceable Through Title V Permit
41. Measurements of gaps between the tank wall and the primary and secondary seal shall be performed during the hydrostatic testing of the vessel or within 60 days of the initial fill with a volatile organic liquid. [40 CFR 60.113b(b)(1)(i)] Federally Enforceable Through Title V Permit
42. If any source ceases to store volatile organic liquid for a period of 1 year or more, subsequent introduction of volatile organic liquid into the vessel shall be considered an initial fill. [40 CFR 60.113b(b)(1)(iii)] Federally Enforceable Through Title V Permit
43. The permittee shall inspect all floating roof tanks 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. Permittee shall measure seal gaps, at one or more floating roof levels when the roof is floating off the roof leg supports, 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. The inspection results shall be submitted to the APCO as specified in Section 6.3.5. [County Rule 107 (40 CFR 60.113b(b)(1)(i) & (ii); and 40 CFR 60.113b(b)(2)(i) & (ii)] Federally Enforceable Through Title V Permit
44. The permittee 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 24 hours after the tank roof is re-floated. 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 before filling or refilling the storage vessel. The owner or 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. [District Rule 4623, 6.1.3.1.2 and 40 CFR 60.113b(b)(6)] Federally Enforceable Through Title V Permit
45. Permittee shall submit the reports of the floating roof tank inspections to the APCO within five calendar days after the completion of the inspection only for those tanks that failed to meet the applicable requirements of Rule 4623, Sections 5.2 through 5.5. The inspection report for tanks that have been determined to be in compliance with the requirements of Sections 5.2 through 5.5 need not be submitted to the APCO, but the inspection report shall be kept on-site and made available upon request by the APCO. The inspection report shall contain all necessary information to demonstrate compliance with the provisions of Rule 4623. [District Rule 4623, 6.3.5 and 40 CFR 60.115b(b)] Federally Enforceable Through Title V Permit
46. 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 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] Federally Enforceable Through Title V Permit
47. All records required to be maintained by this permit shall be maintained for a period of at least five years and shall be made readily available for District inspection upon request. [District Rule 4623, 6.3 and 40 CFR 60.116b(a)] Federally Enforceable Through Title V Permit
48. Permittee shall notify District at least 30 days prior to the date when unobstructed primary and secondary seal/gap measurements will occur to afford the APCO the opportunity to have an observer present. [40 CFR 60.113b(b)(5)] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

49. Permittee shall make necessary repairs or empty the storage vessel within 45 days of identification in any inspection for seals not meeting the requirements listed in 40 CFR 60.113b(b)(4)(i) and (ii). If necessary repairs cannot be made within 45 days and if the vessel cannot be emptied within 45 days, a 30-day extension may be requested from the APCO. Such an 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. [40 CFR 60.113b(b)(4)] Federally Enforceable Through Title V Permit
50. The owner or operator of each storage vessel shall keep readily accessible records showing the dimension of the storage vessel and an analysis showing the capacity of the storage vessel. Such records shall be retained for the life of the source. [40 CFR 60.116b(b)] Federally Enforceable Through Title V Permit
51. Permittee shall maintain records of daily throughput. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
52. Permittee shall conduct true vapor pressure (TVP) testing of the organic liquid stored in this tank at least once every 24 months and/or whenever there is a change in the source or type of organic liquid stored in the tank. The TVP of any organic liquid shall be determined by measuring the Reid Vapor Pressure (RVP) using ASTM D 323 (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 of District Rule 4623. Records of TVP testing shall be maintained. [District Rule 2520, 9.3.2, 4623, 6.4.3 and 6.2] Federally Enforceable Through Title V Permit
53. Compliance with permit conditions in the Title V permit shall be deemed compliance with District Rule 4623 (amended may 19, 2005) and 40CFR60 Subpart Kb. A permit shield is granted form this requirement. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

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

**APPENDIX B**  
**Post Project Emission Calculations**

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

**Identification**  
 User Identification: S-77-9-8  
 City: Bakersfield  
 State: California  
 Company: Shell Pipeline  
 Type of Tank: Internal Floating Roof Tank  
 Description: PE2 daily 11.0 TVP @ 190,000 bbl/day

**Tank Dimensions**  
 Diameter (ft): 117.00  
 Volume (gallons): 2,310,000.00  
 Turnovers: 1,280.91  
 Self Supp. Roof? (y/n): Y  
 No. of Columns: 0.00  
 Eff. Col. Diam. (ft): 0.00

**Paint Characteristics**  
 Internal Shell Condition: Light Rust  
 Shell Color/Shade: White/White  
 Shell Condition: Good  
 Roof Color/Shade: White/White  
 Roof Condition: Good

**Rim-Seal System**  
 Primary Seal: Mechanical Shoe  
 Secondary Seal: Rim-mounted

**Deck Characteristics**  
 Deck Fitting Category: Detail  
 Deck Type: Bolted  
 Construction: Sheet  
 Deck Seam: Sheet: 6 Ft Wide  
 Deck Seam Len. (ft): 1,827.72

PE 2  
 TVP = 11.0 PSIA  
 1 b/day

Deck Fitting/Status	Quantity
Access Hatch (24-in. Diam./Bolted Cover, Gasketed)	1
Automatic Gauge Float Well/Bolted Cover, Gasketed	1
Roof Leg or Hanger Well/Adjustable	40
Sample Pipe or Well (24-in. Diam./Slit Fabric Seal 10% Open)	1
Stub Drain (1-in. Diameter)/Slit Fabric Seal 10% Open	110
Vacuum Breaker (10-in. Diam./Weighted Mech. Actuation, Gask.	1

Meteorological 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**

**S-77-9-8 - Internal Floating Roof Tank**  
**Bakersfield, California**

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F)			Liquid Bulk Temp (deg F)	Vapor Pressure (psia)			Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
		Avg.	Min.	Max.		Avg.	Min.	Max.					
Crude oil (TVP 11.0)	Jan	58.62	54.46	62.78	65.42	11.0000	N/A	N/A	50.0000			207.00	Option 1: VP50 = 11 VP60 = 11
Crude oil (TVP 11.0)	Feb	61.49	56.39	66.58	65.42	11.0000	N/A	N/A	50.0000			207.00	Option 1: VP60 = 11 VP70 = 11
Crude oil (TVP 11.0)	Mar	63.85	57.94	69.77	65.42	11.0000	N/A	N/A	50.0000			207.00	Option 1: VP60 = 11 VP70 = 11
Crude oil (TVP 11.0)	Apr	66.98	60.01	73.95	65.42	11.0000	N/A	N/A	50.0000			207.00	Option 1: VP60 = 11 VP70 = 11
Crude oil (TVP 11.0)	May	71.00	63.30	78.70	65.42	11.0000	N/A	N/A	50.0000			207.00	Option 1: VP70 = 11 VP80 = 11
Crude oil (TVP 11.0)	Jun	74.47	66.32	82.63	65.42	11.0000	N/A	N/A	50.0000			207.00	Option 1: VP70 = 11 VP80 = 11
Crude oil (TVP 11.0)	Jul	77.01	68.60	85.22	65.42	11.0000	N/A	N/A	50.0000			207.00	Option 1: VP70 = 11 VP80 = 11
Crude oil (TVP 11.0)	Aug	76.03	68.25	83.81	65.42	11.0000	N/A	N/A	50.0000			207.00	Option 1: VP70 = 11 VP80 = 11
Crude oil (TVP 11.0)	Sep	72.96	65.93	79.98	65.42	11.0000	N/A	N/A	50.0000			207.00	Option 1: VP70 = 11 VP80 = 11
Crude oil (TVP 11.0)	Oct	68.33	62.00	74.66	65.42	11.0000	N/A	N/A	50.0000			207.00	Option 1: VP60 = 11 VP70 = 11
Crude oil (TVP 11.0)	Nov	62.38	57.33	67.44	65.42	11.0000	N/A	N/A	50.0000			207.00	Option 1: VP60 = 11 VP70 = 11
Crude oil (TVP 11.0)	Dec	58.39	54.32	62.46	65.42	11.0000	N/A	N/A	50.0000			207.00	Option 1: VP50 = 11 VP60 = 11

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

**S-77-9-8 - Internal Floating Roof Tank**  
**Bakersfield, California**

Month:	January	February	March	April	May	June	July	August	September	October	November	December
Rim Seal Losses (lb):	40.0729	40.0729	40.0729	40.0729	40.0729	40.0729	40.0729	40.0729	40.0729	40.0729	40.0729	40.0729
Seal Factor A (lb-mole/ft-yr):	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000
Seal Factor B (lb-mole/ft-yr (mph) <sup>0.75</sup> ):	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000
Value of Vapor Pressure Function:	0.3425	0.3425	0.3425	0.3425	0.3425	0.3425	0.3425	0.3425	0.3425	0.3425	0.3425	0.3425
Vapor Pressure at Daily Average Liquid												
Surface Temperature (psia):	11.0000	11.0000	11.0000	11.0000	11.0000	11.0000	11.0000	11.0000	11.0000	11.0000	11.0000	11.0000
Tank Diameter (ft):	117.0000	117.0000	117.0000	117.0000	117.0000	117.0000	117.0000	117.0000	117.0000	117.0000	117.0000	117.0000
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):	2,235.7982	2,235.7982	2,235.7982	2,235.7982	2,235.7982	2,235.7982	2,235.7982	2,235.7982	2,235.7982	2,235.7982	2,235.7982	2,235.7982
Number of Columns:	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Effective Column Diameter (ft):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Net Throughput (gal/mo.):	242,725.175	242,725.175	242,725.175	242,725.175	242,725.175	242,725.175	242,725.175	242,725.175	242,725.175	242,725.175	242,725.175	242,725.175
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):	8.0000	8.0000	8.0000	8.0000	8.0000	8.0000	8.0000	8.0000	8.0000	8.0000	8.0000	8.0000
Tank Diameter (ft):	117.0000	117.0000	117.0000	117.0000	117.0000	117.0000	117.0000	117.0000	117.0000	117.0000	117.0000	117.0000
Deck Fitting Losses (lb):	268.6369	268.6369	268.6369	268.6369	268.6369	268.6369	268.6369	268.6369	268.6369	268.6369	268.6369	268.6369
Value of Vapor Pressure Function:	0.3425	0.3425	0.3425	0.3425	0.3425	0.3425	0.3425	0.3425	0.3425	0.3425	0.3425	0.3425
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):	470.6000	470.6000	470.6000	470.6000	470.6000	470.6000	470.6000	470.6000	470.6000	470.6000	470.6000	470.6000
Deck Seam Losses (lb):	185.9784	185.9784	185.9784	185.9784	185.9784	185.9784	185.9784	185.9784	185.9784	185.9784	185.9784	185.9784
Deck Seam Length (ft):	1,827.7221	1,827.7221	1,827.7221	1,827.7221	1,827.7221	1,827.7221	1,827.7221	1,827.7221	1,827.7221	1,827.7221	1,827.7221	1,827.7221
Deck Seam Loss per Unit Length Factor (lb-mole/ft-yr):	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400	0.1400
Deck Seam Length Factor (ft/sqft):	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700
Tank Diameter (ft):	117.0000	117.0000	117.0000	117.0000	117.0000	117.0000	117.0000	117.0000	117.0000	117.0000	117.0000	117.0000
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
<b>Total Losses (lb):</b>	<b>2,730.4864</b>											

Roof Fitting/Status	Quantity	KFa (lb-mole/yr)	KFb (lb-mole/yr mph <sup>0.75</sup> n)	m	Losses (lb)
Access Hatch (24-in. Diam.)/Bolted Cover, Gasketed	1	1.60	0.00	0.00	10.9601
Automatic Gauge Float Well/Bolted Cover, Gasketed	1	2.80	0.00	0.00	19.1802
Roof Leg or Hanger Well/Adjustable	40	7.90	0.00	0.00	2,164.6220
Sample Pipe or Well (24-in. Diam.)/Silt Fabric Seal 10% Open	1	12.00	0.00	0.00	82.2008
Stub Drain (1-in. Diameter)/	110	1.20	0.00	0.00	904.2092
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1	6.20	1.20	0.94	42.4704

$$\frac{2730.5}{30} = 91.0 \text{ lb DAY}$$

**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

S-77-9-8 - Internal Floating Roof Tank  
Bakersfield, California

Components	Losses(lbs)				Total Emissions
	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	
Crude oil (TVP 11.0)	480.87	26,829.58	3,223.64	2,231.74	32,765.84

**TANKS 4.0.9d**  
**Emissions Report - Summary Format**  
**Tank Identification and Physical Characteristics**

**Identification**

User Identification: S-77-9-8  
 City: Bakersfield  
 State: California  
 Company: Shell Pipeline  
 Type of Tank: Internal Floating Roof Tank  
 Description: PE2 annual 11.0 TVP @ 85,000 bbl/day

**Tank Dimensions**

Diameter (ft): 117.00  
 Volume (gallons): 2,310,000.00  
 Turnovers: 549.88  
 Self Supp. Roof? (y/n): Y  
 No. of Columns: 0.00  
 Eff. Col. Diam. (ft): 0.00

**Paint Characteristics**

Internal Shell Condition: Light Rust  
 Shell Color/Shade: White/White  
 Shell Condition: Good  
 Roof Color/Shade: White/White  
 Roof Condition: Good

**Rim-Seal System**

Primary Seal: Mechanical Shoe  
 Secondary Seal: Rim-mounted

**Deck Characteristics**

Deck Fitting Category: Detail  
 Deck Type: Bolted  
 Construction: Sheet  
 Deck Seam: Sheet 6 Ft Wide  
 Deck Seam Len. (ft): 1,827.72

PE2 2  
 TVP = 11.0 PSIA  
 1b/yr

**Deck Fitting/Status**

**Quantity**

Access Hatch (24-in. Diam.)/Bolted Cover, Gasketed	1
Automatic Gauge Float Well/Bolted Cover, Gasketed	1
Roof Leg or Hanger Well/Adjustable	40
Sample Pipe or Well (24-in. Diam.)/Slit Fabric Seal 10% Open	1
Stub Drain (1-in. Diameter)/Slit Fabric Seal 10% Open	110
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1

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

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

**S-77-9-8 - Internal Floating Roof Tank**  
**Bakersfield, California**

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F)			Liquid Bulk Temp (deg F)	Vapor Pressure (psia)			Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
		Avg.	Min.	Max.		Avg.	Min.	Max.					
Crude oil (TVP 11.0)	Jan	58.62	54.46	62.78	65.42	11.0000	N/A	N/A	50.0000			207.00	Option 1: VP50 = 11 VP60 = 11
Crude oil (TVP 11.0)	Feb	61.49	56.39	66.58	65.42	11.0000	N/A	N/A	50.0000			207.00	Option 1: VP60 = 11 VP70 = 11
Crude oil (TVP 11.0)	Mar	63.85	57.94	69.77	65.42	11.0000	N/A	N/A	50.0000			207.00	Option 1: VP60 = 11 VP70 = 11
Crude oil (TVP 11.0)	Apr	66.98	60.01	73.95	65.42	11.0000	N/A	N/A	50.0000			207.00	Option 1: VP60 = 11 VP70 = 11
Crude oil (TVP 11.0)	May	71.00	63.30	78.70	65.42	11.0000	N/A	N/A	50.0000			207.00	Option 1: VP70 = 11 VP80 = 11
Crude oil (TVP 11.0)	Jun	74.47	66.32	82.63	65.42	11.0000	N/A	N/A	50.0000			207.00	Option 1: VP70 = 11 VP80 = 11
Crude oil (TVP 11.0)	Jul	77.01	68.80	85.22	65.42	11.0000	N/A	N/A	50.0000			207.00	Option 1: VP70 = 11 VP80 = 11
Crude oil (TVP 11.0)	Aug	76.03	68.25	83.81	65.42	11.0000	N/A	N/A	50.0000			207.00	Option 1: VP70 = 11 VP80 = 11
Crude oil (TVP 11.0)	Sep	72.96	65.93	79.98	65.42	11.0000	N/A	N/A	50.0000			207.00	Option 1: VP70 = 11 VP80 = 11
Crude oil (TVP 11.0)	Oct	68.33	62.00	74.66	65.42	11.0000	N/A	N/A	50.0000			207.00	Option 1: VP60 = 11 VP70 = 11
Crude oil (TVP 11.0)	Nov	62.38	57.33	67.44	65.42	11.0000	N/A	N/A	50.0000			207.00	Option 1: VP60 = 11 VP70 = 11
Crude oil (TVP 11.0)	Dec	58.39	54.32	62.46	65.42	11.0000	N/A	N/A	50.0000			207.00	Option 1: VP50 = 11 VP60 = 11

**TANKS 4.0.9d**  
**Emissions Report - Summary Format**  
**Individual Tank Emission Totals**

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

S-77-9-8 - Internal Floating Roof Tank  
Bakersfield, California

Components	Losses(lbs)				Total Emissions
	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	
Crude oil (TVP 11.0)	480.87	11,700.32	3,223.64	2,231.74	17,636.58

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

**Identification**

User Identification: S-77-14-8  
 City: Bakersfield  
 State: California  
 Company: Shell Pipeline  
 Type of Tank: External Floating Roof Tank  
 Description: S-77-14 PE2, TVP 11.0 @ 190,000 bbl/day

**Tank Dimensions**

Diameter (ft): 137.00  
 Volume (gallons): 5,292,000.00  
 Turnovers: 550.40

**Paint Characteristics**

Internal Shell Condition: Light Rust  
 Shell Color/Shade: White/White  
 Shell Condition: Good

**Roof Characteristics**

Type: Pontoon  
 Fitting Category: Detail

**Tank Construction and Rim-Seal System**

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

**Deck Fitting/Status**

**Quantity**

Access Hatch (24-in. Diam.)/Bolted Cover, Gasketed	1
Automatic Gauge Float Well/Unbolted Cover, Gasketed	1
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	2
Slotted Guide-Pole/Sample Well/Gask Sliding Covr. w. Float,Sleeve,Wiper	1
Gauge-Hatch/Sample Well (8-in. Diam.)/Weighted Mech. Actuation, Gask.	1
Roof Leg (3-in. Diameter)/Adjustable, Pontoon Area, Sock	21
Roof Leg (3-in. Diameter)/Adjustable, Center Area, Sock	33
Rim Vent (8-in. Diameter)/Weighted Mech. Actuation, Gask.	1

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

PE2  
 TVP = 11.0 PSIA  
 16/DAY

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

**S-77-14-8 - External Floating Roof Tank**  
**Bakersfield, California**

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F)			Liquid Bulk Temp (deg F)	Vapor Pressure (psia)			Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
		Avg.	Min.	Max.		Avg.	Min.	Max.					
Crude oil (TVP 11.0)	Jan	58.62	54.46	62.78	65.42	11.0000	N/A	N/A	50.0000			207.00	Option 1: VP50 = 11 VP60 = 11
Crude oil (TVP 11.0)	Feb	61.49	56.39	66.58	65.42	11.0000	N/A	N/A	50.0000			207.00	Option 1: VP60 = 11 VP70 = 11
Crude oil (TVP 11.0)	Mar	63.85	57.94	69.77	65.42	11.0000	N/A	N/A	50.0000			207.00	Option 1: VP60 = 11 VP70 = 11
Crude oil (TVP 11.0)	Apr	66.98	60.01	73.95	65.42	11.0000	N/A	N/A	50.0000			207.00	Option 1: VP60 = 11 VP70 = 11
Crude oil (TVP 11.0)	May	71.00	63.30	78.70	65.42	11.0000	N/A	N/A	50.0000			207.00	Option 1: VP70 = 11 VP80 = 11
Crude oil (TVP 11.0)	Jun	74.47	66.32	82.63	65.42	11.0000	N/A	N/A	50.0000			207.00	Option 1: VP70 = 11 VP80 = 11
Crude oil (TVP 11.0)	Jul	77.01	68.80	85.22	65.42	11.0000	N/A	N/A	50.0000			207.00	Option 1: VP70 = 11 VP80 = 11
Crude oil (TVP 11.0)	Aug	76.03	68.25	83.81	65.42	11.0000	N/A	N/A	50.0000			207.00	Option 1: VP70 = 11 VP80 = 11
Crude oil (TVP 11.0)	Sep	72.96	65.93	79.98	65.42	11.0000	N/A	N/A	50.0000			207.00	Option 1: VP70 = 11 VP80 = 11
Crude oil (TVP 11.0)	Oct	68.33	62.00	74.66	65.42	11.0000	N/A	N/A	50.0000			207.00	Option 1: VP60 = 11 VP70 = 11
Crude oil (TVP 11.0)	Nov	62.38	57.33	67.44	65.42	11.0000	N/A	N/A	50.0000			207.00	Option 1: VP60 = 11 VP70 = 11
Crude oil (TVP 11.0)	Dec	58.39	54.32	62.46	65.42	11.0000	N/A	N/A	50.0000			207.00	Option 1: VP50 = 11 VP60 = 11

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

**S-77-14-8 - External Floating Roof Tank**  
**Bakersfield, California**

Month:	January	February	March	April	May	June	July	August	September	October	November	December
Rim Seal Losses (lb):	209.5893	228.3585	250.2559	269.0251	294.0507	294.0507	272.1533	259.6405	240.8713	218.9739	206.4611	203.3329
Seal Factor A (lb-mole/ft-yr):	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000
Seal Factor B (lb-mole/ft-yr (mph) <sup>0.75</sup> ):	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000
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
Exponent:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Value of Vapor Pressure Function:	0.3425	0.3425	0.3425	0.3425	0.3425	0.3425	0.3425	0.3425	0.3425	0.3425	0.3425	0.3425
Vapor Pressure at Daily Average Liquid												
Surface Temperature (psia)	11.0000	11.0000	11.0000	11.0000	11.0000	11.0000	11.0000	11.0000	11.0000	11.0000	11.0000	11.0000
Tank Diameter (ft)	137.0000	137.0000	137.0000	137.0000	137.0000	137.0000	137.0000	137.0000	137.0000	137.0000	137.0000	137.0000
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):	1,909.4139	1,909.4139	1,909.4139	1,909.4139	1,909.4139	1,909.4139	1,909.4139	1,909.4139	1,909.4139	1,909.4139	1,909.4139	1,909.4139
Net Throughput (gal/mo.):	242,726.4000	242,726.4000	242,726.4000	242,726.4000	242,726.4000	242,726.4000	242,726.4000	242,726.4000	242,726.4000	242,726.4000	242,726.4000	242,726.4000
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):	8.0000	8.0000	8.0000	8.0000	8.0000	8.0000	8.0000	8.0000	8.0000	8.0000	8.0000	8.0000
Tank Diameter (ft):	137.0000	137.0000	137.0000	137.0000	137.0000	137.0000	137.0000	137.0000	137.0000	137.0000	137.0000	137.0000
Roof Fitting Losses (lb):	87.0768	90.4388	94.2603	97.4613	101.6369	101.6369	97.9887	95.8688	92.6348	88.7687	86.5077	85.9359
Value of Vapor Pressure Function:	0.3425	0.3425	0.3425	0.3425	0.3425	0.3425	0.3425	0.3425	0.3425	0.3425	0.3425	0.3425
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):	152.5417	158.4314	165.1258	170.7333	178.0483	178.0483	171.6573	167.9435	162.2782	155.5056	151.5448	150.5431
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
<b>Total Losses (lb)</b>	<b>2,206.0800</b>	<b>2,228.2113</b>	<b>2,253.9301</b>	<b>2,275.9003</b>	<b>2,305.1015</b>	<b>2,305.1015</b>	<b>2,279.5559</b>	<b>2,264.9232</b>	<b>2,242.9200</b>	<b>2,217.1565</b>	<b>2,202.3827</b>	<b>2,198.6827</b>

Roof Fitting/Status	Quantity	KFa (lb-mole/yr)	KFb (lb-mole/yr mph <sup>0.75</sup> )	m	Losses (lb)
Access Hatch (24-in. Diam.) Bolted Cover, Gasketed	1	1.60	0.00	0.00	10.9601
Automatic Gauge Float Well/Unbolted Cover, Gasketed	1	4.30	17.00	0.38	234.1483
Vacuum Breaker (10-in. Diam.) Weighted Mech. Actuation, Gask.	2	6.20	1.20	0.94	151.7339
Slotted Guide-Pole/Sample Well/Gask Sliding Covr. w. Float/Sleeve/Wiper	1	11.00	9.90	0.89	330.9319
Gauge-Hatch/Sample Well (8-in. Diam.) Weighted Mech. Actuation, Gask	1	0.47	0.02	0.97	3.8018
Roof Leg (3-in. Diameter) Adjustable, Pontoon Area, Sock	21	1.20	0.14	0.65	225.5894
Roof Leg (3-in. Diameter) Adjustable, Center Area, Sock	33	0.49	0.16	0.14	155.2690
Rim Vent (6-in. Diameter) Weighted Mech. Actuation, Gask.	1	0.71	0.10	1.00	7.9094

$$\frac{2305.1}{30} = 76.8 \text{ LB DAY}$$

**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

S-77-14-8 - External Floating Roof Tank  
 Bakersfield, California

Components	Losses(lbs)				Total Emissions
	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	
Crude oil (TVP 11.0)	2,946.76	22,912.97	1,120.22	0.00	26,979.95

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

**Identification**

User Identification: S-77-14-8  
 City: Bakersfield  
 State: California  
 Company: Shell Pipeline  
 Type of Tank: External Floating Roof Tank  
 Description: S-77-14 PE2, TVP 11.0 @ 85,000 bbl/day

**Tank Dimensions**

Diameter (ft): 137.00  
 Volume (gallons): 5,292,000.00  
 Turnovers: 246.20

**Paint Characteristics**

Internal Shell Condition: Light Rust  
 Shell Color/Shade: White/White  
 Shell Condition: Good

**Roof Characteristics**

Type: Pontoon  
 Fitting Category: Detail

**Tank Construction and Rim-Seal System**

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

**Deck Fitting/Status**

**Quantity**

Access Hatch (24-in. Diam.)/Bolted Cover, Gasketed	1
Automatic Gauge Float Well/Unbolted Cover, Gasketed	1
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	2
Slotted Guide-Pole/Sample Well/Gask Sliding Covr, w. Float,Sleeve,Wiper	1
Gauge-Hatch/Sample Well (8-in. Diam.)/Weighted Mech. Actuation, Gask.	1
Roof Leg (3-in. Diameter)/Adjustable, Pontoon Area, Sock	21
Roof Leg (3-in. Diameter)/Adjustable, Center Area, Sock	33
Rim Vent (6-in. Diameter)/Weighted Mech. Actuation, Gask.	1

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

PE 2  
 TVP = 11.0 PSIA  
 16/ER

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

**S-77-14-8 - External Floating Roof Tank**  
**Bakersfield, California**

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F)			Liquid Bulk Temp (deg F)	Vapor Pressure (psia)			Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
		Avg.	Min.	Max.		Avg.	Min.	Max.					
Crude oil (TVP 11.0)	Jan	58.62	54.46	62.78	65.42	11.0000	N/A	N/A	50.0000			207.00	Option 1: VP50 = 11 VP60 = 11
Crude oil (TVP 11.0)	Feb	61.49	56.39	66.58	65.42	11.0000	N/A	N/A	50.0000			207.00	Option 1: VP60 = 11 VP70 = 11
Crude oil (TVP 11.0)	Mar	63.85	57.94	69.77	65.42	11.0000	N/A	N/A	50.0000			207.00	Option 1: VP60 = 11 VP70 = 11
Crude oil (TVP 11.0)	Apr	66.98	60.01	73.95	65.42	11.0000	N/A	N/A	50.0000			207.00	Option 1: VP60 = 11 VP70 = 11
Crude oil (TVP 11.0)	May	71.00	63.30	78.70	65.42	11.0000	N/A	N/A	50.0000			207.00	Option 1: VP70 = 11 VP80 = 11
Crude oil (TVP 11.0)	Jun	74.47	66.32	82.63	65.42	11.0000	N/A	N/A	50.0000			207.00	Option 1: VP70 = 11 VP80 = 11
Crude oil (TVP 11.0)	Jul	77.01	68.80	85.22	65.42	11.0000	N/A	N/A	50.0000			207.00	Option 1: VP70 = 11 VP80 = 11
Crude oil (TVP 11.0)	Aug	76.03	68.25	83.81	65.42	11.0000	N/A	N/A	50.0000			207.00	Option 1: VP70 = 11 VP80 = 11
Crude oil (TVP 11.0)	Sep	72.96	65.93	79.98	65.42	11.0000	N/A	N/A	50.0000			207.00	Option 1: VP70 = 11 VP80 = 11
Crude oil (TVP 11.0)	Oct	68.33	62.00	74.66	65.42	11.0000	N/A	N/A	50.0000			207.00	Option 1: VP60 = 11 VP70 = 11
Crude oil (TVP 11.0)	Nov	62.38	57.33	67.44	65.42	11.0000	N/A	N/A	50.0000			207.00	Option 1: VP60 = 11 VP70 = 11
Crude oil (TVP 11.0)	Dec	58.39	54.32	62.46	65.42	11.0000	N/A	N/A	50.0000			207.00	Option 1: VP50 = 11 VP60 = 11

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

**S-77-14-8 - External Floating Roof Tank**  
**Bakersfield, California**

Month:	January	February	March	April	May	June	July	August	September	October	November	December
Rim Seal Losses (lb)	209.5893	228.3585	250.2559	269.0251	294.0507	294.0507	272.1533	259.6405	240.8713	218.9739	206.4611	203.3329
Seal Factor A (lb-mole/ft-yr)	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000
Seal Factor B (lb-mole/ft-yr (mph) <sup>0.75</sup> )	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000
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	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Value of Vapor Pressure Function	0.3425	0.3425	0.3425	0.3425	0.3425	0.3425	0.3425	0.3425	0.3425	0.3425	0.3425	0.3425
Vapor Pressure at Daily Average Liquid												
Surface Temperature (psia)	11.0000	11.0000	11.0000	11.0000	11.0000	11.0000	11.0000	11.0000	11.0000	11.0000	11.0000	11.0000
Tank Diameter (ft)	137.0000	137.0000	137.0000	137.0000	137.0000	137.0000	137.0000	137.0000	137.0000	137.0000	137.0000	137.0000
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)	854.1019	854.1019	854.1019	854.1019	854.1019	854.1019	854.1019	854.1019	854.1019	854.1019	854.1019	854.1019
Net Throughput (gal/mo.)	108,574.200,0000	108,574.200,0000	108,574.200,0000	108,574.200,0000	108,574.200,0000	108,574.200,0000	108,574.200,0000	108,574.200,0000	108,574.200,0000	108,574.200,0000	108,574.200,0000	108,574.200,0000
Shell Clingage Factor (dbl/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)	8.0000	8.0000	8.0000	8.0000	8.0000	8.0000	8.0000	8.0000	8.0000	8.0000	8.0000	8.0000
Tank Diameter (ft)	137.0000	137.0000	137.0000	137.0000	137.0000	137.0000	137.0000	137.0000	137.0000	137.0000	137.0000	137.0000
Roof Fitting Losses (lb)	87.0768	90.4388	94.2603	97.4613	101.6369	101.6369	97.9887	95.8688	92.6348	88.7687	86.5077	85.9359
Value of Vapor Pressure Function	0.3425	0.3425	0.3425	0.3425	0.3425	0.3425	0.3425	0.3425	0.3425	0.3425	0.3425	0.3425
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)	152.5417	158.4314	165.1258	170.7333	178.0483	178.0483	171.6573	167.9435	162.2782	155.5056	151.5448	150.5431
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
<b>Total Losses (lb)</b>	<b>1,150.7680</b>	<b>1,172.8993</b>	<b>1,198.6181</b>	<b>1,220.5883</b>	<b>1,249.7895</b>	<b>1,249.7895</b>	<b>1,224.2439</b>	<b>1,209.6112</b>	<b>1,187.6080</b>	<b>1,161.8445</b>	<b>1,147.0707</b>	<b>1,143.3708</b>

Roof Fitting/Status	Quantity	KFa(lb-mole/yr)	KFb(lb-mole/(yr mph <sup>0.75</sup> ))	m	Losses(lb)
Access Hatch (24-in. Diam.)/Bolted Cover, Gasketed	1	1.60	0.00	0.00	10.9801
Automatic Gauge Float Well/Unbolted Cover, Gasketed	1	4.30	17.00	0.38	234.1483
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask	2	6.20	1.20	0.94	151.7339
Slotted Guide-Pole/Sample Well/Gask Sliding Covr. w. Float/Sleeve,Wiper	1	11.00	9.90	0.89	330.9319
Gauge-Hatch/Sample Well (8-in. Diam.)/Weighted Mech. Actuation, Gask	1	0.47	0.02	0.97	3.8018
Roof Leg (3-in. Diameter)/Adjustable, Pontoon Area, Sock	21	1.20	0.14	0.65	225.5894
Roof Leg (3-in. Diameter)/Adjustable, Center Area, Sock	33	0.49	0.16	0.14	155.2680
Rim Vent (6-in. Diameter)/Weighted Mech. Actuation, Gask	1	0.71	0.10	1.00	7.9894

**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**

**S-77-14-8 - External Floating Roof Tank**  
**Bakersfield, California**

Components	Losses(lbs)				Total Emissions
	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	
Crude oil (TVP 11.0)	2,946.76	10,249.22	1,120.22	0.00	14,316.20

**APPENDIX C**  
**Draft ATCs**

San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

ISSUANCE DATE: DRAFT  
**DRAFT**

**PERMIT NO:** S-77-9-8

**LEGAL OWNER OR OPERATOR:** SHELL PIPELINE COMPANY LP  
**MAILING ADDRESS:** 20945 S WILMINGTON AVE  
CARSON, CA 90810-1039

**LOCATION:** CARNERAS PUMP STATION  
LOST HILLS, CA

**SECTION:** SW34 **TOWNSHIP:** 27S **RANGE:** 20E

**EQUIPMENT DESCRIPTION:**

MODIFICATION OF 55,000 BBL RIVETED INTERNAL FLOATING ROOF STORAGE TANK #55GL5 WITH METALLIC SHOE PRIMARY SEAL AND SECONDARY WIPER SEAL: INCREASE MAXIMUM TVP LIMIT TO 11.0 PSIA

**CONDITIONS**

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. The true vapor pressure of liquid stored shall not exceed 11.0 psia. [District Rule 2201] Federally Enforceable Through Title V Permit
4. Total throughput of organic liquid with TVP greater than 5.9 psia and less than or equal to 11.0 psia shall not exceed 190,000 bbl/day, nor 85,000 bbl/day on a monthly average basis. [District Rule 2201] Federally Enforceable Through Title V Permit
5. Total throughput of organic liquid with TVP less than or equal to 5.9 psia shall not exceed 360,000 bbl/day, nor 180,000 bbl/day on a monthly average basis. [District Rule 2201] Federally Enforceable Through Title V Permit
6. Combined total throughput of permits S-77-9, '-11, and '-14 shall not exceed 550,000 bbl/day, nor 265,000 bbl/day on a monthly average basis. [District Rule 2201] Federally Enforceable Through Title V Permit

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**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 VAPCO

**Arnaud Marjolle, Director of Permit Services**

S-77-9-8 : May 14 2014 12:06PM -- TORID : Joint Inspection NOT Required

7. VOC emission rate from permits S-77-9, '-11, and '-14 shall not exceed 227.1 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit
8. VOC emission rate from permits S-77-9, '-11, and '-14 shall not exceed 41,913 lb/yr. [District Rule 2201] Federally Enforceable Through Title V Permit
9. VOC emission rate shall not exceed 152.8 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Tank shall be equipped with operational temperature indicator. [District Rule 2201] Federally Enforceable Through Title V Permit
11. Permittee shall maintain a record of the liquid stored, the period of storage, and the maximum true vapor pressure of that liquid during the respective storage period. [District Rule 2201] Federally Enforceable Through Title V Permit
12. Permittee shall maintain records of maximum daily throughput and monthly average daily throughput. [District Rule 2201] Federally Enforceable Through Title V Permit
13. When storing organic liquids with true vapor pressure less than 0.5 psia, the requirements of Sections 5.3, 5.5 and 6.1 of District Rule 4623 (Amended May 19, 2005) shall not apply to this unit. This exemption applies to all conditions in this permit referencing Rule 4623 Sections 5.3, 5.5 or 6.1 only. [District Rule 4623, 2.0] Federally Enforceable Through Title V Permit
14. Before switching to the storage of organic liquids with true vapor pressure greater than or equal to 0.5 psia, all covers, seals, and lids shall be inspected by the facility operator to ensure compliance with the provisions of this permit. This includes all conditions containing District Rule 4623 reference. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
15. The internal floating roof shall rest or float on the liquid surface (but not necessarily in complete contact with it) inside a storage vessel that has a fixed roof. The internal roof shall be floating on the liquid surface except during initial fill and when the storage vessel is completely emptied or subsequently emptied and 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 it's legs, the permittee shall notify the APCO in writing at least five days prior to performing the work. [District Rule 4623] Federally Enforceable Through Title V Permit
16. Gaps between the tank shell and the primary seal shall not exceed 2 1/2 inches. [District Rule 4623] Federally Enforceable Through Title V Permit
17. The cumulative length of all primary seal gaps greater than 1 1/2 inches shall not exceed 10% of the circumference of the tank. [District Rule 4623] Federally Enforceable Through Title V Permit
18. 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] Federally Enforceable Through Title V Permit
19. No continuous gap in the primary seal greater than 1/8 inch wide shall exceed 10% of the tank circumference. [District Rule 4623] Federally Enforceable Through Title V Permit
20. No gap between the tank shell and the secondary seal shall exceed 1/2 inch. [District Rule 4623] Federally Enforceable Through Title V Permit
21. 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] Federally Enforceable Through Title V Permit
22. 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 18 inches above the stored liquid surface. [District Rule 4623] Federally Enforceable Through Title V Permit
23. 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 5 inches for a length of at least 18 inches in the vertical plane above the liquid. [District Rule 4623] Federally Enforceable Through Title V Permit
24. 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] Federally Enforceable Through Title V Permit

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25. The secondary seal shall allow easy insertion of probes up to 2 1/2 inches in width in order to measure gaps in the primary seal. [District Rule 4623] Federally Enforceable Through Title V Permit
26. The secondary seal shall extend from the roof to the tank shell and shall not be attached to the primary seal. [District Rule 4623] Federally Enforceable Through Title V Permit
27. 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] Federally Enforceable Through Title V Permit
28. A gas-tight condition is defined as a condition without a gas leak. A gas leak is defined as a reading in excess of 10,000 ppmv, above background, as measured by a portable hydrocarbon detection instrument in accordance with the procedures specified in EPA Test Method 21. A reading in excess of 10,000 ppmv above background is a violation of this permit and Rule 4623 and shall be reported as a deviation. [District Rule 4623] Federally Enforceable Through Title V Permit
29. A leak-free condition is defined as a condition without a gas leak or a liquid leak. A liquid leak is defined as the dripping of organic liquid at a rate of more than 3 drops per minute. 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 liquid leak or reading in excess of 10,000 ppmv above background is a violation of this permit and Rule 4623 and shall be reported as a deviation. [District Rule 4623, 6.4] Federally Enforceable Through Title V Permit
30. Each opening in a non-contact internal floating roof, except for automatic bleeder vents (vacuum breaker vents) and rim space vents, shall provide a projection below the liquid surface. [District Rule 4623] Federally Enforceable Through Title V Permit
31. Each opening in the internal floating roof except for leg sleeves, automatic bleeder vents, rim space vents, column wells, ladder wells, sample wells, and stub drains is to be equipped with a cover or lid which is to be maintained in a closed position at all times (i.e., no visible gap) except when the device is in actual use. The cover or lid shall be equipped with a gasket. Covers on each access hatch and automatic gauge float well shall be bolted except when they are in use. [District Rule 4623] Federally Enforceable Through Title V Permit
32. 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] Federally Enforceable Through Title V Permit
33. Rim vents shall be equipped with a gasket and are to be set to open only when the internal floating roof is not floating or at the manufacturer's recommended setting. [District Rule 4623] Federally Enforceable Through Title V Permit
34. Each penetration of the internal floating roof for the purpose of sampling shall be a sample well. The well shall have a slit fabric cover that covers at least 90% of the opening. The fabric cover must be impermeable. [District Rule 4623] Federally Enforceable Through Title V Permit
35. Each penetration of the internal floating roof that allows for passage of a column supporting the fixed roof shall have a flexible fabric sleeve seal or a gasketed sliding cover. The fabric sleeve must be impermeable. [District Rule 4623] Federally Enforceable Through Title V Permit
36. The permittee shall visually inspect the internal floating roof, and its appurtenant parts, fittings, etc. and measure the gaps of the primary seal and/or secondary seal prior to filling the tank for newly constructed, repair, or rebuilt internal floating roof tanks. If holes, tears, or openings in the primary seal, the secondary seal, the seal fabric or defects in the internal floating roof or its appurtenant parts, components, fittings, etc., are found, they shall be repaired prior to filling the tank. [District Rule 4623] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

37. The permittee shall visually inspect, through the manholes, roof hatches, or other openings on the fixed roof, the internal floating roof and its appurtenant parts, fittings, etc., and the primary seal and/or secondary seal at least once every 12 months after the tank is initially filled with an organic liquid. There should be no visible organic liquid on the roof, tank walls, or anywhere. Other than the gap criteria specified by this rule, no holes, tears, or other openings are allowed that would permit the escape of vapors. Any defects found are violations of this rule. [District Rule 4623] Federally Enforceable Through Title V Permit
38. The permittee shall conduct actual gap measurements of the primary seal and/or secondary seal at least once every 60 months. [District Rule 4623] Federally Enforceable Through Title V Permit
39. Permittee shall submit the reports of the floating roof tank inspections to the APCO within five calendar days after the completion of the inspection only for those tanks that failed to meet the applicable requirements of Rule 4623, Sections 5.2 through 5.5. The inspection report for tanks that have been determined to be in compliance with the requirements of Sections 5.2 through 5.5 need not be submitted to the APCO, but the inspection report shall be kept on-site and made available upon request by the APCO. The inspection report shall contain all necessary information to demonstrate compliance with the provisions of Rule 4623. [District Rule 4623] Federally Enforceable Through Title V Permit
40. Permittee shall maintain the records of the internal 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 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] Federally Enforceable Through Title V Permit
41. The tank pressure-vacuum (PV) relief valve shall be set to within 10% of the maximum allowable working pressure of the tank. The PV relief valve shall be permanently labeled with the operating pressure settings. The PV relief valve shall be properly installed and maintained in good operating order in accordance with the manufacturer's instructions, and shall remain in leak-free condition except when the operating pressure exceeds the valve's set pressure. [District Rule 4623, 5.2] Federally Enforceable Through Title V Permit
42. Permittee shall notify District at least 7 days prior to the date when unobstructed primary and secondary seal/gap testing will occur. [District Rule 1070] Federally Enforceable Through Title V Permit
43. All records required to be maintained by this permit shall be maintained for a period of at least five years and shall be made readily available for District inspection upon request. [District Rule 4623] Federally Enforceable Through Title V Permit
44. This unit was constructed prior to 1973 and has not been modified (as defined in 40 CFR 60.14) or reconstructed (as defined in 40 CFR 60.15) since 1973. Therefore, the requirements of 40 CFR 60 are not applicable to this unit. A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
45. Permittee shall conduct true vapor pressure (TVP) testing of the organic liquid stored in this tank at least once every 24 months and/or whenever there is a change in the source or type of organic liquid stored in the tank. The TVP of any organic liquid shall be determined by measuring the Reid Vapor Pressure (RVP) using ASTM D 323 (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 of District Rule 4623. Records of TVP testing shall be maintained. [District Rule 2520, 9.3.2; 4623, 6.2.2, 6.3, 6.4] Federally Enforceable Through Title V Permit

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San Joaquin Valley  
Air Pollution Control District

## AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT  
**DRAFT**

**PERMIT NO:** S-77-14-8

**LEGAL OWNER OR OPERATOR:** SHELL PIPELINE COMPANY LP  
**MAILING ADDRESS:** 20945 S WILMINGTON AVE  
CARSON, CA 90810-1039

**LOCATION:** CARNERAS PUMP STATION  
LOST HILLS, CA

**SECTION:** SW34 **TOWNSHIP:** 27S **RANGE:** 20E

**EQUIPMENT DESCRIPTION:**

MODIFICATION OF 126,000 BBL WELDED EXTERNAL FLOATING ROOF TANK #126GL6 WITH METALLIC SHOE  
PRIMARY SEAL AND SECONDARY WIPER SEAL: INCREASE MAXIMUM TVP TO 11.0 PSIA

## CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. The true vapor pressure of liquid stored shall not exceed 11.0 psia. [District Rule 2201] Federally Enforceable Through Title V Permit
4. Total throughput of organic liquid with TVP greater than 5.9 psia and less than or equal to 11.0 psia shall not exceed 190,000 bbl/day, nor 85,000 bbl/day on a monthly average basis. [District Rule 2201] Federally Enforceable Through Title V Permit
5. Total throughput of organic liquid with TVP less than or equal to 5.9 psia shall not exceed 360,000 bbl/day, nor 180,000 bbl/day on a monthly average basis. [District Rule 2201] Federally Enforceable Through Title V Permit
6. Combined total throughput of permits S-77-9, '-11, and '-14 shall not exceed 550,000 bbl/day, nor 265,000 bbl/day on a monthly average basis. [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 VAPCO

**Arnaud Marjolle, Director of Permit Services**

S-77-14-8 May 14 2014 12:06PM -- TORID : Joint Inspection NOT Required

7. VOC emission rate from permits S-77-9, '-11, and '-14 shall not exceed 227.1 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit
8. VOC emission rate from permits S-77-9, '-11, and '-14 shall not exceed 41,913 lb/yr. [District Rule 2201] Federally Enforceable Through Title V Permit
9. VOC emission rate shall not exceed 129.9 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Permittee shall maintain a record of the liquid stored, the period of storage, and the maximum true vapor pressure of that liquid during the respective storage period. [40 CFR 60.116b(c) and District Rule 2201] Federally Enforceable Through Title V Permit
11. Permittee shall maintain records of maximum daily throughput and monthly average daily throughput. [District Rule 2201] Federally Enforceable Through Title V Permit
12. When storing organic liquids with true vapor pressure less than 0.5 psia, the requirements of Sections 5.3, 5.5 and 6.1 of District Rule 4623 (Amended May 19, 2005) shall not apply to this unit. This exemption applies to all conditions in this permit referencing Rule 4623 Sections 5.3, 5.5 or 6.1 only. [District Rule 4623, 2.0] Federally Enforceable Through Title V Permit
13. When storing organic liquids with true vapor pressure less than 0.75 psia, the requirements of 40 CFR 60 Subpart Kb shall not apply to this unit. This exemption applies to all conditions in this permit referencing 40 CFR 60 Subpart Kb only. [40 CFR 60.112b(a)] Federally Enforceable Through Title V Permit
14. Before switching to the storage of organic liquids with true vapor pressure greater than or equal to 0.5 psia, all covers, seals, and lids shall be inspected by the facility operator to ensure compliance with the provisions of this permit. This includes all conditions containing District Rule 4623 reference. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
15. Before switching to the storage of organic liquids with true vapor pressure greater than or equal to 0.75 psia, all covers, seals, and lids shall be inspected by the facility operator to ensure compliance with the provisions of this permit. This includes all conditions containing District Rule 4623 or 40 CFR 60 Subpart Kb reference. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
16. This tank shall be equipped with a closure device between the tank shell and roof edge consisting of two seals mounted one above the other; the one below shall be referred to as the primary seal, and the one above shall be referred as the secondary seal. [District NSR Rule; District Rule 4623, 5.3.1.2 and 40 CFR 60.112b(a)(2)(i)] Federally Enforceable Through Title V Permit
17. 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)] Federally Enforceable Through Title V Permit
18. Gaps between the tank shell and the primary seal shall not exceed 1 1/2 inches. [District Rule 4623, 5.3.2.1.1 and 40 CFR 60.113b(b)(4)(i)] Federally Enforceable Through Title V Permit
19. 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 and 40 CFR 60.113b(b)(4)(i)] Federally Enforceable Through Title V Permit
20. 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 and 40 CFR 60.113b(b)(4)(i)] Federally Enforceable Through Title V Permit
21. 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 and 40 CFR 60.113b(b)(4)(i)] Federally Enforceable Through Title V Permit
22. No gap between the tank shell and the secondary seal shall exceed 1/2 inch. [District Rule 4623, 5.3.2.1.2, 6.1 and 40 CFR 60.113b(b)(4)(ii)(B)] Federally Enforceable Through Title V Permit

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23. 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 and 40 CFR 60.113b(b)(4)(ii)(B)] Federally Enforceable Through Title V Permit
24. 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 and 40 CFR 60.113b(b)(4)(i)(A)] Federally Enforceable Through Title V Permit
25. 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
26. 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. Except for gaps meeting permit requirements, the primary seal shall completely cover the annular space between the edge of the floating roof and tank wall. [District Rule 4623, 5.3.2.1.5; 40 CFR 60.112b(a)(2)(i)(A), 40 CFR 60.113b(b)(4)(i)(B) and 60.113b(b)(4)(ii)(C)] Federally Enforceable Through Title V Permit
27. 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
28. The secondary seal shall extend from the roof to the tank shell and shall not be attached to the primary seal. Except for gaps meeting permit requirements, the secondary seal shall completely cover the annular space between the external floating roof and the wall of the storage vessel in a continuous fashion. [District Rule 4623, 5.3.2.1.7; 40 CFR 60.112b(a)(2)(i)(B) and 40 CFR 60.113b(b)(4)(ii)(A)] Federally Enforceable Through Title V Permit
29. 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, 5.2 & 5.5.1] Federally Enforceable Through Title V Permit
30. A gas-tight condition is defined as a condition without a gas leak. A gas leak is defined as a reading in excess of 10,000 ppmv, above background, as measured by a portable hydrocarbon detection instrument in accordance with the procedures specified in EPA Test Method 21. A reading in excess of 10,000 ppmv above background is a violation of this permit and Rule 4623 and shall be reported as a deviation. [District Rule 4623, 3.10 and 6.4.8] Federally Enforceable Through Title V Permit
31. 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, and 40 CFR 60.112b(a)(2)(ii)] Federally Enforceable Through Title V Permit
32. 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, and 40 CFR 60.112b(a)(2)(ii)] Federally Enforceable Through Title V Permit
33. 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, and 40 CFR 60.112b(a)(2)(ii)] Federally Enforceable Through Title V Permit
34. 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 40 CFR 60.112b(a)(2)(ii)] Federally Enforceable Through Title V Permit
35. 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, and 40 CFR 60.112b(a)(2)(ii)] Federally Enforceable Through Title V Permit

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36. 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
37. 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
38. 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
39. 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
40. The slotted guidepole well on a external floating roof shall be equipped with the following: a sliding cover, a well gasket, a pole sleeve, a pole wiper, and an internal float and float wiper designed to minimize the gap between the float and the well, and provided the gap shall not exceed 1/8 inch; or shall be equipped with a well gasket, a zero gap pole wiper seal and a pole sleeve that projects below the liquid surface. [District Rule 4623, 5.5.2.4.2] Federally Enforceable Through Title V Permit
41. The gap between the pole wiper and the slotted guidepole shall be added to the gaps measured to determine compliance with the secondary seal requirement, and in no case shall exceed 1/8 inch. [District Rule 4623, 5.5.2.4.3] Federally Enforceable Through Title V Permit
42. The permittee of external floating roof tanks 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] Federally Enforceable Through Title V Permit
43. Measurements of gaps between the tank wall and the primary and secondary seal shall be performed during the hydrostatic testing of the vessel or within 60 days of the initial fill with a volatile organic liquid. [40 CFR 60.113b(b)(1)(i)] Federally Enforceable Through Title V Permit
44. If any source ceases to store volatile organic liquid for a period of 1 year or more, subsequent introduction of volatile organic liquid into the vessel shall be considered an initial fill. [40 CFR 60.113b(b)(1)(iii)] Federally Enforceable Through Title V Permit
45. The permittee shall inspect all floating roof tanks 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. Permittee shall measure seal gaps, at one or more floating roof levels when the roof is floating off the roof leg supports, 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. The inspection results shall be submitted to the APCO as specified in Section 6.3.5. [County Rule 107 (40 CFR 60.113b(b)(1)(i) & (ii); and 40 CFR 60.113b(b)(2)(i) & (ii)] Federally Enforceable Through Title V Permit
46. The permittee 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 24 hours after the tank roof is re-floated. 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 before filling or refilling the storage vessel. The owner or 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. [District Rule 4623, 6.1.3.1.2 and 40 CFR 60.113b(b)(6)] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

47. Permittee shall submit the reports of the floating roof tank inspections to the APCO within five calendar days after the completion of the inspection only for those tanks that failed to meet the applicable requirements of Rule 4623, Sections 5.2 through 5.5. The inspection report for tanks that have been determined to be in compliance with the requirements of Sections 5.2 through 5.5 need not be submitted to the APCO, but the inspection report shall be kept on-site and made available upon request by the APCO. The inspection report shall contain all necessary information to demonstrate compliance with the provisions of Rule 4623. [District Rule 4623, 6.3.5 and 40 CFR 60.115b(b)] Federally Enforceable Through Title V Permit
48. 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 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] Federally Enforceable Through Title V Permit
49. All records required to be maintained by this permit shall be maintained for a period of at least five years and shall be made readily available for District inspection upon request. [District Rule 4623, 6.3 and 40 CFR 60.116b(a)] Federally Enforceable Through Title V Permit
50. Permittee shall notify District at least 30 days prior to the date when unobstructed primary and secondary seal/gap measurements will occur to afford the APCO the opportunity to have an observer present. [40 CFR 60.113b(b)(5)] Federally Enforceable Through Title V Permit
51. Permittee shall make necessary repairs or empty the storage vessel within 45 days of identification in any inspection for seals not meeting the requirements listed in 40 CFR 60.113b(b)(4)(i) and (ii). If necessary repairs cannot be made within 45 days and if the vessel cannot be emptied within 45 days, a 30-day extension may be requested from the APCO. Such an 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. [40 CFR 60.113b(b)(4)] Federally Enforceable Through Title V Permit
52. The owner or operator of each storage vessel shall keep readily accessible records showing the dimension of the storage vessel and an analysis showing the capacity of the storage vessel. Such records shall be retained for the life of the source. [40 CFR 60.116b(b)] Federally Enforceable Through Title V Permit
53. Permittee shall maintain records of daily throughput. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
54. Permittee shall conduct true vapor pressure (TVP) testing of the organic liquid stored in this tank at least once every 24 months and/or whenever there is a change in the source or type of organic liquid stored in the tank. The TVP of any organic liquid shall be determined by measuring the Reid Vapor Pressure (RVP) using ASTM D 323 (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 of District Rule 4623. Records of TVP testing shall be maintained. [District Rule 2520, 9.3.2, 4623, 6.4.3 and 6.2] Federally Enforceable Through Title V Permit
55. Compliance with permit conditions in the Title V permit shall be deemed compliance with District Rule 4623 (amended May 19, 2005) and 40CFR60 Subpart Kb. A permit shield is granted from this requirement. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

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