

<b>SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT</b>  <i>ENGINEERING &amp; COMPLIANCE</i>  <b>APPLICATION PROCESSING AND CALCULATIONS</b>	PAGES 30	PAGE 1
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	PROCESSED BY: Connie Yee	CHECKED BY

**PERMIT TO OPERATE EVALUATION**
**COMPANY NAME, LOCATION ADDRESS:**

Ultramar Inc, SCAQMD ID # 800026  
2402 E. Anaheim Street  
Wilmington CA 90744

**EQUIPMENT DESCRIPTION:**

Additions to the equipment description are underlined. New or modified conditions are underlined. Deletions to the equipment description and conditions are noted in strikeouts.

**Section D of Ultramar's Facility Permit, ID# 800026**

Equipment	ID No.	Connected To	Source Type/ Monitoring Unit	Emissions And Requirements	Conditions
<b>Process 14 : STORAGE TANKS</b>					P13.1
<b>System 2: EXTERNAL FLOATING ROOF TANKS</b>					S13.5
STORAGE TANK, EXTERNAL FLOATING ROOF, 94-TK-9005, 150000 BBL, DIAMETER: 156 FT, HEIGHT: 48 FT WITH  A/N: <del>490793</del> <u>526586</u>	D259			<b>HAP: (10) [40CFR 63 SUBPART CC, #2, <del>5-25-2001</del> <u>6-23-2003</u>]</b>	<del>B22.2,</del> <u>B22.x,</u> <u>C1.xx,</u> D90.10, <del>H23.7,</del> <u>H23.11,</u> K67.6 <u>K171.x</u>
FLOATING ROOF, PONTOON	B476				
PRIMARY SEAL, CATEGORY A, MECHANICAL SHOE	B477				
SECONDARY SEAL, CATEGORY A, RIM MOUNTED, WIPER TYPE	B478				
<u>GUIDEPOLE, GASKETED COVER, WITH FLOAT, WIPER, SLOTTED</u>	<u>BNEW1</u>				
STORAGE TANK, EXTERNAL FLOATING ROOF, 94-TK-9012, NAPHTHA, HYDROTREATED GAS OIL, GAS OIL, JET FUEL, GASOLINE, CRUDE OIL, DIESEL	D266			<b>HAP: (10) [40CFR 63 SUBPART CC, #2 <del>#3A,</del> <del>5-25-2001</del> <u>6-23-2003</u>]</b>	<u>B22.xx,</u> <u>C1.5, C1.x</u> <u>D90.10</u> D90.11, <del>H23.7,</del> <u>H23.11</u>

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Equipment	ID No.	Connected To	Source Type/ Monitoring Unit	Emissions And Requirements	Conditions
<b>Process 14 : STORAGE TANKS</b>					P13.1
FUEL, WELDED SHELL, 100000 BBL, DIAMETER: 127 FT 6 IN; HEIGHT: 48 FT WITH A/N: <del>315757</del> <u>526261</u>					<u>K171.x</u>
FLOATING ROOF, PONTOON	B497				
PRIMARY SEAL, LIQUID MOUNTED	B498				
SECONDARY SEAL, WIPER TYPE, RIM MOUNTED	B499				
<u>GUIDEPOLE, GASKETED COVER, WITH FLOAT, WIPER, SLOTTED</u>	<u>BNEW2</u>				

**CONDITIONS:**

The following permit conditions shall apply to the storage tank in order to comply with all applicable District, State, and Federal standards.

**PROCESS CONDITIONS**

P13.1 All devices under this process are subject to the applicable requirements of the following rules or regulations:

Contaminant	Rule	Rule/Subpart
Benzene	40CFR61, SUBPART	FF

[Processes subject to this condition: P1, P2, P3, P4, P5, P7, P8, P9, P10, P11, P12, P14]

[40CFR 61 Subpart FF, 12/04/03]

**SYSTEM CONDITIONS**

S13.5 All devices under this system are subject to the applicable requirements of the following rules or regulations:

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Contaminant	Rule	Rule/Subpart
VOC	District Rule	463
VOC	District Rule	1149
VOC	District Rule	1178

[Systems subject to this condition: Process 14, System 1, 2, 7]

**[RULE 1149, 7-14-1995; RULE 1149, 5-2-2008; RULE 1178, 4-7-2006; RULE 463, 5-6-2005]**

## DEVICE CONDITIONS

### B. Material/Fuel Type Limits

B22.2 The operator shall not use this equipment with materials having a(n) true vapor pressure of 0.5 psia or greater under actual operating conditions.

**[RULE 1301, 12-7-1995]**

[Devices subject to this condition: ~~D259~~, D274]

*Note: Condition B22.2 has been replaced by new condition B22.x Ultramar is requesting the vapor pressure of the material stored in storage tank 94-TK-9005 (D259) to be 0.5 psia or less.*

B22.x The operator shall only use this equipment with materials having a(n) true vapor pressure of 0.5 psia or less under actual operating conditions.

**[RULE 1301, 12-7-1995]**

[Devices subject to this condition: D259]

B22.xx The operator shall only use this equipment with materials having a(n) true vapor pressure of 9.9 psia or less under actual operating conditions.

**[RULE 1303(b)(2) – Offset, 5-10-1996; RULE 1303(b)(2) –Offset, 12-6-2002]**

[Devices subject to this condition: D266]

*Note: Ultramar is requesting the vapor pressure of the material stored in storage tank 94-TK-9012 (D266) to be reduced to 9.9 psia or less than from 11 psia.*

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### C. Throughput or Operating Parameter Limits

C1.5      The operator shall limit the throughput to no more than ~~1.095e+07 barrels in any one year~~ 10.95 MMBarrels in any one calendar year.

[**RULE 1303(b)(2) – Offset, 5-10-1996**; RULE 1303(b)(2) –Offset, 12-6-2002]

[Devices subject to this condition: D266]

C1.x      The operator shall limit the throughput to no more than 912,500 barrels in any one calendar month.

[**RULE 1313(g), 12-7-1995**]

[Devices subject to this condition: D266]

C1.xx      The operator shall limit the number of throughput to no more than 750,000 barrels in any one calendar month.

[**RULE 1303(b)(2)-Offset, 5-10-1996**; RULE 1303(b)(2)-Offset, 12-6-2002]

[Devices subject to this condition: D259]

### D. Monitoring/Testing Requirements

D90.10   The operator shall periodically monitor the vapor pressure of the material stored in this storage tank according to the following specifications:

The operator shall determine the true vapor pressure by one of the following methods: 1) record the tank contents and temperature once per month and use the organic liquid storage tank figure 7.1 series in AP-42; 2) sample and test the material stored, 3) derive the vapor pressure using engineering calculations, or 4) maintain on file a copy of the Material Safety Data Sheet (MSDS) of the material stored.

Records of materials stored and vapor pressure of the material stored, and their MSDS if applicable, shall be retained for a period of five years and made available to the Executive Officer upon request.

[**RULE 1303(b)(2)-Offset, 5-10-1996**; RULE 1303(b)(2)-Offset, 12-6-2002]

Devices subject to this condition: D217, D218, D221, D252, D256, D259, D260, D262, D264, D266, D272, D273, D274, D307, D309]

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D90.11 The operator shall monitor and record the throughput of this storage tank according to the following specifications:

The operator shall install and maintain an automatic tank level gauge (ATLG) and recorder to continuously record the vertical movement of the roof. For the purpose of this condition, continuous recording is defined as once per hour.

The operator shall calculate the throughput, in barrels, by the following equation:  $0.14 \times D \times D \times L$ , where D is the diameter of the tank in feet based on the tank strapping chart and L is the total vertical one-way roof travel in feet per month.

The operator shall calculate the total one-way roof movement, in feet, on a daily and monthly basis.

The ATLG installed shall be verified once per quarter by comparing against a manual tank level measurement. If the ATLG differs from the manual tank level measurement by more than 1.0 inch or 0.8%, whichever is greater, the ATLG shall be repaired and put back into service within 10 days. While the ATLG is being repaired, the throughput shall be determined by the hourly tank level data averaged from the previous 30 days prior to the discovery of the discrepancy.

In the event of a failure or routine maintenance of the ATLG, the ATLG shall be repaired (if necessary) and put back into service within 10 days of the time that the ATLG failed or was removed from service for maintenance. While the ATLG is being repaired or maintained, the throughput shall be determined by the hourly tank level data averaged from the previous 30 days prior to time that the ATLG went out of service.

[**RULE 1303(b)(2)-Offset, 5-10-1996; RULE 1303(b)(2)-Offset, 12-6-2002**]

Devices subject to this condition: D258, D266]

## H. Applicable Rules

H23.7 This equipment is subject to the applicable requirements of the following rules or regulations:

Contaminant	Rule	Rule/Subpart
VOC	40CFR60, SUBPART	K

[Devices subject to this condition: D255, D256, D257, D258, ~~D259~~, D260, D261, D262, D263, D264, D265, ~~D266~~]

[**40CFR 60 Subpart K, 10-17-2000**]

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*Note: Due to the modifications to storage tanks 94-TK-9005 (D259) and 94-TK-9012 (D266), the storage tanks will now be subject to 40 CFR 60 Subpart Kb.*

H23.11 This equipment is subject to the applicable requirements of the following rules or regulations:

Contaminant	Rule	Rule/Subpart
VOC	40CFR60, SUBPART	Kb

[Devices subject to this condition: D259, D266, D267, D448, D864, D868, D1460]

**[40CFR 60 Subpart Kb, 10-15-2003]**

#### **K. Recordkeeping/Reporting**

K67.6 The operator shall keep records, in a manner approved by the district, for the following parameter(s) or item(s):

Throughput and vapor pressure of stored liquid.

**[RULE 1178, 4-7-2006; RULE 3004(a)(4)-Periodic Monitoring, 12-12-1997; RULE 463, 5-6-2005]**

[Devices subject to this condition: D219, D220, D222, D223, D224, D234, D245, D253, D259, D269, D271, D274, D275, D276, D277, D278, D279, D283, D448, D864, D868, D974, D975, D979, D980, D981, D982]

K171.x The operator shall provide to the District the following items:

Final drawings and/or specifications of the slotted guidepole and other tank appurtenances upgrades to be installed/constructed shall be submitted to the District within 60 days after construction.

**[RULE 1178, 4-7-2006; RULE 463, 5-6-2005]**

[Devices subject to this condition: D259, D266]

#### **COMPLIANCE RECORD REVIEW:**

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A check of the AQMD Compliance Database shows that the facility has received three (3) Notices to Comply and 23 Notices of Violation since January 1, 2009. All but 3 of these NCs and NOV's have been closed according to the Compliance database. None of the NCs or NOV's issued since January 1, 2009 apply to the tanks submitted for modification.

**BACKGROUND:**

Ultramar, Inc. is a refinery in the city of Wilmington. The facility is a NO<sub>x</sub> and SO<sub>x</sub> RECLAIM, Title V facility. Ultramar submitted the applications listed in Table 1 to:

Storage tank # 94-TK-9005 (D259)

- Replace a unslotted guidepole with slotted guidepole; and
- Change the vapor pressure limit of the commodities stored from less than 0.5 psia to no more than 0.5 psia.

Storage tank 94-TK-9012 (D266)

- Replace a unslotted guidepole with slotted guidepole; and
- Include a vapor pressure limit of 9.9 psia on the commodities stored.

**Table 1 – AQMD Applications Submitted**

A/N	Date Submitted	Equipment	Device ID	Requested Action	Previous A/N
526586	08/12/2011	Storage Tank # 94-TK-9005 External Floating Roof	D259	Replace unslotted guidepole with a slotted guidepole; Change the condition of the vapor pressure limit of the commodity stored	190793 (D64247-Active)
526261	08/23/2011	Storage Tank # 94-TK-9012 External Floating Roof	D266	Replace unslotted guidepole with a slotted guidepole; Add condition limiting the vapor pressure of the commodity stored	315757 (F00844-Active)
526585	08/12/2011	Title V DeMinimis Significant Permit Revision	n/a	n/a	n/a
526262*	08/23/2011	Title V DeMinimis Significant Permit Revision	n/a	n/a	n/a

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\* This application was rejected on September 6, 2011 since it was not needed and no fees were submitted with this revision application.

**FEE EVALUATION:**

The fees paid for the applications submitted are as follows:

**Table 2 – Application Fees Submitted**

A/N	Equipment	BCAT	Type	Status	Fee Schedule	Fees Required, \$	Fees Paid, \$
526586	Storage Tank # 94-TK-9005 External Floating Roof	350904	50	20	C	\$3,359.43	\$3,359.43
526261	Storage Tank # 94-TK-9012 External Floating Roof	294900	50	20	C	\$3,359.43	\$5,039.15
526585	Title V DeMinimis Significant Permit Revision	555009	85	21	n/a	\$1,747.19	\$1,747.19
526262*	Title V DeMinimis Significant Permit Revision	555009	85	21	n/a	\$0.00	\$0.00
Total						\$8,466.05	\$10,145.77

\* This application was rejected on September 6, 2011 since it was not needed and no fees were submitted with this revision application.

**PROCESS DESCRIPTION:**

**Storage tank 95-TK-9005 (D259)** is a 150,000 barrel storage tank storing gas oil. The true vapor pressure, commodity, and throughput of the material stored for the past two years are shown in Table 3.

**Table 3. Storage Tank 94-TK-9005 (D259) Operational Data  
July 2009 - July 2011**

Month	TVP (psia)	Commodity	Throughput bbl
Jul-09	<0.1	Raw Gas Oil	489,268
Aug-09	<0.1	Raw Gas Oil	478,004
Sep-09	<0.1	Raw Gas Oil	511,395
Oct-09	<0.1	Raw Gas Oil	581,219
Nov-09	<0.1	Raw Gas Oil	175,607
Dec-09	<0.1	Raw Gas Oil	399,045

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Month	TVP (psia)	Commodity	Throughput bbl
Jan-10	<0.1	Raw Gas Oil	551,022
Feb-10	<0.1	Raw Gas Oil	550,958
Mar-10	<0.1	Raw Gas Oil	483,424
Apr-10	<0.1	Raw Gas Oil	477,507
May-10	<0.1	Raw Gas Oil	423,543
Jun-10	<0.1	Raw Gas Oil	356,630
Jul-10	<0.1	Raw Gas Oil	536,737
Aug-10	<0.1	Raw Gas Oil	516,606
Sep-10	<0.1	Raw Gas Oil	583,617
Oct-10	<0.1	Raw Gas Oil	622,794
Nov-10	<0.1	Raw Gas Oil	274,407
Dec-10	<0.1	Raw Gas Oil	558,152
Jan-11	<0.1	Raw Gas Oil	522,735
Feb-11	<0.1	Raw Gas Oil	448,988
Mar-11	<0.1	Raw Gas Oil	583,469
Apr-11	<0.1	Raw Gas Oil	361,674
May-11	NA	OOS: empty	0
Jun-11	NA	OOS: empty	0
Jul-11	NA	OOS: empty	0

OOS: Out-of-service

**Storage tank 95-TK-9012 (D266)** is a 100,000 barrel storage tank permitted to store naphtha, hydrotreated gas oil, gas oil, jet fuel, gasoline, crude oil, and diesel fuel. For the over 12 years now, Ultramar has only stored hydrotreated gas oil in this storage tank. The true vapor pressure, commodity, and throughput of the material stored for the past two years are shown in Table 4.

**Table 4. Storage Tank 94-TK-9012 (D266) Operational Data  
July 2009 - July 2011**

Month	TVP (psia)	Commodity	Throughput bbl
Jul-09	<0.1	HTGO	31,404
Aug-09	<0.1	HTGO	88,729
Sep-09	<0.1	HTGO	6,947
Oct-09	<0.1	HTGO	30,893
Nov-09	<0.1	HTGO	186,616
Dec-09	<0.1	HTGO	287,303
Jan-10	<0.1	HTGO	274,319

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Month	TVP (psia)	Commodity	Throughput bbl
Feb-10	<0.1	HTGO	107,883
Mar-10	<0.1	HTGO	185,137
Apr-10	<0.1	HTGO	80,486
May-10	<0.1	HTGO	50,759
Jun-10	<0.1	HTGO	149,671
Jul-10	<0.1	HTGO	127,363
Aug-10	<0.1	HTGO	55,974
Sep-10	<0.1	HTGO	13,550
Oct-10	<0.1	HTGO	46,063
Nov-10	<0.1	HTGO	422,030
Dec-10	<0.1	HTGO	91,398
Jan-11	<0.1	HTGO	105,220
Feb-11	<0.1	HTGO	30,080
Mar-11	<0.1	HTGO	94,420
Apr-11	<0.1	HTGO	70,187
May-11	<0.1	HTGO	60,860
Jun-11	<0.1	HTGO	97,706
Jul-11	<0.1	HTGO	11,282

HTGO: hydrotreated gas oil

**Guidepole Replacement**

Both storage tanks are currently outfitted with an unslotted guidepole. A guidepole is an anti-rotation device that is fixed to the top and bottom of the tank, passing through a well in the floating roof. The guidepole prevents adverse movement of the roof and thus prevents damage to the deck fittings and rim seals. The well has a sliding cover that can be gasketed, and the guidepole can be equipped with a wiper or sleeve to reduce evaporative losses. A guidepole is either slotted or unslotted. Ultramar is proposing to modify both storage tanks by replacing the existing unslotted guidepole with a slotted guidepole. The purpose of converting the unslotted guidepole to a slotted guidepole is to facilitate representative gauging and sampling, while making it safer for the operators. Currently, operators must gauge and sample the tank through the gauge hatch/sample well on the floating roof deck which can require fresh air. The existing unslotted guidepole, which was intended for antirotational protection, is not suitable for gauging and sampling since it is not slotted. Therefore, Ultramar proposes to install a new guidepole with slots to provide representative sampling and to relocate the guidepole to align it with the top of tank stairway to provide safer accessibility. The new slotted guidepole will replace the previous functions of both the gauge hatch/sample well and the unslotted guidepole.

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### Vapor Pressure Limit

In addition to the replacement of an unslotted guidepole with a slotted guidepole, Ultramar is also proposing to:

- Change the vapor pressure of the commodity stored in Storage Tank 95-TK-9005 (D259) from less than 0.5 psia to 0.5 psia or less. Condition B22.2 currently limits tank 95-TK-9005 (D259) to not store organic liquids having a vapor pressure of 0.5 psia or more. The past two years data and the data Ultramar submitted in their Rule 1178 plan (years 1999-2000 to 2002-2003) show the vapor pressure of the material stored never exceeded 0.5 psia.
- Limit the vapor pressure of the commodity stored in Storage Tank 95-TK-9012 (D266) to 9.9 psia or less. There is currently no vapor pressure limit for the commodity stored in this storage tank. The storage tank is permitted to store naphtha, hydrotreated gas oil, gas oil, jet fuel, gasoline, crude oil, and diesel fuel. Ultramar proposes to limit the true vapor pressure of the commodity stored to 9.9 psia or less. The true vapor pressure of gasoline stored at Ultramar is between 6-7 psia.

Tables 4 through 5 lists the current (pre-modification) and proposed (post-modification) storage tank specifications:

**Table 4 – Storage Tank # 94-TK-9005 (D259) Specifications**

	<b>External Floating Roof Tank Pre-Modification A/N 190973</b>	<b>External Floating Roof Tank Post-Modification A/N 526586</b>
<b>Tank Dimensions</b>		
Diameter, feet	156	156
Volume, gallons (barrels)	6,300,000 (150,000)	6,300,000 (150,000)
Throughput, barrels per year	9,000,000	9,000,000
Turnovers	60*	60*
<b>Paint Characteristics</b>		
Internal Shell Condition	Light Rust	Light Rust
Shell Color/Shade	White/White	White/White
Shell Condition	Good	Good
<b>Tank Construction and Rim-Seal System</b>		
Construction:	Welded	Welded
Primary Seal:	Mechanical Shoe	Mechanical Shoe
Secondary Seal:	Rim-mounted	Rim-mounted
<b>Liquid Contents</b>		
Mixture/Component	Gas oil, vapor pressure < 0.5 psia**	Gas oil, vapor pressure ≤ 0.5 psia
<b>Roof Characteristics</b>		

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	<b>External Floating Roof Tank Pre-Modification A/N 190973</b>	<b>External Floating Roof Tank Post-Modification A/N 526586</b>
Type	Pontoon	Pontoon
Deck Fittings/Status	<ul style="list-style-type: none"> <li>• 1-Access Hatch (24-in Dia.)/Bolted Cover, Gasketed</li> <li>• 1-Gauge-Hatch/Sample Well (8-in Dia.)/Weighted Mech. Actuation, Gasketed</li> <li>• 26-Roof Leg (3-in Dia.)/Adjustable, Pontoon Area, Sock</li> <li>• 50-Roof Leg (3-in Dia.)/Adjustable, Center Area, Sock</li> <li>• 2- Vacuum Breaker (10 in Dia.)/Weighted Mech. Actuation, Gasketed</li> <li>• 1-Unslotted Guidepole Well/Gasketed Sliding Cover with Wiper</li> </ul>	<ul style="list-style-type: none"> <li>• 1-Access Hatch (24-in Dia.)/Bolted Cover, Gasketed</li> <li>• 1-Gauge-Hatch/Sample Well (8-in Dia.)/Weighted Mech. Actuation, Gasketed</li> <li>• 26-Roof Leg (3-in Dia.)/Adjustable, Pontoon Area, Sock</li> <li>• 50-Roof Leg (3-in Dia.)/Adjustable, Center Area, Sock</li> <li>• 2- Vacuum Breaker (10 in Dia.)/Weighted Mech. Actuation, Gasketed</li> <li>• <del>1-Unslotted Guidepole Well/Gasketed Sliding Cover with Wiper</del></li> <li>• <u>1-Slotted Guidepole Well/Gasketed Sliding Cover with Float, Wiper</u></li> </ul>

\* There is currently no turnover limit on the tank. The number of turnovers was taken from the evaluation in previous A/N 190793 (Permit # D64247).

\*\* Condition B22.2 limits the vapor pressure of the material stored to be less than 0.5 psia.

**Table 5 – Storage Tank # 94-TK-9012 (D266) Specifications**

	<b>External Floating Roof Tank Pre-Modification A/N 315757</b>	<b>External Floating Roof Tank Post-Modification A/N 526261</b>
<b>Tank Dimensions</b>		
Diameter, feet	127.5	127.5
Volume, gallons (barrels)	4,200,000 (100,000)	4,200,000 (100,000)
Throughput, barrels per year	10,950,000 (Condition C1.5)	10,950,000 (Condition C1.5)
Turnovers	109.5	109.5
<b>Paint Characteristics</b>		
Internal Shell Condition	Light Rust	Light Rust
Shell Color/Shade	White/White	White/White
Shell Condition	Good	Good
<b>Tank Construction and Rim-Seal System</b>		
Construction:	Welded	Welded
Primary Seal:	Mechanical Shoe	Mechanical Shoe
Secondary Seal:	Rim-mounted	Rim-mounted
<b>Liquid Contents</b>		

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	External Floating Roof Tank Pre-Modification A/N 315757	External Floating Roof Tank Post-Modification A/N 526261
Mixture/Component	Naphtha, hydrotreated gas oil, gas oil, jet fuel, gasoline, crude oil, diesel fuel; Maximum Vapor pressure < 11 psia	Naphtha, hydrotreated gas oil, gas oil, jet fuel, gasoline, crude oil, diesel fuel; Maximum Vapor pressure < <del>11 psia</del> <u>9.9 psia</u>
<b>Roof Characteristics</b>		
Type	Pontoon	Pontoon
Deck Fittings/Status	<ul style="list-style-type: none"> <li>• 1-Access Hatch (24-in Dia.)/Bolted Cover, Gasketed</li> <li>• 1-Gauge-Hatch/Sample Well (8-in Dia.)/Weighted Mech. Actuation, Gasketed</li> <li>• 22-Roof Leg (3-in Dia.)/Adjustable, Pontoon Area, Sock</li> <li>• 30-Roof Leg (3-in Dia.)/Adjustable, Center Area, Sock</li> <li>• 2- Vacuum Breaker (10 in Dia.)/Weighted Mech. Actuation, Gasketed</li> <li>• 1-Unslotted Guidepole Well/Gasketed Sliding Cover with Wiper</li> </ul>	<ul style="list-style-type: none"> <li>• 1-Access Hatch (24-in Dia.)/Bolted Cover, Gasketed</li> <li>• 1-Gauge-Hatch/Sample Well (8-in Dia.)/Weighted Mech. Actuation, Gasketed</li> <li>• 22-Roof Leg (3-in Dia.)/Adjustable, Pontoon Area, Sock</li> <li>• 30-Roof Leg (3-in Dia.)/Adjustable, Center Area, Sock</li> <li>• 2- Vacuum Breaker (10 in Dia.)/Weighted Mech. Actuation, Gasketed</li> <li>• <del>1-Unslotted Guidepole Well/Gasketed Sliding Cover with Wiper</del></li> <li>• <u>1-Slotted Guidepole Well/Gasketed Sliding Cover with Float, Wiper</u></li> </ul>

**EMISSIONS:**

As noted above, Ultramar submitted A/Ns 526586 and 526261 to replace the existing unslotted guidepole with a slotted one and change/include a vapor pressure limit on the commodities stored for Storage Tank # 94-TK-9005 (D259) and Storage Tank # 94-TK-9012 (D266). Emissions from an external floating roof tanks consists of evaporative losses from the rim-seal and deck-fitting (a.k.a. standing storage loss) and any exposed liquid on the tank walls (withdrawal losses). For Tank # 94-TK-9005 (D259), the pre-modification emissions were based on the actual throughput that occurred during the past two years (i.e., past two-year average) and calculated using EPA's Tank 4.0.9d program. This tank was found to be a previously exempt Rule 219 storage tank that was permitted in 1989 after the amendment to Rule 219 in 1988. Therefore, no emissions for this equipment were accounted for in NSR. The post-modification emissions for 94-TK-9005 (D259) were estimated using EPA's Tank 4.0.9d program. For Storage Tank # 94-TK-9012 (D266) which is a post-NSR tank, the pre-modification and post-modification emissions were also estimated using EPA's Tank 4.0.9d program. The total emissions for both emissions are summarized in Table 6.

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**Table 6. VOC Emissions**

A/N	Tank #	Device ID #	Pre-Modification: Unslotted guidepole				Post-Modification: Slotted guidepole				Emission Change		
			Limit	VOC Emissions			Limit	VOC Emissions			VOC Emissions		
				lbs/year	lbs/day	lbs/hr		lbs/year	lbs/day	lbs/hr	lbs/year	lbs/day	lbs/hr
526586	94-TK-9005	D259	>0.5 psia	597.39*	1.66	0.069	60 turnovers; ≥0.5 psia	1,816.88	5.04	0.21	+721.66	+3.38	+0.141
526261	94-TK-9012	D266	10,950,000 bbls/year 11 psia	11,759.61	32.67	1.36	10,950,000 bbls/year; 9.9 psia	11,788.42	32.75	1.36	+28.81	+ 0.08	+0.00

- Based on past two-year average throughput and commodity stored (true vapor pressure 0.1 psia)

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The past two-year average for 94-TK-9005 (D259) and detailed Tank 4.0.9d outputs for both tanks are provided in the Appendix A. The tanks are already equipped with primary and secondary seals.

**RULES EVALUATION:**

**PART 1 SCAQMD REGULATIONS**

<b>Rule 212</b>	<b>Standards for Approving Permits</b>	<b>November 14, 1997</b>
	<p>This proposed modification meets all criteria in Rule 212 for permit approval. The modifications are designed so it can be expected to operate without emitting air contaminants in violation of Division 26 of the State Health and Safety Code or in violation of AQMD's rules and regulations.</p> <p>The storage tank modifications do not constitute a significant project because (1) the permit unit is not located within 1000 feet of a school; (2) the emissions increase does not exceed the daily maximum specified in subdivision (g) of this rule (30 lbs/day); and (3) the permit unit does not have an increased cancer risk greater than, or equal to, one in a million (<math>1 \times 10^{-6}</math>) during a lifetime of 70 years or pose a risk of nuisance.</p>	
<b>Rule 402</b>	<b>Nuisance</b>	<b>May 7, 1976</b>
	<p>Nuisance complaints associated with the above project are not expected under normal operating conditions.</p>	
<b>Rule 463</b>	<b>Organic Liquid Storage</b>	<b>May 6, 2005</b>
463(a)	<p>Applicability. This rule applies to any aboveground tank with capacity 19,815 gallons or greater for storing organic liquids. Both tanks 94-TK-9005 (D259) and 94-TK-9012 (D266) are aboveground tank with capacity greater than 19,815 gallons for storing organic liquids. Therefore, these two tanks are subject to this rule.</p>	
463(c)	<p>Tank Roof Requirements.</p>	
463(c)(1)	<p>External Floating Roof. Both tanks 94-TK-9005 (D259) and 94-TK-9012 (D266) have external floating roof consisting of a pontoon-type cover and are equipped with both primary and secondary seal. The primary seal is a liquid mounted mechanical shoe and the secondary seal is rim-mounted wiper type. Therefore, the tanks comply with the tank roof requirements.</p>	
463(d)	<p>Other Performance Requirements.</p>	

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<b>Rule 463</b>	<b>Organic Liquid Storage</b>	<b>May 6, 2005</b>
463(d)(1)	<p>This subparagraph applies to storage tank that store gasoline.</p> <p>Storage tank 94-TK-9005 (D259) does not store gasoline. Therefore, this paragraph does not apply to this tank.</p> <p>Storage tank 94-TK-9012 (D266) currently does not store gasoline but is permitted to store gasoline. The tank has not stored gasoline for more than 12 years. Ultramar cannot store gasoline in this tank unless they dome the tank. Since this tank did store gasoline at one time, the tank is equipped with two weighted mechanical actuated gasketed vacuum breakers that can be set within 10% of the maximum allowable working pressure of the tank in accordance with (d)(1).</p>	
463(d)(2)	<p>Both storage tanks 94-TK-9005 (D259) and 94-TK-9012 (D266) shall float on the organic liquid at all time except when the tank is being completely emptied for cleaning, or repair.</p>	
463(d)(3)	<p>This subparagraph applies to storage tank that are refilled with gasoline.</p> <p>Storage tank 94-TK-9005 (D259) does not store gasoline. Therefore, this paragraph does not apply to this tank.</p> <p>Storage tank 94-TK-9012 (D266) currently does not store gasoline. Ultramar cannot refill the tank with gasoline in this tank unless they dome the tank. The tank has not stored gasoline in over 12 years.</p>	
463(d)(4)	<p>The tanks will not store organic liquids having a true vapor pressure of 11 psia (569 mm Hg) or greater under actual storage conditions. Storage tank 94-TK-9005 (D259) is limited to store materials 0.5 psia or less. Storage tank 94-TK-9012 (D266) is limited to store material 9.9 psia or less.</p>	
463(d)(5)	<p>Both tanks already have seals on the current list of seals approved by the Executive Officer. Compliance is continued to be expected.</p>	
463(d)(6)	<p>The organic liquids stored in these tanks should be in compliance with the appropriate vapor pressure limits provided the actual storage temperature does not exceed the corresponding maximum temperature listed in the Addendum of this rule.</p>	
	<p>Compliance with Rule 463 is expected with proper recordkeeping and inspections. Ultramar submitted an updated Rule 463 inspection and maintenance plan on September 2, 2011 (A/N 526461).</p>	

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<b>Rule 1149</b>	<b>Storage Tank Cleaning and Degassing</b>	<b>May 2, 2008</b>
	<p>The tanks being modified are subject to the tank cleaning and degassing requirements of this rule. For storage tank 94-TK-9005 (D259), this tank was degassed on April 16, 2011. In accordance with 1149(c)(2), the gaseous VOC concentration within the tank was reduced to less than 5,000 ppmv, measured as methane, for at least one hour after the degassing operation ceased. According to the Degas Completion Certifications performed by Envent Corporation, the VOC concentration was reduced to 790 ppmv, measured as methane, at one hour after the degassing operation ceased.</p> <p>Compliance is continued to be expected.</p>	

<b>Rule 1178</b>	<b>Further Reduction of VOC Emissions from Storage Tanks at Petroleum Facilities</b>	<b>April 7, 2006</b>
1178(b)	<p>Applicability. This rule applies to all aboveground storage tanks with capacity greater than 19,818 gallons and used to store organic liquids with true vapor pressure greater than 0.1 psi and located at any petroleum facility emitting more than 20 tons per year of VOC in any emission inventory year starting with emission inventory year 2000. Both storage tanks 94-TK-9005 (D259) and 94-TK-9012 (D266) are greater than 19,818 gallons and used to store organic liquids with true vapor pressure greater than 0.1 psi and are located at a refinery emitting greater than 20 tons per year of VOC in year 2000. Therefore, the tanks are subject to Rule 1178.</p>	
1178(d)(1)(A)	<p>The external floating roof tanks store materials with vapor pressure less than 3 psia. The tanks are or will be equipped with all the specifications listed in (d)(1)(A):      ✓ = Complies</p>	
	Specification	94-TK-2005 (D259)
	(i) Equip each access hatch and gauge float well with a cover that is gasketed and bolted. The cover shall be closed at all times, with no visible gaps, except when the hatch or well must be opened for access.	✓
	(ii) Equip each gauge hatch/sample well with a cover that is gasketed. The cover shall be closed at all times, with no visible gaps, except when the hatch or well must be opened for access.	✓
	(iii) Gasket or cover each adjustable roof leg with a VOC impervious sock at all times when the roof is floating.	✓

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<b>Rule 1178</b>	<b>Further Reduction of VOC Emissions from Storage Tanks at Petroleum Facilities</b>		<b>April 7, 2006</b>
Specification	94-TK-2005 (D259)	94-TK-9012 (D266)	
(iv) Gasket each rim vent. Rim vents shall be closed at all times, with no visible gaps, when the roof is floating; and shall be set to open only when the roof is being floated off the roof leg supports or when the pressure beneath the rim seal exceeds the manufacturer's recommended setting.	n/a no rim vent	n/a no rim vent	
(v) Gasket each vacuum breaker. Vacuum breakers shall be closed at all times, with no visible gaps, when the roof is floating; and shall be set to open only when the roof is being floated off or is being landed on the roof leg supports.	✓	✓	
(vi) Equip each open floating roof drain with a slotted membrane fabric cover that covers at least 90 % of the area of the opening.	n/a; no open floating roof drain	n/a; no open floating roof drain	
(vii) Equip each unslotted guidepole well with a gasketed sliding cover and a flexible fabric sleeve or wiper.	n/a; no unslotted guidepole	n/a; no unslotted guidepole	
(viii) Equip each unslotted guidepole with a gasketed cover at the end of the pole. The cover shall be closed at all times, with no visible gaps, except when gauging or sampling.	n/a; no unslotted guidepole	n/a; no unslotted guidepole	
(ix) Equip each slotted guidepole with a gasketed cover, a pole wiper and a pole sleeve. The pole sleeve shall be extended into the stored liquid.	n/a; no pole sleeve	n/a; no pole sleeve	
(x) Equip each slotted guidepole having a pole float with a gasketed cover, a pole wiper, and a pole float wiper. The wiper or seal of the pole float shall be at or above the height of the pole wiper.	✓	✓	
(xi) Cover each slotted guidepole opening with a gasketed cover at all times, with no visible gaps, except when the cover must be opened for access.	✓	✓	
(xii) Maintain the pole float in a condition such that it floats within the guidepole at all times except when it must be removed for sampling or when the tank is empty.	✓	✓	
(xiii) Except for vacuum breakers and rim vents, ensure that each opening in the external floating roof shall provide a projection below the liquid surface.	✓	✓	

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<b>Rule 1178</b>		<b>Further Reduction of VOC Emissions from Storage Tanks at Petroleum Facilities</b>		<b>April 7, 2006</b>
Specification		94-TK-2005 (D259)	94-TK-9012 (D266)	
(xiv) Except for vacuum breakers, rim vents, roof drains, and leg sleeves, equip all other openings in the roof with a gasketed cover or seal which is closed at all times, with no visible gaps, except when the cover or seal must be opened for access.		✓	✓	
1178(d)(1)(B)	The external floating roof tanks store materials with vapor pressure less than 3 psia. The tanks are equipped with all the specifications listed in (d)(1)(B): ✓ = Complies			
Specification		94-TK-2005 (D259)	94-TK-9012 (D266)	
(i) The primary seal shall be a mechanical shoe or liquid mounted.		✓	✓	
(ii) The secondary seal shall be rim mounted and shall not be attached to the primary seal.		✓	✓	
(iii) Gaps between the tank shell and the primary seal shall not exceed 1/2 inch for a cumulative length of 30 % of the circumference of the tank, and 1/8 inch for 60 % of the circumference of the tank. No gap between the tank shell and the primary seal shall exceed 1-1/2 inches. No continuous gap between the tank shell and the primary seal greater than 1/8 inch shall exceed 10 % of the circumference of the tank.		✓	✓	
(iv) Gaps between the tank shell and the secondary seal shall not exceed 1/8 inch for a cumulative length of 95 % of the circumference of the tank. No gap between the tank shell and the secondary seal shall exceed 1/2 inch.		✓	✓	
(v) Mechanical shoe primary seals shall be installed so that one end of the shoe extends into the stored organic liquid and the other end extends a minimum vertical distance of 24 inches above the stored organic liquid surface.		✓	✓	
(vi) The geometry of the shoe shall be such that the maximum gap between the shoe and the tank shell is no greater than double the gap allowed by the seal gap criteria specified in clause (d)(1)(B)(iii) for a length of at least 18 inches in the vertical plane above the liquid surface.		✓	✓	

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<b>Rule 1178</b>	<b>Further Reduction of VOC Emissions from Storage Tanks at Petroleum Facilities</b>	<b>April 7, 2006</b>	
Specification	94-TK-2005 (D259)	94-TK-9012 (D266)	
(vii) The primary seal envelope shall be made available for unobstructed inspection by the Executive Officer along its circumference.	✓	✓	
(viii) The secondary seal shall be installed in a way that permits the Executive Officer to insert probes up to 1-1/2 inches in width to measure gaps in the primary seal.	✓	✓	
(ix) There shall be no holes, tears or openings in the secondary seal or in the primary seal envelope surrounding the annular vapor space enclosed by the roof edge, seal fabric, and secondary seal.	✓	✓	
(x) Except during the preventive maintenance, repair, or inspection periods specified in subdivision (f) and (g) of this rule that do not exceed 72 hours with prior notification to the Executive Officer, both the primary seal and the secondary seal shall cover the annular space between the external floating roof and the wall of the storage tank in a continuous fashion, with no visible gaps.	✓	✓	
(xi) The operator shall use a rim seal system that is identified on the current list of seals approved by the Executive Officer.	✓	✓	
1178(d)(2)	<p>Domed External Floating Roof Tanks. This subparagraph applies to a facility with annual VOC emissions exceeding 20 tons for year 2000 and after and to external floating roof tanks containing organic liquids having true vapor pressure greater than 3 psia.</p> <p>Both storage tanks 94-TK-9005 (D259) and 94-TK-9012 (D266) contain organic liquids having true vapor pressure less than 3 psia. See Tables 3 and 4 under Process Description for the vapor pressure of the material stored in these tanks during the past two years. Both tanks have stored materials less than 0.1 psia for the past two years and have not stored materials greater than 3 psia in over 12 years (even before Rule 1178 was adopted). As a result, a dome is not required at this time.</p> <p>In addition, Rule 1178(j)(5) exempts tanks from the doming requirements of paragraph (d)(2) if the tank has a permit condition that limits the true vapor pressure of the organic liquids stored in the tank lower than 3 psia. Storage tank</p>		

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<b>Rule 1178</b>	<b>Further Reduction of VOC Emissions from Storage Tanks at Petroleum Facilities</b>	<b>April 7, 2006</b>
	<p>94-TK-9005 (D259) is limited to store materials 0.5 psia or less. Therefore, the tank is exempt from the doming requirements of subparagraph (d)(2). Storage tank 94-TK-9012 (D266) is limited to store material 9.9 psia or less. Before this tank can store materials greater than 3 psia, the refinery must dome this tank and abide by the requirements of Rule 1178(d)(2).</p>	
1178(d)(5)	<p>Internal Floating Roof Tanks. The tanks are not internal floating roof tanks.</p>	
1178(d)(4)	<p>Fixed Roof. The tanks are not fixed roof tanks.</p>	
1178(d)(5)	<p>This subparagraph applies to facilities with annual VOC emissions exceeding 20 tons for any emission inventory year subsequent to 2000. Ultramar exceeded the 20 ton threshold before 2000.</p>	
1178(d)(6)	<p>Newly tanks constructed issued Permits to Construct and Operate on and after January 1, 2002. According to Ultramar, both storage tanks 94-TK-9005 (D259) and 94-TK-9012 (D266) were constructed in 1980 and issued permits well before 2002.</p>	

<b>REG XIII</b>	<b>New Source Review (NSR)</b>	<b>December 6, 2002</b>																					
		<b>Application Deem Complete Year: 2011</b>																					
	<p>Both tanks were subject to New Source Review since they were all constructed in 1980. Table 8 is a comparison of the emission currently in NSR for the previous applications and the pre-modification and post-modification emissions.</p>																						
	<b>Table 8. NSR Emissions</b>																						
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Storage Tank</th> <th style="text-align: center;">Device ID</th> <th style="text-align: center;">NSR Emission, lbs/day</th> <th style="text-align: center;">Pre-Modification Emissions*, lbs/day</th> <th style="text-align: center;">Post-Emission Emissions*, lbs/day</th> <th style="text-align: center;">Emission Increase, lbs/day</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">94-TK-9005</td> <td style="text-align: center;">D259</td> <td style="text-align: center;">24**</td> <td style="text-align: center;">1.66***</td> <td style="text-align: center;">5.04</td> <td style="text-align: center;">+3.38</td> </tr> <tr> <td style="text-align: center;">94-TK-9012</td> <td style="text-align: center;">D266</td> <td style="text-align: center;">62****</td> <td style="text-align: center;">32.67</td> <td style="text-align: center;">32.75</td> <td style="text-align: center;">+ 0.08</td> </tr> </tbody> </table>					Storage Tank	Device ID	NSR Emission, lbs/day	Pre-Modification Emissions*, lbs/day	Post-Emission Emissions*, lbs/day	Emission Increase, lbs/day	94-TK-9005	D259	24**	1.66***	5.04	+3.38	94-TK-9012	D266	62****	32.67	32.75	+ 0.08
Storage Tank	Device ID	NSR Emission, lbs/day	Pre-Modification Emissions*, lbs/day	Post-Emission Emissions*, lbs/day	Emission Increase, lbs/day																		
94-TK-9005	D259	24**	1.66***	5.04	+3.38																		
94-TK-9012	D266	62****	32.67	32.75	+ 0.08																		
	<p>* Calculated using EPA Tanks 4.0.9d software</p> <p>** A/N 190793: This was a previously Rule 219 exempt storage tank. Therefore, no emissions were accumulated in NSR for this tank. The 24 lbs/day were incorrectly added.</p> <p>*** In accordance with Rule 1306(c)(1), the pre-modification emissions for 94-TK-9005 were based on the throughput for the previous 2-years.</p>																						

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<b>REG XIII</b>	<b>New Source Review (NSR)</b>  <b>December 6, 2002</b>  <b>Application Deem Complete Year: 2011</b>
	<p>**** A/N 315757</p> <p>For Tank 94-TK-9012, the discrepancy between the NSR emissions for the previous application and the current pre-modification and post-modification emissions is due to the differences in the estimation methodology. The emissions for the previous applications were based on the estimation methodology utilized at the time the permit was issued and the current emissions are based on EPA Tanks 4.0.9d software.</p> <p>As noted in Table 8, there is an emission increase for Tank 94-TK-9005. For Tank 94-TK-9012, the emission increase is less than 0.5 lbs/day with the proposed modification.</p>
<b>1303(a)</b>	Best Available Control Technology (BACT). BACT is required when there is an emission increase of 1 lb/day. The latest BACT is not required for 94-TK-9012 (D266) since the emission increase is less than 1 lb/day. BACT is required for 94-TK-9005 (D259) since the emission increase is greater than 1 lb/day. The tanks are all equipped with primary and secondary seals. A dome is not required since the tanks do not store materials with vapor pressure greater than 3 psia. Should the tank store materials with vapor pressure greater than 3 psia, the refinery would have to dome the tanks unless they conditioned the tank to store only liquids with vapor pressure lower than 3 psia.
<b>1303(b)</b>	Modeling. Air quality modeling for VOC is not required.
<b>1303(b)(2)</b>	Emission Offsets. For tank 94-TK-9012 (D266), the emission increase is 0.08 lbs/day. For storage tank 94-TK-9005 (D259), the emission increase is 3.38 lbs/day. Since the emission increase is greater than 0.5 lbs/day, offsets are required for tank 94-TK-9005 (D259).
<b>1303(b)(3)</b>	Sensitive Zone Requirements. ERCs are required for 94-TK-9005 (D259). Ultramar will use ERC Certificate # AQ005122 to offset the emissions.
<b>1303(b)(4)</b>	Facility Compliance. This facility complies with all applicable District rules and regulations.
<b>1303(b)(5)</b>	Major Polluting Facilities. A new major polluting facility or major modification at an existing major polluting facility shall comply with the requirements of this paragraph. This refinery is an existing major polluting facility and the project is a major modification. Rule 1302(r) defines (in part) a major modification as any modification "... at an existing major polluting facility that will cause; <ol style="list-style-type: none"> <li>1) an increase of <u>one</u> pound per day or more, of the facility's potential to emit oxides of nitrogen (NOx) or volatile organic compounds (VOCs), provided</li> </ol>

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<b>REG XIII</b>	<b>New Source Review (NSR)</b>	<b>December 6, 2002</b>  <b>Application Deem Complete Year: 2011</b>
	<p>the facility is located in the South Coast Air Basin (SOCAB) , ...”</p> <p>The emission increase of VOC is greater than 1 lb/day for 94-TK-9005 (D259). Therefore, the requirements in this paragraph apply.</p> <p>(A) <i>Alternative Analysis. Submit an analysis of alternative sites, sizes, production processes, and environmental control techniques for the proposed source.</i></p> <p>See discussion under subparagraph (b)(5)(D) below.</p> <p>(B) <i>Statewide Compliance. Demonstrate that all major sources in the state under control of the applicant are in compliance or on a schedule for compliance with all applicable federal emissions standards.</i></p> <p>Ultramar has certified that all major sources in the state under control of the applicant are in compliance or on schedule for compliance with all applicable federal emissions standards. Ultramar (Valero, Inc.) currently operates 7 major facilities in the state.</p> <p>(C) <i>Protection of Visibility. Conduct a modeling analysis for plume visibility if the net emission increase from the new or modified source exceeds 15 tons/year of PM or 40 tons/year of NOx; and the location of the source is within specified distance from a Class I area.</i></p> <p>The emissions from the storage tank are VOC emissions. In addition, the Ultramar refinery is not within the distance specified in Table C-1 of this rule of a Class I area. The refinery is more than 32 km from any Federal Class I Area. The nearest Federal Class I Area (San Gabriel Wilderness) is more than 65 km away, while the furthest Federal Class I Area (Joshua Tree Wilderness) is more than 170 km away. Therefore, a modeling analysis for plume visibility is not required for this project.</p> <p>(D) <i>Compliance Through California Environmental Quality Act.</i></p> <p>(i) The facility submitted Form 400-CEQA and has determined that the proposed project (replacement of unslotted guidepole with slotted guidepole) is exempt from CEQA since it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment (general rule exemption). Therefore, subparagraph (b)(5)(A) shall not apply to this project.</p>	

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<b>REG XIII</b>	<b>New Source Review (NSR)</b>	<b>December 6, 2002</b>
		<b>Application Deem Complete Year: 2011</b>
	Therefore, compliance of Rule 1303(b)(5) is expected.	

<b>Rule 1401</b>	<b>New Source Review of Toxic Air Contaminants</b>	<b>March 4, 2005</b>				
	<p>In accordance with Rule 1401(f)(3), to determine the maximum individual cancer risk (MICR), cancer burden and <i>chronic</i> health index (HIC) due to a modified permit unit, the <u>increase</u> in emissions from the modified permit unit shall be calculated based on the difference between the total permitted emissions after the modification, calculated pursuant to the criteria established in subparagraphs:</p> <p>(f)(1)(A), the maximum rated capacity;  (f)(1)(B), the maximum possible annual hours of operation;  (f)(1)(C), the maximum annual emissions; and  (f)(1)(D), the physical characteristics of the materials processed,</p> <p>and the total permitted emissions prior to the modification as stated in the permit condition [Subparagraph (f)(3)(A)].</p> <p>In accordance with Rule 1401(f)(4), to determine the <i>acute</i> health index (HIA) due to a modified permit unit, the <u>total</u> emissions from the permit unit shall be calculated on a based on permit conditions which directly limit the emissions.</p> <p>As a result, the Tier 2 risk assessment calculations were conservatively conducted to estimate the health risks associated using the <u>total</u> post-modification emissions from the permit unit based on permit conditions which directly limit the emissions.</p> <p>The MICR and HIA and HIC for both off-site worker and residential receptors are shown below in Table 9. The Tier 2 Screening Risk Assessments are shown in Appendix B. All the calculated MICR and HIs for the each target organ were below the Rule 1401 risk thresholds. Therefore, the proposed modifications comply with Rule 1401.</p>					
	<b>Table 9 - Rule 1401 Emissions and Summary</b>					
	<table border="1" style="width: 100%;"> <tr> <th colspan="2" style="text-align: center;">Air Toxic Emissions</th> </tr> <tr> <th style="width: 50%;">Toxic Air Contaminant</th> <th style="width: 50%;">Post Modification Emissions, lbs/year</th> </tr> </table>		Air Toxic Emissions		Toxic Air Contaminant	Post Modification Emissions, lbs/year
Air Toxic Emissions						
Toxic Air Contaminant	Post Modification Emissions, lbs/year					

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<b>Rule 1401</b>	<b>New Source Review of Toxic Air Contaminants</b>				<b>March 4, 2005</b>
		94-TK-9005 D259	94-TK-9012 D266		
	Benzene	0.8736	17.472		
	Toluene	0.8648	864.864		
	Ethylbenzene	0.007	288.288		
	Hexane (-n)	39.312	43,155.84		
	1,2,4-Trimethylbenzene	2.20	--		
	Xylene (-m)	0.8803	786.24		
	Naphthalene	--	25.68		
<b>Risk Summary</b>					
	Commodity	Scenario	MICR	HI <sub>Acute</sub> , HIA	HI <sub>Chronic</sub> , HIC
	94-TK-9005 D259	Worker	3.58x10 <sup>-9</sup>	6.64x10 <sup>-6</sup>	1.46x10 <sup>-6</sup>
		Residential	1.52x10 <sup>-9</sup>	6.61x10 <sup>-7</sup>	1.76x10 <sup>-5</sup>
	<b>Maximum Risk</b>		3.58x10 <sup>-9</sup>	6.64x10 <sup>-6</sup>	1.76x10 <sup>-5</sup>
	Rule 1401 Risk Thresholds		1 x10 <sup>-6</sup>	1	1
			Pass	Pass	Pass
	94-TK-9012 D266	Worker	1.45x10 <sup>-7</sup>	4.75x10 <sup>-4</sup>	2.42x10 <sup>-3</sup>
		Residential	7.4x10 <sup>-8</sup>	5.62x10 <sup>-5</sup>	6.32x10 <sup>-4</sup>
	<b>Maximum Risk</b>		1.45x10 <sup>-7</sup>	4.75x10 <sup>-4</sup>	2.42x10 <sup>-3</sup>
	Rule 1401 Risk Thresholds		1 x10 <sup>-6</sup>	1	1
			Pass	Pass	Pass
Federal NSR for toxics does not apply since this is not considered a reconstruction per 40CFR63, Subpart A, §63.2.					

<b>Regulation XXX</b>	<b>Title V</b>	<b>March 16, 2001</b>
	<p>Ultramar is a designated as a Title V facility. The Title V permit was issued on May 29, 2009. Therefore, the facility is now subject to the requirements of Reg XXX.</p> <p>There is an emission increase of VOC associated with the modifications to storage tanks 94-TK-9005 (D259) and 94-TK-9012 (D266). These applications are subject to the requirements of a De Minimis Significant Permit Revision [Rule 3000(b)(7)], which is any Title V permit revision where the cumulative emission increases of non-RECLAIM pollutants or hazardous air pollutants (HAP) from these permit revisions during the term of the permit are not greater than any of the emission threshold levels listed below:</p>	

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De Minimis Emission Threshold Level	
<u>Air Contaminant</u>	DE MINIMIS Daily Maximum <u>in Pounds Per Day</u>
HAP	30
VOC	30
NO <sub>x</sub>	40
PM-10	30
SO <sub>x</sub>	60
CO	220

The cumulative emission increase since May 29, 2009 is as follows:

Air Contaminant	Prior revisions, lbs/day	This revision, lbs/day	Total, lbs/day	Threshold level, lbs/day
VOC	0.048	3.46	3.508	30
CO	48	0	48	220

A De Minimis Significant Permit Revision shall also meet the requirements of clauses (b)(15)(A)(i), (ii), (iii), (iv), (vii), (viii) and (ix) of Rule 3000.

3000 (b)(15)(A)(i)	This revision does not require or change a case-by-case evaluation of: reasonably available control technology (RACT) pursuant to Title I of the federal Clean Air Act; or maximum achievable control technology (MACT) pursuant to 40 CFR Part 63, Subpart B.
(b)(15)(A)(ii)	This revision does not violate a regulatory requirement.
(b)(15)(A)(iii)	This revision does not require any significant change in monitoring terms or conditions in the permit.
(b)(15)(A)(iv)	This revision does not require relaxation of any recordkeeping, or reporting requirement, or term, or condition in the permit.
(b)(15)(A)(vii)	This revision does not result in an increase of GHG emissions of > 75,000 tpy CO <sub>2</sub> e.
(b)(15)(A)(viii)	This revision does not establish or change a permit condition that the facility has assumed to avoid an applicable requirement.
(b)(15)(A)(ix)	This revision is not an installation of a new permit unit subject to a New Source Performance Standard (NSPS) pursuant to 40 CFR Part 60, or a National Emission Standard for Hazardous Air Pollutants (NESHAP) pursuant to 40 CFR Part 61 or 40 CFR Part 63.

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A De Minimis Significant Permit Revision is subject to a 45-day EPA review, Rule 3003(j), and not subject to public participation requirements, Rule 3006(b).

## PART 2 STATE REGULATIONS

### California Environmental Quality Act (CEQA)

This proposed modification is not a significant project.

## PART 3 FEDERAL REGULATIONS

<b>40CFR Part 60 Subpart K</b>	<b>Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and Prior to May 19, 1978</b>
§60.110	Both tanks 94-TK-9005 (D259) and 94-TK-9012 (D266) are currently subject to 40 CFR 60 Subpart K. These tanks comply with the floating roof requirements of this regulation. Please note with the modifications to these tanks, the tanks will now be subject to Subpart Kb.

<b>40CFR Part 60 Subpart Kb</b>	<b>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</b>
§60.110b	Due to the modifications to both tanks 94-TK-9005 (D259) and 94-TK-9012 (D266), these tanks will now be subject to 40 CFR 60 Subpart Kb instead of Subpart K. In accordance with definition of modification in §60.2, “ <i>Modification</i> means any physical change in, or change in the method of operation of, an existing facility which <u>increases</u> the amount of any air pollutant (to which a standard applies) emitted into the atmosphere by that facility or which results in the emission of any air pollutant (to which a standard applies) into the atmosphere not previously emitted.” There is an emission increase with replacement of the unslotted guidepole with a slotted guidepole. Therefore, the tanks are now subject to Subpart Kb.
§60.112b(a)(2)	External Floating Roof Tank. Subpart Kb requires the following seals/gap requirements: <ul style="list-style-type: none"> <li>(i) Closure device consists of two seals (a primary seal and a secondary seal). The primary seal shall be either a mechanical shoe seal or a liquid-</li> </ul>

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<b>40CFR Part 60 Subpart Kb</b>	<b>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</b>
	<p>mounted seal. 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 except as allowed in §60.113b(b)(4). Primary and secondary seals need to meet certain gap criteria.</p> <p>(ii) The floating roof has to float on the liquid at all times, exempt during emptying or refilling.</p> <p>(iii) There are to be no holes, tears, or other openings in the shoe, seal fabric, or seal envelope.</p> <p>These tanks comply with the tank design/control requirements of this regulation. Both District Rules 463 and/or 1178 require the same or more stringent requirements than noted above. Therefore, continued compliance is expected</p> <p>Subpart Kb also requires the rim vent to be gasketed and roof drains to be equipped with slotted fabric membranes covering at least 90% of the opening. Both District Rules 463 and 1178 require this requirement. Both tanks 94-TK-9005 (D259) and 94-TK-9012 (D266) are not equipped with a rim vent or roof drain. Therefore, these rim vent and roof drains requirement does not apply to tanks 94-TK-9005 (D259) and 94-TK-9012 (D266).</p>

<b>40CFR Part 63 Subpart CC</b>	<b>National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries</b>
§63.640	<p>Both tanks 94-TK-9005 (D259) and 94-TK-9012 (D266) are subject to the 40 CFR 63 Subpart CC as a Group 2 tanks. A <i>Group 2 storage vessel</i> means a storage vessel that does not meet the definition of a Group 1 storage vessel. A <i>Group 1 storage vessel</i> is a storage vessel that has a design capacity greater than or equal to 1,113 bbl and stored liquid maximum true vapor pressure greater than or equal to 1.5 psia and stored liquid annual average true vapor pressure greater than or equal to 1.2 psia and annual average HAP liquid concentration greater than 4 % by weight total organic HAP. <del>Both tanks 94-TK-9005 (D259) and 94-TK-9012 (D266) store materials with true vapor pressure less than 1.2 psia.</del> Storage tank 94-TK-9005 (D259) stores materials with true vapor pressure less than 1.2 psia and is only permitted to store materials no more than 0.5 psia. This storage tank will continue to be classified as a Group 2 storage vessel.</p>

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<b>40CFR Part 63 Subpart CC</b>	<b>National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries</b>
	Storage tank 94-TK-9012 (D266) currently stores materials less than 1.2 psia, however, is permitted to store materials with true vapor pressure less than 9.9 psia. Therefore, this storage tank will be reclassified from a Group 2 to a Group 1 storage vessel.
§63.640(n)(1)	Overlap of subpart CC with other regulations for storage vessels. A Group 1 or 2 storage vessel that is also subject to the control requirements of 40 CFR Part 60, Subpart Kb is required to comply only with the provisions of 40 CFR Part 60, Subpart Kb. Both tanks 94-TK-9005 (D259) and 94-TK-9012 (D266) currently comply with Subpart Kb.
§63.654 (i)(1)(iv)	Recordkeeping. The refinery shall maintain records of the weight % of HAP stored to maintain the Group 2 storage vessel designation for storage tank 94-TK-9005 (D259).

**CONCLUSION:**

Based on the above evaluation, it recommended that the following be issued:

A/N	Recommendation
526586 526261	Issue Permit to Construct-Permit to Operate (PC-PO) with conditions listed in the Conditions Section
526585	Approve Title V Permit Revision Application

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## Appendix

### A. Tank 4.0 Output

- 94-TK-9005 (D259) Pre-Modification and Post-Modification
- 94-TK-9012 (D266) Pre-Modification and Post-Modification

### B. Tier 2 Screening Risk Assessments

- 94-TK-9005 (D259)
- 94-TK-9012 (D266)

## Appendix A. Tank 4.0.9d Output

- **94-TK-9005 (D259) Pre-Modification and Post-Modification**
- **94-TK-9012 (D266) Pre-Modification and Post-Modification**

Ultramar, Inc. ID. 800026

Tank 94-TK-9005

Rule 1306(d)(2): Determination of Offsets of Existing Source

Volume 6,300,000 gallons

**Actual Emissions calculated pursuant to Rule 1306(c)(1) (i.e., 2-year average)**

Year	Month	TVP (psia)	Commodity	Thruput bbl/month	Thruput gal/month	Emissions*, lbs/month	Thruput, gal/year
2009	July	<0.1	Raw Gas Oil	489,268	20,549,256	51.5856	
	Aug	<0.1	Raw Gas Oil	478,004	20,076,168	50.4401	
	Sept	<0.1	Raw Gas Oil	511,395	21,478,590	52.0528	
	Oct	<0.1	Raw Gas Oil	581,219	24,411,198	56.2085	
	Nov	<0.1	Raw Gas Oil	175,607	7,375,494	27.3494	
	Dec	<0.1	Raw Gas Oil	399,045	16,759,890	42.2289	110,650,596
	Jan	<0.1	Raw Gas Oil	551,022	23,142,924	53.7403	
	Feb	<0.1	Raw Gas Oil	550,958	23,140,236	54.6353	
	Mar	<0.1	Raw Gas Oil	483,424	20,303,808	51.3571	
2010	Apr	<0.1	Raw Gas Oil	477,507	20,055,294	51.8409	
	May	<0.1	Raw Gas Oil	423,543	17,788,806	47.8939	
	Jun	<0.1	Raw Gas Oil	356,630	14,978,460	42.684	
	July	<0.1	Raw Gas Oil	536,737	22,542,954	54.8998	
	Aug	<0.1	Raw Gas Oil	516,606	21,697,452	53.1352	
	Sept	<0.1	Raw Gas Oil	583,617	24,511,914	57.0952	
	Oct	<0.1	Raw Gas Oil	622,794	26,157,348	59.1112	
	Nov	<0.1	Raw Gas Oil	274,407	11,525,094	34.2475	
	Dec	<0.1	Raw Gas Oil	558,152	23,442,384	53.3375	249,286,674
2011	Jan	<0.1	Raw Gas Oil	522,735	21,954,870	51.7653	
	Feb	<0.1	Raw Gas Oil	448,988	18,857,496	47.5159	
	Mar	<0.1	Raw Gas Oil	583,469	24,505,698	58.3421	
	Apr	<0.1	Raw Gas Oil	361,674	15,190,308	43.7536	80,508,372
				Max	26,157,348	1,095.22 lbs (Jul-09 to Apr-11)	
						49.78 lbs/month	
						<b>1.66 lbs/day</b>	

2-year average:

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

**Identification**

User Identification: 94-TK-9005 (Pre-Mod\_A)  
City: Wilmington  
State: California  
Company: Ultramar  
Type of Tank: External Floating Roof Tank  
Description: D259, July 2009 - Apr 2010

**Tank Dimensions**

Diameter (ft): 156.00  
Volume (gallons): 6,300,000.00  
Turnovers: 31.32

**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**

	<b>Quantity</b>
Access Hatch (24-in. Diam.)/Bolted Cover, Gasketed	1
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	2
Gauge-Hatch/Sample Well (8-in. Diam.)/Weighted Mech. Actuation, Gask.	1
Roof Leg (3-in. Diameter)/Adjustable, Center Area, Sock	50
Roof Leg (3-in. Diameter)/Adjustable, Pontoon Area, Sock	26
Unslotted Guide-Pole Well/Gasketed sliding Cover, w. Wiper	1

Meteorological Data used in Emissions Calculations: Long Beach, California (Avg Atmospheric Pressure = 14.7 psia)

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

**94-TK-9005 (Pre-Mod\_A) - External Floating Roof Tank  
Wilmington, 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.					
RF - Raw Gas Oil (TVP = 0.1)	Jan	61.79	56.79	66.79	64.33	0.1000	N/A	N/A	190.0000			400.00	Option 1: VP60 = .1 VP70 = .1
RF - Raw Gas Oil (TVP = 0.1)	Feb	62.78	57.67	67.88	64.33	0.1000	N/A	N/A	190.0000			400.00	Option 1: VP60 = .1 VP70 = .1
RF - Raw Gas Oil (TVP = 0.1)	Mar	63.78	58.57	68.99	64.33	0.1000	N/A	N/A	190.0000			400.00	Option 1: VP60 = .1 VP70 = .1
RF - Raw Gas Oil (TVP = 0.1)	Apr	65.70	59.89	71.51	64.33	0.1000	N/A	N/A	190.0000			400.00	Option 1: VP60 = .1 VP70 = .1
RF - Raw Gas Oil (TVP = 0.1)	Jul	71.26	65.04	77.47	64.33	0.1000	N/A	N/A	190.0000			400.00	Option 1: VP70 = .1 VP80 = .1
RF - Raw Gas Oil (TVP = 0.1)	Aug	71.60	65.63	77.58	64.33	0.1000	N/A	N/A	190.0000			400.00	Option 1: VP70 = .1 VP80 = .1
RF - Raw Gas Oil (TVP = 0.1)	Sep	70.17	64.65	75.68	64.33	0.1000	N/A	N/A	190.0000			400.00	Option 1: VP70 = .1 VP80 = .1
RF - Raw Gas Oil (TVP = 0.1)	Oct	67.76	62.48	73.04	64.33	0.1000	N/A	N/A	190.0000			400.00	Option 1: VP60 = .1 VP70 = .1
RF - Raw Gas Oil (TVP = 0.1)	Nov	64.31	59.22	69.40	64.33	0.1000	N/A	N/A	190.0000			400.00	Option 1: VP60 = .1 VP70 = .1
RF - Raw Gas Oil (TVP = 0.1)	Dec	61.76	56.83	66.70	64.33	0.1000	N/A	N/A	190.0000			400.00	Option 1: VP60 = .1 VP70 = .1

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

**94-TK-9005 (Pre-Mod\_A) - External Floating Roof Tank**  
**Wilmington, California**

Month:	January	February	March	April	May	June	July	August	September	October	November	December
Rim Seal Losses (lb):	11.9882	12.8111	14.1596	15.0024			13.9910	13.6539	12.9796	12.3054	11.7997	11.1254
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
Seal Factor B (lb-mole/ft-yr (mph) <sup>n</sup> ):	0.4000	0.4000	0.4000	0.4000			0.4000	0.4000	0.4000	0.4000	0.4000	0.4000
Average Wind Speed (mph):	5.6000	6.1000	6.9000	7.4000			6.8000	6.6000	6.2000	5.8000	5.5000	5.1000
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
Value of Vapor Pressure Function:	0.0017	0.0017	0.0017	0.0017			0.0017	0.0017	0.0017	0.0017	0.0017	0.0017
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.1000	0.1000	0.1000	0.1000			0.1000	0.1000	0.1000	0.1000	0.1000	0.1000
Tank Diameter (ft):	156.0000	156.0000	156.0000	156.0000			156.0000	156.0000	156.0000	156.0000	156.0000	156.0000
Vapor Molecular Weight (lb/lb-mole):	190.0000	190.0000	190.0000	190.0000			190.0000	190.0000	190.0000	190.0000	190.0000	190.0000
Product Factor:	1.0000	1.0000	1.0000	1.0000			1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Withdrawal Losses (lb):	38.4714	38.4669	33.7518	33.3387			34.1598	33.3734	35.7047	40.5797	12.2606	27.8606
Net Throughput (gal/mo.):	23,142,924.0000	23,140,236.0000	20,303,808.0000	20,055,294.0000			20,549,256.0000	20,076,168.0000	21,478,590.0000	24,411,198.0000	7,375,494.0000	16,759,890.0000
Shell Clingage Factor (bbl/1000 sqft):	0.0015	0.0015	0.0015	0.0015			0.0015	0.0015	0.0015	0.0015	0.0015	0.0015
Average Organic Liquid Density (lb/gal):	7.7000	7.7000	7.7000	7.7000			7.7000	7.7000	7.7000	7.7000	7.7000	7.7000
Tank Diameter (ft):	156.0000	156.0000	156.0000	156.0000			156.0000	156.0000	156.0000	156.0000	156.0000	156.0000
Roof Fitting Losses (lb):	3.3007	3.3573	3.4457	3.4997			3.4348	3.4128	3.3684	3.3234	3.2892	3.2429
Value of Vapor Pressure Function:	0.0017	0.0017	0.0017	0.0017			0.0017	0.0017	0.0017	0.0017	0.0017	0.0017
Vapor Molecular Weight (lb/lb-mole):	190.0000	190.0000	190.0000	190.0000			190.0000	190.0000	190.0000	190.0000	190.0000	190.0000
Product Factor:	1.0000	1.0000	1.0000	1.0000			1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Tot. Roof Fitting Loss Fact. (lb-mole/yr):	122.1838	124.2790	127.5518	129.5534			127.1476	126.3351	124.6933	123.0269	121.7597	120.0446
Average Wind Speed (mph):	5.6000	6.1000	6.9000	7.4000			6.8000	6.6000	6.2000	5.8000	5.5000	5.1000
Total Losses (lb):	53.7403	54.6353	51.3571	51.8409			51.5856	50.4401	52.0528	56.2085	27.3494	42.2289

Roof Fitting/Status	Quantity	Roof Fitting Loss Factors		m	Losses (lb)
		KFa (lb-mole/yr)	KFb (lb-mole/(yr mph <sup>n</sup> ))		
Access Hatch (24-in. Diam.)/Bolted Cover, Gasketed	1	1.60	0.00	0.00	0.4320
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	2	6.20	1.20	0.94	5.9219
Gauge-Hatch/Sample Well (6-in. Diam.)/Weighted Mech. Actuation, Gask.	1	0.47	0.02	0.97	0.1493
Roof Leg (3-in. Diameter)/Adjustable, Center Area, Sock	50	0.49	0.16	0.14	9.2655
Roof Leg (3-in. Diameter)/Adjustable, Portoon Area, Sock	26	1.20	0.14	0.65	10.9716
Unslotted Guide-Pole Well/Gasketed sliding Cover. w. Wiper	1	14.00	3.70	0.78	6.9153

**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**

**94-TK-9005 (Pre-Mod\_A) - External Floating Roof Tank**  
**Wilmington, California**

	Losses(lbs)				
Components	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	Total Emissions
RF - Raw Gas Oil (TVP = 0.1)	129.80	327.97	33.67	0.00	491.44

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

**Identification**

User Identification: 94-TK-9005 (Pre-Mod)  
 City: Wilmington  
 State: California  
 Company: Ultramar  
 Type of Tank: External Floating Roof Tank  
 Description: D259, May 2010 to April 2011

**Tank Dimensions**

Diameter (ft): 156.00  
 Volume (gallons): 6,300,000.00  
 Turnovers: 38.60

**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**

	<b>Quantity</b>
Access Hatch (24-in. Diam.)/Bolted Cover, Gasketed	1
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	2
Gauge-Hatch/Sample Well (8-in. Diam.)/Weighted Mech. Actuation, Gask.	1
Roof Leg (3-in. Diameter)/Adjustable, Center Area, Sock	50
Roof Leg (3-in. Diameter)/Adjustable, Pontoon Area, Sock	26
Unslotted Guide-Pole Well/Gasketed sliding Cover, w. Wiper	1

Meteorological Data used in Emissions Calculations: Long Beach, California (Avg Atmospheric Pressure = 14.7 psia)

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

**94-TK-9005 (Pre-Mod) - External Floating Roof Tank**  
**Wilmington, 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.					
RF - Raw Gas Oil (TVP = 0.1)	Jan	61.79	56.79	66.79	64.33	0.1000	N/A	N/A	190.0000			400.00	Option 1: VP60 = .1 VP70 = .1
RF - Raw Gas Oil (TVP = 0.1)	Feb	62.78	57.67	67.88	64.33	0.1000	N/A	N/A	190.0000			400.00	Option 1: VP60 = .1 VP70 = .1
RF - Raw Gas Oil (TVP = 0.1)	Mar	63.78	58.57	68.99	64.33	0.1000	N/A	N/A	190.0000			400.00	Option 1: VP60 = .1 VP70 = .1
RF - Raw Gas Oil (TVP = 0.1)	Apr	65.70	59.89	71.51	64.33	0.1000	N/A	N/A	190.0000			400.00	Option 1: VP60 = .1 VP70 = .1
RF - Raw Gas Oil (TVP = 0.1)	May	67.27	61.79	72.76	64.33	0.1000	N/A	N/A	190.0000			400.00	Option 1: VP60 = .1 VP70 = .1
RF - Raw Gas Oil (TVP = 0.1)	Jun	68.98	63.35	74.61	64.33	0.1000	N/A	N/A	190.0000			400.00	Option 1: VP60 = .1 VP70 = .1
RF - Raw Gas Oil (TVP = 0.1)	Jul	71.26	65.04	77.47	64.33	0.1000	N/A	N/A	190.0000			400.00	Option 1: VP70 = .1 VP80 = .1
RF - Raw Gas Oil (TVP = 0.1)	Aug	71.60	65.63	77.58	64.33	0.1000	N/A	N/A	190.0000			400.00	Option 1: VP70 = .1 VP80 = .1
RF - Raw Gas Oil (TVP = 0.1)	Sep	70.17	64.65	75.68	64.33	0.1000	N/A	N/A	190.0000			400.00	Option 1: VP70 = .1 VP80 = .1
RF - Raw Gas Oil (TVP = 0.1)	Oct	67.76	62.48	73.04	64.33	0.1000	N/A	N/A	190.0000			400.00	Option 1: VP60 = .1 VP70 = .1
RF - Raw Gas Oil (TVP = 0.1)	Nov	64.31	59.22	69.40	64.33	0.1000	N/A	N/A	190.0000			400.00	Option 1: VP60 = .1 VP70 = .1
RF - Raw Gas Oil (TVP = 0.1)	Dec	61.76	56.83	66.70	64.33	0.1000	N/A	N/A	190.0000			400.00	Option 1: VP60 = .1 VP70 = .1

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

**94-TK-9005 (Pre-Mod) - External Floating Roof Tank**  
**Wilmington, California**

*Self*

*2016*

Month:	January	February	March	April	May	June	July	August	September	October	November	December
Rim Seal Losses (lb):	11.9682	12.8111	14.1596	15.0024	14.8339	14.3282	13.9910	13.6539	12.9796	12.3054	11.7997	11.1254
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>n</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):	5.6000	6.1000	6.9000	7.4000	7.3000	7.0000	6.8000	6.6000	6.2000	5.8000	5.5000	5.1000
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:	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000	0.1000
Tank Diameter (ft):	156.0000	156.0000	156.0000	156.0000	156.0000	156.0000	156.0000	156.0000	156.0000	156.0000	156.0000	156.0000
Vapor Molecular Weight (lb/lb-mole):	190.0000	190.0000	190.0000	190.0000	190.0000	190.0000	190.0000	190.0000	190.0000	190.0000	190.0000	190.0000
Product Factor:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Withdrawal Losses (lb):	36.4965	31.3476	40.7368	25.2515	29.5710	24.8993	37.4740	36.0685	40.7471	43.4824	19.1586	38.9692
Net Throughput (gal/mo.):	21,954,870.0000	18,857,496.0000	24,505,698.0000	15,190,308.0000	17,788,808.0000	14,978,460.0000	22,542,954.0000	21,697,452.0000	24,511,914.0000	26,157,348.0000	11,525,094.0000	23,442,384.0000
Shell Clingage Factor (bb/1000 sqft):	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015
Average Organic Liquid Density (lb/gal):	7.7000	7.7000	7.7000	7.7000	7.7000	7.7000	7.7000	7.7000	7.7000	7.7000	7.7000	7.7000
Tank Diameter (ft):	156.0000	156.0000	156.0000	156.0000	156.0000	156.0000	156.0000	156.0000	156.0000	156.0000	156.0000	156.0000
Roof Fitting Losses (lb):	3.3007	3.3573	3.4457	3.4997	3.4890	3.4566	3.4348	3.4128	3.3684	3.3234	3.2892	3.2429
Value of Vapor Pressure Function:	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017
Vapor Molecular Weight (lb/lb-mole):	190.0000	190.0000	190.0000	190.0000	190.0000	190.0000	190.0000	190.0000	190.0000	190.0000	190.0000	190.0000
Product Factor:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Tot. Roof Fitting Loss Fact. (lb-mole/yr):	122.1838	124.2790	127.5518	129.5534	129.1556	127.9546	127.1476	126.3351	124.6933	123.0269	121.7597	120.0446
Average Wind Speed (mph):	5.6000	6.1000	6.9000	7.4000	7.3000	7.0000	6.8000	6.6000	6.2000	5.8000	5.5000	5.1000
Total Losses (lb):	51.7653	47.5159	58.3421	43.7536	47.8939	42.6840	54.8998	53.1352	57.0952	59.1112	34.2475	53.3375

Roof Fitting/Status	Quantity	Roof Fitting Loss Factors		m	Losses(lb)
		KFa(lb-mole/yr)	KFb(lb-mole/yr mph <sup>n</sup> )		
Access Hatch (24-in. Diam.)/Bolted Cover, Gasketed	1	1.60	0.00	0.00	0.5187
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	2	6.20	1.20	0.94	7.1847
Gauge-Hatch/Sample Well (8-in. Diam.)/Weighted Mech. Actuation, Gask.	1	0.47	0.02	0.97	0.1799
Roof Leg (3-in. Diameter)/Adjustable, Center Area, Sock	50	0.49	0.16	0.14	11.1358
Roof Leg (3-in. Diameter)/Adjustable, Pontoon Area, Sock	26	1.20	0.14	0.65	13.2237
Unslotted Guide-Pole Well/Gasketed sliding Cover, w. Wiper	1	14.00	3.70	0.78	8.3779

**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**

**94-TK-9005 (Pre-Mod) - External Floating Roof Tank**  
**Wilmington, California**

Components	Losses(lbs)				Total Emissions
	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	
RF - Raw Gas Oil (TVP = 0.1)	158.96	404.20	40.62	0.00	603.78

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

**Identification**

User Identification: 94-TK-9005 (Post Mod)  
City: Wilmington  
State: California  
Company: Ultramar  
Type of Tank: External Floating Roof Tank  
Description: D259

**Tank Dimensions**

Diameter (ft): 156.00  
Volume (gallons): 6,300,000.00  
Turnovers: 60.00

**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**

	<b>Quantity</b>
Access Hatch (24-in. Diam.)/Bolted Cover, Gasketed	1
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	2
Gauge-Hatch/Sample Well (8-in. Diam.)/Weighted Mech. Actuation, Gask.	1
Roof Leg (3-in. Diameter)/Adjustable, Center Area, Sock	50
Roof Leg (3-in. Diameter)/Adjustable, Pontoon Area, Sock	26
Slotted Guide-Pole/Sample Well/Gask. Sliding Cover, w. Float, Wiper	1

Meteorological Data used in Emissions Calculations: Long Beach, California (Avg Atmospheric Pressure = 14.7 psia)

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

**94-TK-9005 (Post Mod) - External Floating Roof Tank**  
**Wilmington, 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.					
RF-Raw Gas Oil	All	66.43	60.99	71.87	64.33	0.5000	N/A	N/A	190.0185			400.05	Option 1: VP60 = .5 VP70 = .5
1,2,4-Trimethylbenzene						0.0263	N/A	N/A	120.1900	0.0029	0.0003	120.19	Option 2: A=7.04383, B=1573.267, C=208.56
Benzene						1.3922	N/A	N/A	78.1100	0.0001	0.0006	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Ethylbenzene						0.1353	N/A	N/A	106.1700	0.0002	0.0001	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Hexane (-n)						2.2563	N/A	N/A	86.1700	0.0033	0.0314	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Toluene						0.4021	N/A	N/A	92.1300	0.0003	0.0005	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Unidentified Components						0.4778	N/A	N/A	198.1482	0.9926	0.9668	409.29	Option 1: VP60 = .4778 VP70 = .4778
Xylene (-m)						0.1129	N/A	N/A	106.1700	0.0006	0.0003	106.17	Option 2: A=7.009, B=1462.266, C=215.11

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

**94-TK-9005 (Post Mod) - External Floating Roof Tank**  
**Wilmington, California**

Annual Emission Calculations

Rim Seal Losses (lb):	805.8882
Seal Factor A (lb-mole/ft-yr):	0.6000
Seal Factor B (lb-mole/ft-yr (mph) <sup>n</sup> ):	0.4000
Average Wind Speed (mph):	6.3583
Seal-related Wind Speed Exponent:	1.0000
Value of Vapor Pressure Function:	0.0086
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.5000
Tank Diameter (ft):	156.0000
Vapor Molecular Weight (lb/lb-mole):	190.0185
Product Factor:	1.0000
Withdrawal Losses (lb):	622.1736
Annual Net Throughput (gal/yr.):	374,850,000.0000
Shell Clingage Factor (bbl/1000 sqft):	0.0015
Average Organic Liquid Density (lb/gal):	7.6882
Tank Diameter (ft):	156.0000
Roof Fitting Losses (lb):	388.8199
Value of Vapor Pressure Function:	0.0086
Vapor Molecular Weight (lb/lb-mole):	190.0185
Product Factor:	1.0000
Tot. Roof Fitting Loss Fact.(lb-mole/yr):	236.5858
Average Wind Speed (mph):	6.3583
Total Losses (lb):	1,816.8817

Roof Fitting/Status	Quantity	Roof Fitting Loss Factors		m	Losses(lb)
		KFa(lb-mole/yr)	KFb(lb-mole/(yr mph <sup>n</sup> ))		
Access Hatch (24-in. Diam.)/Boiled Cover, Gasketed	1	1.60	0.00	0.00	2.6295
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	2	6.20	1.20	0.94	36.4301
Gauge-Hatch/Sample Well (8-in. Diam.)/Weighted Mech. Actuation, Gask.	1	0.47	0.02	0.97	0.9123
Roof Leg (3-in. Diameter)/Adjustable, Center Area, Sock	50	0.49	0.16	0.14	56.4692
Roof Leg (3-in. Diameter)/Adjustable, Pontoon Area, Sock	26	1.20	0.14	0.65	67.0648
Slotted Guide-Pole/Sample Well/Gask. Sliding Cover, w. Float, Wiper	1	21.00	7.90	1.80	225.3140

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

**Emissions Report for: Annual**

**94-TK-9005 (Post Mod) - External Floating Roof Tank**  
**Wilmington, California**

Components	Losses(lbs)				Total Emissions
	Rim Seal Loss	Withdrawal Loss	Deck Fitting Loss	Deck Seam Loss	
RF-Raw Gas Oil	805.89	622.17	388.82	0.00	1,816.88
1,2,4-Trimethylbenzene	0.26	1.80	0.13	0.00	2.19
Benzene	0.47	0.06	0.23	0.00	0.76
Ethylbenzene	0.09	0.12	0.04	0.00	0.26
Hexane (-n)	25.27	2.05	12.19	0.00	39.51
Toluene	0.41	0.19	0.20	0.00	0.79
Unidentified Components	779.16	617.57	375.92	0.00	1,772.65
Xylene (-m)	0.23	0.37	0.11	0.00	0.71

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

**Identification**

User Identification:	94-TK-9012 (Pre Mod)
City:	Wilmington
State:	California
Company:	Ultramar
Type of Tank:	External Floating Roof Tank
Description:	D266

**Tank Dimensions**

Diameter (ft):	127.50
Volume (gallons):	4,200,000.00
Turnovers:	109.50

**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**

	<b>Quantity</b>
Access Hatch (24-in. Diam.)/Bolted Cover, Gasketed	1
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	2
Gauge-Hatch/Sample Well (8-in. Diam.)/Weighted Mech. Actuation, Gask.	1
Roof Leg (3-in. Diameter)/Adjustable, Center Area, Sock	30
Roof Leg (3-in. Diameter)/Adjustable, Pontoon Area, Sock	22
Unslotted Guide-Pole Well/Gasketed sliding Cover, w. Wiper	1

Meteorological Data used in Emissions Calculations: Long Beach, California (Avg Atmospheric Pressure = 14.7 psia)

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

**94-TK-9012 (Pre Mod) - External Floating Roof Tank**  
**Wilmington, 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.					
Gasoline (TVP 11)	All	66.43	60.99	71.87	64.33	11.0000	N/A	N/A	66.0000			96.00	Option 1: VP60 = 11 VP70 = 11

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

**94-TK-9012 (Pre Mod) - External Floating Roof Tank**  
**Wilmington, California**

Annual Emission Calculations

Rim Seal Losses (lb):	8,773.6075
Seal Factor A (lb-mole/ft-yr):	0.6000
Seal Factor B (lb-mole/ft-yr (mph) <sup>n</sup> ):	0.4000
Average Wind Speed (mph):	6.3583
Seal-related Wind Speed Exponent:	1.0000
Value of Vapor Pressure Function:	0.3317
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	11.0000
Tank Diameter (ft):	127.5000
Vapor Molecular Weight (lb/lb-mole):	66.0000
Product Factor:	1.0000
Withdrawal Losses (lb):	680.2913
Annual Net Throughput (gal/yr.):	459,900,000.0000
Shell Clingage Factor (bbl/1000 sqft):	0.0015
Average Organic Liquid Density (lb/gal):	5.6000
Tank Diameter (ft):	127.5000
Roof Fitting Losses (lb):	2,305.7117
Value of Vapor Pressure Function:	0.3317
Vapor Molecular Weight (lb/lb-mole):	66.0000
Product Factor:	1.0000
Tot. Roof Fitting Loss Fact.(lb-mole/yr):	105.3240
Average Wind Speed (mph):	6.3583
Total Losses (lb):	11,759.6105

Roof Fitting/Status	Quantity	Roof Fitting Loss Factors		m	Losses(lb)
		KFa(lb-mole/yr)	KFb(lb-mole/(yr mph <sup>n</sup> ))		
Access Hatch (24-in. Diam.)/Bolted Cover, Gasketed	1	1.60	0.00	0.00	35.0266
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	2	6.20	1.20	0.94	485.2638
Gauge-Hatch/Sample Well (8-in. Diam.)/Weighted Mech. Actuation, Gask.	1	0.47	0.02	0.97	12.1524
Roof Leg (3-in. Diameter)/Adjustable, Center Area, Sock	30	0.49	0.16	0.14	451.3158
Roof Leg (3-in. Diameter)/Adjustable, Pontoon Area, Sock	22	1.20	0.14	0.65	755.8954
Unslotted Guide-Pole Well/Gasketed sliding Cover, w. Wiper	1	14.00	3.70	0.78	566.0579

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

**Emissions Report for: Annual**

**94-TK-9012 (Pre Mod) - External Floating Roof Tank**  
**Wilmington, California**

Components	Losses(lbs)				Total Emissions
	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	
Gasoline (TVP 11)	8,773.61	680.29	2,305.71	0.00	11,759.61

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

**Identification**

User Identification: 94-TK-9012 (Post Mod)  
City: Wilmington  
State: California  
Company: Ultramar  
Type of Tank: External Floating Roof Tank  
Description: D266

**Tank Dimensions**

Diameter (ft): 127.50  
Volume (gallons): 4,200,000.00  
Turnovers: 109.50

**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
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	2
Gauge-Hatch/Sample Well (8-in. Diam.)/Weighted Mech. Actuation, Gask.	1
Roof Leg (3-in. Diameter)/Adjustable, Center Area, Sock	30
Roof Leg (3-in. Diameter)/Adjustable, Pontoon Area, Sock	22
Slotted Guide-Pole/Sample Well/Gask. Sliding Cover, w. Float, Wiper	1

Meteorological Data used in Emissions Calculations: Long Beach, California (Avg Atmospheric Pressure = 14.7 psia)

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

**94-TK-9012 (Post Mod) - External Floating Roof Tank**  
**Wilmington, 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.					
Gasoline (TVP 9.9)	All	66.43	60.99	71.87	64.33	9.9000	N/A	N/A	66.0000			96.00	Option 1: VP60 = 9.9 VP70 = 9.9

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

**94-TK-9012 (Post Mod) - External Floating Roof Tank**  
**Wilmington, California**

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Annual Emission Calculations

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Rim Seal Losses (lb):	7,211.3746
Seal Factor A (lb-mole/ft-yr):	0.6000
Seal Factor B (lb-mole/ft-yr (mph) <sup>n</sup> ):	0.4000
Average Wind Speed (mph):	6.3583
Seal-related Wind Speed Exponent:	1.0000
Value of Vapor Pressure Function:	0.2726
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	9.9000
Tank Diameter (ft):	127.5000
Vapor Molecular Weight (lb/lb-mole):	66.0000
Product Factor:	1.0000
Withdrawal Losses (lb):	680.2913
Annual Net Throughput (gal/yr.):	459,900,000.0000
Shell Clingage Factor (bbl/1000 sqft):	0.0015
Average Organic Liquid Density (lb/gal):	5.6000
Tank Diameter (ft):	127.5000
Roof Fitting Losses (lb):	3,896.7576
Value of Vapor Pressure Function:	0.2726
Vapor Molecular Weight (lb/lb-mole):	66.0000
Product Factor:	1.0000
Tot. Roof Fitting Loss Fact.(lb-mole/yr):	216.5638
Average Wind Speed (mph):	6.3583
Total Losses (lb):	11,788.4235

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Roof Fitting/Status	Quantity	Roof Fitting Loss Factors		m	Losses(lb)
		KFa(lb-mole/yr)	KFb(lb-mole/(yr mph <sup>n</sup> ))		
Access Hatch (24-in. Diam.)/Bolted Cover, Gasketed	1	1.60	0.00	0.00	28.7897
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	2	6.20	1.20	0.94	398.8574
Gauge-Hatch/Sample Well (8-in. Diam.)/Weighted Mech. Actuation, Gask.	1	0.47	0.02	0.97	9.9885
Roof Leg (3-in. Diameter)/Adjustable, Center Area, Sock	30	0.49	0.16	0.14	370.9543
Roof Leg (3-in. Diameter)/Adjustable, Pontoon Area, Sock	22	1.20	0.14	0.65	621.3003
Slotted Guide-Pole/Sample Well/Gask. Sliding Cover, w. Float, Wiper	1	21.00	7.90	1.80	2,466.8674

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

**Emissions Report for: Annual**

**94-TK-9012 (Post Mod) - External Floating Roof Tank**  
**Wilmington, California**

Components	Losses(lbs)				Total Emissions
	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	
Gasoline (TVP 9.9)	7,211.37	680.29	3,896.76	0.00	11,788.42

## Appendix B. Tier 2 Screening Risk Assessments

- 94-TK-9005 (D259)

- 94-TK-9012 (D266)

## TIER 2 SCREENING RISK ASSESSMENT REPORT

A/N: 526586  
 Fac:

Application deemed complete date: 09/09/11

### 2. Tier 2 Data

MET Factor	1.00
4 hr	0.89
6 or 7 hrs	0.73

#### Dispersion Factors tables

3	For Chronic X/Q
6	For Acute X/Q

#### Dilution Factors (ug/m3)/(tons/yr)

Receptor	X/Q	X/Qmax
Residential	0.12	8.3
Commercial	1.445	83.35

#### Adjustment and Intake Factors

	AFann	DBR	EVF
Residential	1	302	0.96
Worker	1	149	0.38





A/N: 526586

Application deemed complete date: 09/09/11

**TIER 2 RESULTS**

**5a. MICR**

MICR = CP (mg/(kg-day))<sup>-1</sup> \* Q (ton/yr) \* (X/Q) \* AFann \* MET \* DBR \* EVF \* 1E-6\* MP

Compound	Residential	Commercial
Benzene (including benzene from gasoline)	1.52E-09	3.57E-09
Toluene (methyl benzene)		
Xylenes (isomers and mixtures)		
Ethyl benzene	1.07E-12	2.52E-12
Hexane (n-)		
<b>Total</b>	<b>1.52E-09</b>	<b>3.58E-09</b>
	<b>PASS</b>	<b>PASS</b>

No Cancer Burden, MICR<1.0E-6

<b>5b. Cancer Burden</b>	<b>NO</b>
X/Q for one-in-a-million:	
Distance (meter)	
Area (km2):	
Population:	
<b>Cancer Burden:</b>	

**6. Hazard Index**

HIA = [Q(lb/hr) \* (X/Q)max] \* AF / Acute REL

HIC = [Q(ton/yr) \* (X/Q) \* MET \* MP] / Chronic REL

Target Organs	Acute	Chronic	Acute Pass/Fail	Chronic Pass/Fail
Alimentary system (liver) - AL		2.56E-09	Pass	Pass
Bones and teeth - BN			Pass	Pass
Cardiovascular system - CV			Pass	Pass
Developmental - DEV	6.64E-06	1.26E-05	Pass	Pass
Endocrine system - END		2.56E-09	Pass	Pass
Eye	6.04E-07		Pass	Pass
Hematopoietic system - HEM	6.41E-06	1.05E-05	Pass	Pass
Immune system - IMM	6.41E-06		Pass	Pass
Kidney - KID		2.56E-09	Pass	Pass
Nervous system - NS	2.25E-07	1.76E-05	Pass	Pass
Reproductive system - REP	6.64E-06		Pass	Pass
Respiratory system - RES	6.04E-07	3.01E-06	Pass	Pass
Skin			Pass	Pass

A/N: 526586

Application deemed complete date:

09/09/11

6a. Hazard Index Acute

$$HIA = [Q(\text{lb/hr}) * (X/Q)\text{max}] * AF / \text{Acute REL}$$

Compound	HIA - Residential									
	AL	CV	DEV	EYE	HEM	IMM	NS	REP	RESP	SKIN
Benzene (including benzene from gasoline)			6.38E-07		6.38E-07	6.38E-07		6.38E-07		
Toluene (methyl benzene)			2.24E-08	2.24E-08			2.24E-08	2.24E-08	2.24E-08	
Xylenes (isomers and mixtures)				3.77E-08					3.77E-08	
Ethyl benzene										
Hexane (n-)										
<b>Total</b>			6.61E-07	6.02E-08	6.38E-07	6.38E-07	2.24E-08	6.61E-07	6.02E-08	

Compound	HIA - Commercial									
	AL	CV	DEV	EYE	HEM	IMM	NS	REP	RESP	SKIN
Benzene (including benzene from gasoline)			6.41E-06		6.41E-06	6.41E-06		6.41E-06		
Toluene (methyl benzene)			2.25E-07	2.25E-07			2.25E-07	2.25E-07	2.25E-07	
Xylenes (isomers and mixtures)				3.79E-07					3.79E-07	
Ethyl benzene										
Hexane (n-)										
<b>Total</b>			6.64E-06	6.04E-07	6.41E-06	6.41E-06	2.25E-07	6.64E-06	6.04E-07	

6b. Hazard Index Chronic

$$HIC = [Q(\text{ton/yr}) * (X/Q) * MET * MP] / \text{Chronic REL}$$

Compound	HIC - Residential												
	AL	BN	CV	DEV	END	EYE	HEM	IMM	KID	NS	REP	RESP	SKIN
Benzene (including benzene from gasoline)				8.74E-07			8.74E-07			8.74E-07			
Toluene (methyl benzene)				1.75E-07						1.75E-07		1.75E-07	
Xylenes (isomers and mixtures)										7.49E-08		7.49E-08	
Ethyl benzene	2.12E-10			2.12E-10	2.12E-10				2.12E-10				
Hexane (n-)										3.37E-07			
<b>Total</b>	<b>2.12E-10</b>			<b>1.05E-06</b>	<b>2.12E-10</b>		<b>8.74E-07</b>		<b>2.12E-10</b>	<b>1.46E-06</b>		<b>2.50E-07</b>	

6b. Hazard Index Chronic (cont.)

A/N: 526586

Application deemed complete date:

09/09/11

Compound	HIC - Commercial												
	AL	BN	CV	DEV	END	EYE	HEM	IMM	KID	NS	REP	RESP	SKIN
Benzene (including benzene from gasoline)				1.05E-05			1.05E-05						
Toluene (methyl benzene)				2.10E-06								2.10E-06	
Xylenes (isomers and mixtures)												9.02E-07	9.02E-07
Ethyl benzene	2.56E-09			2.56E-09	2.56E-09				2.56E-09				
Hexane (n-)										4.06E-06			
<b>Total</b>	2.56E-09			1.26E-05	2.56E-09		1.05E-05		2.56E-09	1.76E-05		3.01E-06	

## TIER 2 SCREENING RISK ASSESSMENT REPORT

A/N: 526261  
 Fac: Ultramar

Application deemed complete date: 09/09/11

### 2. Tier 2 Data

MET Factor	1.00
4 hr	0.89
6 or 7 hrs	0.73

#### Dispersion Factors tables

3	For Chronic X/Q
6	For Acute X/Q

#### Dilution Factors (ug/m3)/(tons/yr)

Receptor	X/Q	X/Qmax
Residential	0.12	8.3
Commercial	1.2075	70.225

#### Adjustment and Intake Factors

	AFann	DBR	EVF
Residential	1	302	0.96
Worker	1	149	0.38





A/N: 526261

Application deemed complete date: 09/09/11

**TIER 2 RESULTS**

**5a. MICR**

$MICR = CP \text{ (mg/(kg-day))}^{-1} * Q \text{ (ton/yr)} * (X/Q) * AFann * MET * DBR * EVF * 1E-6 * MP$

Compound	Residential	Commercial
Benzene (including benzene from gasoline)	3.04E-08	5.97E-08
Toluene (methyl benzene)		
Xylenes (isomers and mixtures)		
Ethyl benzene	4.36E-08	8.57E-08
Hexane (n-)		
<b>Total</b>	<b>7.40E-08</b>	<b>1.45E-07</b>
	<b>PASS</b>	<b>PASS</b>

No Cancer Burden, MICR < 1.0E-6

<b>5b. Cancer Burden</b>	<b>NO</b>
X/Q for one-in-a-million:	
Distance (meter)	
Area (km2):	
Population:	-
<b>Cancer Burden:</b>	

**6. Hazard Index**

HIA = [Q(lb/hr) \* (X/Q)max] \* AF / Acute REL

HIC = [Q(ton/yr) \* (X/Q) \* MET \* MP] / Chronic REL

Target Organs	Acute	Chronic	Acute Pass/Fail	Chronic Pass/Fail
Alimentary system (liver) - AL		8.70E-05	Pass	Pass
Bones and teeth - BN			Pass	Pass
Cardiovascular system - CV			Pass	Pass
Developmental - DEV	2.96E-04	2.00E-03	Pass	Pass
Endocrine system - END		8.70E-05	Pass	Pass
Eye	4.75E-04		Pass	Pass
Hematopoietic system - HEM	1.08E-04	1.76E-04	Pass	Pass
Immune system - IMM	1.08E-04		Pass	Pass
Kidney - KID		8.70E-05	Pass	Pass
Nervous system - NS	1.88E-04	6.32E-03	Pass	Pass
Reproductive system - REP	2.96E-04		Pass	Pass
Respiratory system - RES	4.75E-04	2.42E-03	Pass	Pass
Skin			Pass	Pass

A/N: 526261

Application deemed complete date:

09/09/11

6a. Hazard Index Acute

$$HIA = [Q(\text{lb/hr}) * (X/Q)\text{max}] * \text{AF/ Acute REL}$$

Compound	HIA - Residential									
	AL	CV	DEV	EYE	HEM	IMM	NS	REP	RESP	SKIN
Benzene (including benzene from gasoline)			1.28E-05		1.28E-05	1.28E-05		1.28E-05		
Toluene (methyl benzene)			2.22E-05	2.22E-05			2.22E-05	2.22E-05	2.22E-05	
Xylenes (isomers and mixtures)				3.40E-05					3.40E-05	
Ethyl benzene										
Hexane (n-)										
<b>Total</b>			3.50E-05	5.62E-05	1.28E-05	1.28E-05	2.22E-05	3.50E-05	5.62E-05	

HIA - Commercial

Compound	AL	CV	DEV	EYE	HEM	IMM	NS	REP	RESP	SKIN
Benzene (including benzene from gasoline)			1.08E-04		1.08E-04	1.08E-04		1.08E-04		
Toluene (methyl benzene)			1.88E-04	1.88E-04			1.88E-04	1.88E-04	1.88E-04	
Xylenes (isomers and mixtures)				2.87E-04					2.87E-04	
Ethyl benzene										
Hexane (n-)										
<b>Total</b>			2.96E-04	4.75E-04	1.08E-04	1.08E-04	1.88E-04	2.96E-04	4.75E-04	

6b. Hazard Index Chronic

$$HIC = [Q(\text{ton/yr}) * (X/Q) * MET * MP] / \text{Chronic REL}$$

Compound	HIC - Residential												
	AL	BN	CV	DEV	END	EYE	HEM	IMM	KID	NS	REP	RESP	SKIN
Benzene (including benzene from gasoline)				1.75E-05			1.75E-05			1.75E-05			
Toluene (methyl benzene)				1.73E-04						1.73E-04		1.73E-04	
Xylenes (isomers and mixtures)										6.74E-05		6.74E-05	
Ethyl benzene	8.65E-06			8.65E-06	8.65E-06				8.65E-06				
Hexane (n-)										3.70E-04			
<b>Total</b>	8.65E-06			1.99E-04	8.65E-06		1.75E-05		8.65E-06	6.28E-04		2.40E-04	

6b. Hazard Index Chronic (cont.)

A/N: 5262

Application deemed complete date:

09/09/11

Compound	HIC - Commercial												
	AL	BN	CV	DEV	END	EYE	HEM	IMM	KID	NS	REP	RESP	SKIN
Benzene (including benzene from gasoline)				1.76E-04			1.76E-04			1.76E-04			
Toluene (methyl benzene)				1.74E-03						1.74E-03		1.74E-03	
Xylenes (isomers and mixtures)										6.78E-04		6.78E-04	
Ethyl benzene	8.70E-05			8.70E-05	8.70E-05				8.70E-05				
Hexane (n-)										3.72E-03			
<b>Total</b>	<b>8.70E-05</b>			<b>2.00E-03</b>	<b>8.70E-05</b>		<b>1.76E-04</b>		<b>8.70E-05</b>	<b>6.32E-03</b>		<b>2.42E-03</b>	