SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT *ENGINEERING & COMPLIANCE DIVISION* APPLICATION PROCESSING AND CALCULATIONS	PAGES 17	PAGE 1
	APPL. NO. **499914**	DATE 12/10/09
	PROCESSED BY Jon Uhl	CHECKED BY

PERMIT TO CONSTRUCT/OPERATE (PC-PO)

ALTERATION – Replace External Floating Roof; Add Geodesic Dome

COMPANY NAME, LOCATION ADDRESS:
ConocoPhillips Company, SCAQMD ID # 800363
1660 W. Anaheim Street
Wilmington, CA 90748-0758

EQUIPMENT DESCRIPTION:

Changes from the Permit to Operate (AN 326386): Additions to the equipment description are underlined and bolded. New conditions are underlined and bolded. Deletions to the equipment description and conditions are noted in strikeouts.

Section D of ConocoPhillips - Wilmington Facility Permit, ID# 800363
Note: add to Section D, Process 13, System 8
Remove from Section D, Process 13, System 3

Equipment	ID No.	Connected To	Source Type/ Monitoring Unit	Emissions And Requirements	Conditions
Process 13 : STORAGE TANKS					P13.1, P13.2
System 8: DOME COVERED EXTERNAL FLOATING ROOF TANKS					S13.8
STORAGE TANK, **DOMED** EXTERNAL FLOATING ROOF, NO. 349, **RECOVERED OIL,** 20000 BBL, DIAMETER: 60 FT, HEIGHT: 40 FT 6 IN WITH A/N: ~~326386~~ **499914** Permit to Construct Issued: tbd **DOME COVER, GEODESIC** FLOATING ROOF, ~~DOUBLE DECK,~~ **PONTOON,** WELDED SHELL PRIMARY SEAL, CATEGORY A, ~~METALLIC~~ **MECHANICAL** SHOE SECONDARY SEAL, CATEGORY B OR BETTER ~~PER RULE 219(C)(4)~~, WIPER TYPE **GUIDEPOLE, GASKETED SLIDING COVER, WITH WIPER, UNSLOTTED**	D610			**BENZENE: (10) [40CFR 61 SUBPART FF_01, 12-4-2003];** **HAP: (10) [40CFR 63 SUBPART CC, #3A, 6-23-2003]**	**B22.xx, C1.xx, H23.9,** ~~H23.33,~~ ~~K67.7,~~ **K67.11, K171.x**

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
VOC	District Rule	463

[RULE 463, 5-6-2005]

[Processes subject to this condition: 13]

P13.2 All devices under this process are subject to the applicable requirements of the following rules or regulations:

Contaminant	Rule	Rule/Subpart
HAPs	40CFR61, SUBPART	FF

[40CFR 61 Subpart FF, 12-4-2003]

[Processes subject to this condition: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 18]

SYSTEM CONDITIONS

S13.8 All devices under this system are subject to the applicable requirements of the following rules or regulations:

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

For Rule 463 applicability, only subdivision (d) in the March 11, 1994 amendment, or equivalent requirements in the future amendments, shall apply to domed external floating roof tanks. This does not preclude any requirements specified in Rule 1178.

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

[Systems subject to this condition: Process 13, System 3, 8]

DEVICE CONDITIONS

B. Material/Fuel Type Limits

B22.xx The operator shall not use this equipment with materials having a(n) true vapor pressure of 8.82 psia or greater 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: D610]

C. Throughput or Operating Parameter Limits

C1.xx The operator shall limit the throughput to no more than 30000 barrels in any one calendar month.

The operator shall calculate the throughput, in barrels, by the following equation: 0. 14 x D x D x 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 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 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: D610]

H. Applicable Rules

H23.9 This equipment is subject to the applicable requirements of the following rules or regulations:

Contaminant	Rule	Rule/Subpart
VOC	40CFR60, SUBPART	Kb
Benzene	40CFR61, SUBPART	FF

[40CFR 60 Subpart Kb, 10-15-2003; 40CFR 61 Subpart FF, 12-4-2003]

[Devices subject to this condition: D546, D549, D555, D556, D602, D610, D612, D630, D633]

H23.33 This equipment is subject to the applicable requirements of the following rules or regulations:

Contaminant	Rule	Rule/Subpart
VOC	40CFR60, SUBPART	Ka

[40CFR 60 Subpart Ka, 12-14-2000]

[Devices subject to this condition: ~~D610~~]

K. Recordkeeping/Reporting

K67.7 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: ..., ~~D610~~, ...]

K67.11 The operator shall keep records, in a manner approved by the District, for the following parameter(s) or item(s):

Tank throughput in barrels.
Commodity stored and its time period.
True vapor pressure, in psia at actual storage temperature, of each commodity stored.
Hydrocarbon concentration measurements of the vapor space above the floating roof of the tank.
Other records that are required to comply with the applicable requirements of Rule 463(d), 1149, 1178, and 40CFR63 Subpart CC.

[RULE 1149, 7-14-1995; RULE 1149, 5-2-2008; **RULE 1178, 4-7-2006; RULE 1301, 12-7-1995; RULE, 463, 5-6-2005; 40CFR 63 Subpart CC, 6-23-2003]**

[Devices subject to this condition: D549, D555, D610]

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

Final drawings and/or specifications of the geodesic dome cover, slotted/unslotted guidepole, wiper 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]

[Devices subject to this condition: D549, D555, D610]

COMPLIANCE WITH PERMIT CONDITIONS - RECORDS:

Storage Tank #349 [D610]

Condition S13.8: Tank #349 has not been in VOC service since 1995 (see email dated 10/30/2009); tank has been used to store aqueous ammonium sulfate. Tank will be placed back in VOC service after modifications are completed. Tank #349 is in compliance.

There is currently no restriction on the products stored in this tank.

Tank contents are limited to a TVP less than 11 psia (Rule 463(d)(4)). Tank #349 has not been in VOC service since 1995. Complies.

There is no limit on the tank throughput.

Condition H23.33: Tank #349 has not been in VOC service since 1995. Complies.

Condition K67.7: Tank #349 has not been in VOC service since 1995. Complies.

REVIEW OF COMPLIANCE DATABASE:

On 12/9/2009, the AQMD Compliance Database shows two (2) outstanding Notices of Violation since January 1, 2007 (see Attachment 4). Neither outstanding NOV applies to this storage tank.

BACKGROUND:

ConocoPhillips operates this refinery in the city of Wilmington. The facility is a NOx and SOx RECLAIM facility. The Title V permit was issued July 1, 2009.

Storage Tank No. 349 [D610] is an existing external floating roof tank being modified to store "recovered oil", which is oil recovered from the API wastewater separators, oil collected in the flare knock-out drums and other waste oil from the process units. Tank was first permitted in 1955. A secondary seal was added in 1983 to comply with Rule 463. The primary seal was replaced in 1984. The NSR balance is 5 lb/day VOC.

Tank #349 has not been in VOC service since 1995 (see email dated 10/30/2009); tank has been used to store aqueous ammonium sulfate. Tank will be placed back in VOC service after modifications are completed.

On June 23, 2009, ConocoPhillips submitted A/N 499914 to replace the external floating roof and add a geodesic dome. Rule 1178(d)(2)(A) requires a facility exceeding 20 tons annual VOC emissions from emission inventory year 2000 to retrofit all external floating roof tanks containing material having a true vapor pressure greater than or equal to 3 psia with a domed roof. Tank #349 is not listed in the ConocoPhillips-Wilmington Rule 1178 compliance plan (A/N 457557), since the tank has not been in VOC service. The tank will be placed back in VOC service after modifications are completed.

Permitting History – Tank #349

A/N	Date	A/N Status	Permit	Permit Action
499914	(current)	20		Alteration — replace floating roof; add geodesic dome for Rule 1178 compliance
326386	7/3/1997	31	Active F6607	Change of ownership from Unocal to Tosco
107050	4/3/1984	31	Inactive M36975	Replace primary seal
C17441	4/18/1983	31	Inactive M19209	Add rim-mounted secondary seal
	1955		#14507	Permit to operate

FEE EVALUTION

Table 1 - Applications Submitted to AQMD

A/N	Date Submitted	Equipment	Device ID	Requested Action	Active P/O
499914	June 23, 2009	Storage Tank # 349 with External Floating Roof Tank	D610	• Replace external floating roof • Add dome	F6607 A/N 326386
449913	June 23, 2009	Title V/RECLAIM Permit Revision	n/a	• Significant revision to Title V permit	n/a

The fees paid for the applications are:

Table 2 – Application Fees Paid

A/N	Equipment	BCAT	Type	Status	Fee Schedule	Fees Required, $	Fees Paid, $
499914	Storage Tank #349	251904	50	20	C	3,244.91	3,244.91
	Expedited Processing Fee					1,622.46	1,622.46
499913	Facility Permit Revision - RECLAIM	555009	87	21		843.80	843.80*
	Significant Permit Revision – T5					843.83	0.00*

* ConocoPhillips submitted these applications before their Title V permit was effective; therefore, the RECLAIM-only fees have been paid. An additional fee of $843.83 will be billed to ConocoPhillips for the Title V facility permit amendment; Rule 301(k)(5) & (l)(7).

TANK SPECIFICATIONS

Table 3 lists the pre-modification and post-modification storage tank specifications; changes include:

Replace double deck external floating roof with pontoon external floating roof
Add geodesic dome

Table 3 – Storage Tank No. 349 (D610) Specifications

	External Floating Roof Tank Pre-Modification A/N 326386 (F6607)	**Domed External Floating Roof Tank Post-Modification A/N 499914**
Tank Dimensions		
Diameter, feet	60.	60.
Volume, gallons (barrels)	840,000 (20,000)	840,000 (20,000)
Throughput, barrels per year	182,500*	360,000**
Turnovers	9.13	18.00
Paint Characteristics		
Internal Shell Condition	Light Rust	Light Rust
Shell Color/Shade	Gray/Light	Gray/Light
Shell Condition	Good	Good
Tank Construction and Rim-Seal System		
Construction:	Welded	Welded
Primary Seal:	Mechanical Shoe	Mechanical Shoe
Secondary Seal:	Rim-mounted	Rim-mounted
Liquid Contents		
Mixture/Component	Aviation gasoline, max vapor pressure: 11 psia	Recovered Oil, max vapor pressure: 8.82 psia
Roof Characteristics		
Type	Double Deck	Pontoon with Domed Roof
Deck Fittings/Status	• 1-Access Hatch (24-in Dia.)/Bolted Cover, Gasketed • 1-Gauge-Hatch/Sample Well (8-in Dia.)/Weighted Mech. Actuation, Gasketed • 9-Roof Leg (3-in Dia.)/Adjustable, Double Deck Roof • 1- Unslotted Guidepole/ Well/Gasketed Sliding Cover, Wiper • 1-Vacuum Breaker (10 in Dia.)/ Weighted Mech. Actuation, Gasketed • 1-Automatic Gauge Float Well/Bolted Cover, Gasketed • 1-Roof Drain (3-in Dia.)/90% Closed	• 1-Access Hatch (24-in Dia.)/Bolted Cover, Gasketed • 1-Gauge-Hatch/Sample Well (8-in Dia.)/Weighted Mech. Actuation, Gasketed • 12-Roof Leg (3-in Dia.)/Adjustable, Pontoon Area, Sock • 3-Roof Leg (3-in Dia.)/Adjustable, Center Area, Sock • 1- Unslotted Guidepole/ Well/Gasketed Sliding Cover, Wiper • 1-Vacuum Breaker (10 in Dia.)/ Weighted Mech. Actuation, Gasketed • 1-Automatic Gauge Float Well/Bolted Cover, Gasketed
Other	• None	• None

* Throughput based on the A/N 107050 NSR calculation using 500 bbl/day.
** Throughput based on condition C1.xx limit of 30,000 bbl/month.

EMISSIONS CALCULATIONS:

This application proposes to:

- Change product to recovered oil (8.82 psia TVP)
- Increase throughput to 30,000 bbl/month
- Replace the external floating roof
- Add a geodesic dome roof cover

The change in VOC emissions due to the tank modification was calculated per Rule 1306(d)(2)(A) using the EPA TANKS 4.0 software package, and the storage tank specifications provided by the applicant. A copy of the TANKS 4.0 Emission Report is included in Attachment 3. The table below is a summary of the emission decrease:

Summary of VOC Emissions Decrease

A/N	Storage Tank #		VOC Losses for tank				
						Total	
			Rim Seal, lbs/year	Withdrawal, lbs/year	Roof Fitting, lbs/year	lbs/year	lbs/day*
499914	349 (D610)	External floating roof tank emissions (Pre-Modification)	4,066.20	24.09	1,243.54	5,333.83	14.82
		• Change product to recovered oil • Increase throughput to 30,000 bbl/month	3,395.94	45.83	1,038.56	4,480.33	12.45
		• Replace external floating roof • Add geodesic dome (Post-Modification)	648.22	45.83	737.17	1,431.22	3.98

* 30-day average

The modification of the storage tank (change product, increase throughput, replace external floating roof & add geodesic dome roof cover) is expected to decrease the VOC emissions.

Note: Pre-modification PTE was calculated as 5.08 lb/day VOC using the 1984 calculation methodology (and 5 lb/day was accumulated in NSR) when the primary seal was replaced in 1984 (A/N 107050, PTO M36975, see Attachment 5). Pre-modification PTE was recalculated as 14.82 lb/day using the Tanks 4.0 software.

The emission calculations using EPA TANKS 4.0 program utilized the following:

1. Emissions from External Floating Roof (Pre-Modification)

   Tank throughput = 500 bbl/day from AN 107050

   TVP = 11 psia, Rule 463(d)(4) limit

   Tank specifications as given on original Form 400-E-18

   Double deck external floating roof, w/o dome

2. Change product & throughput

   Tank throughput = 30,000 bbl/month, condition C1.xx limit

   TVP = 8.82 psia, condition B22.xx

   Tank specifications as given on original Form 400-E-18

   Double deck external floating roof, w/o dome

3. Emissions from Domed External Floating Roof (Post-Modification)

   Tank throughput = 30,000 bbl/month, condition C1.xx limit

   TVP = 8.82 psia, condition B22.xx

   Tank specifications as given on revised Form 400-E-18

   Pontoon external floating roof, with external geodesic dome added

A copy of the TANKS 4.0 Emission Report is included in Attachment 3.

RULES EVALUATION:

PART 1 STATE REGULATIONS

California Environmental Quality Act (CEQA)	
	These modifications are not a significant project.

PART 2 SCAQMD REGULATIONS

Rule 212	**Standards for Approving Permits** **November 14, 1997**
	These modifications meet all the criteria in Rule 212 for permit approval. Rule 212 public notice is not required. See Regulation XXX for Title V public notice requirements,
212(a)	The modifications were designed so the tank can 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.
212(b)	Does not apply; this is an application for a Permit to Construct/Operate.
212(c)(1)	The tank is not located within 1000 feet of a school.
212(c)(2)	The emission increase does not exceed the daily maximum specified in subdivision (g) of this rule (30 lbs/day VOC).
212(c)(3)	The tank does not have an increased cancer risk greater than, or equal to, one in a million ($1x\ 10^{-6}$) during a lifetime of 70 years or pose a risk of nuisance.

Rule 401	**Visible Emissions** **November 9, 2001**
	Visible emissions are not expected under normal operation.

Rule 402	**Nuisance** **May 7, 1976**
	Nuisance complaints are not expected under normal operating conditions.

Rule 463	**Organic Liquid Storage** **May 6, 2005**
	This rule applies to any above-ground tank with capacity 19,815 gallons or greater for storing organic liquids. This tank will store organic liquids with a true vapor pressure greater than 0.5 psia under actual storage conditions.
463(c)(1)	The domed external floating roof tank is subject to Rule 463(c)(1). The Tank #349 has a pontoon external floating roof. The roof has a mechanical shoe primary seal and a rim-mounted secondary seal. Roof openings project below the liquid surface and are kept covered except during maintenance/inspection.
	The domed external floating roof tank is subject to the requirements of Rule 463(d) - Other Performance Requirements:
463(d)(1)	Tank capacity is greater than 19,815 gallons. Therefore, this paragraph does not apply.
463(d)(2)	The external floating roof is designed to float on the organic liquid at all times (i.e., free of the roof leg supports) except when the tank is being completely emptied for cleaning, or repair.
463(d)(3)	The external floating roof shall be refloated with water or equivalent method approved by the District whenever the tank is gas-freed or refilled by gasoline.
463(d)(4)	The tank will not store organic liquids having a true vapor pressure of 11 psia or greater under actual storage conditions. Condition B22.xx limits TVP to 8.82 psia.
463(d)(5)	Replacement seals on the tank will only be chosen from the current list of seals approved by District.
	Compliance with Rule 463 is expected with proper recordkeeping and inspections. The Rule 463 inspection and maintenance plan will be updated to reflect installation of the dome roof cover.

Rule 1149	**Storage Tank Cleaning and Degassing** **May 2, 2008**
	The tank will continue to be subject to the tank cleaning and degassing requirements of this rule. Compliance is expected.

Rule 1178	**Further Reduction of VOC Emissions from Storage Tanks at Petroleum Facilities** **April 7, 2006**
1178(b)	Applicability. This rule applies to all aboveground storage tanks with capacity greater than 19,815 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. This tank will store organic liquids with a TVP greater than 0.1 psia and is therefore subject to Rule 1178.

Rule 1178	**Further Reduction of VOC Emissions from Storage Tanks at Petroleum Facilities** **April 7, 2006**
1178(d)(1)	External Floating Roof Tanks. For tanks containing organic liquids with a true vapor pressure less than 3 psia, each tank shall be equipped with the fittings specified in this paragraph. This tank will store organic liquids with a TVP which may exceed 3 psia. The tank is subject to the fittings requirements of Rule 1178(d)(1) for a domed external floating roof tank.
1178(d)(2)	Domed External Floating Roof Tanks. Tank #349 has not been in VOC service since 1995 (see email dated 10/30/2009); tank has been used to store aqueous ammonium sulfate. Tank #349 is not listed in the ConocoPhillips-Wilmington Rule 1178 compliance plan (A/N 457557), since the tank has not been in VOC service. The tank will be placed back in VOC service after modifications are completed.

Specifications:	**Tank #349 [D610]**
Contains more than 97%vol crude oil?	**No**
Maximum vapor pressure: psia	**8.82**

1178(d)(2)(D)	The external floating roof tank has been equipped with all roof openings in accordance with the specifications listed in subparagraph (d)(1)(A):

(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.	Yes
(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.	Yes
(iii) Gasket or cover each adjustable roof leg with a VOC impervious sock at all times when the roof is floating.	Yes

Rule 1178	**Further Reduction of VOC Emissions from Storage Tanks at Petroleum Facilities**	**April 7, 2006**

Specifications:	**Tank #349 [D610]**
(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
(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.	Yes
(vi) Equip each open floating roof drain with a slotted membrane fabric cover or other device with an equivalent control efficiency that covers at least 90 percent of the area of the opening.	N/A
(vii) Equip each unslotted guidepole well with a gasketed sliding cover and a flexible fabric sleeve or wiper	Yes
(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.	Yes
(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
(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.	N/A

Rule 1178	**Further Reduction of VOC Emissions from Storage Tanks at Petroleum Facilities**	**April 7, 2006**

Specifications:	**Tank #6 [D549]**
(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.	N/A
(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.	N/A
(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.	Yes
(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.	Yes

1178(d)(2)(E)	The external floating roof tank has been equipped with seals in accordance with the specifications listed in subparagraph (d)(1)(B):

Specifications:	**Tank #349 [D610]**
(i) The primary seal shall be a mechanical shoe or liquid mounted.	Yes mechanical shoe
(ii) The secondary seal shall be rim mounted and shall not be attached to the primary seal.	Yes

1178(d)(2)(F)	The concentration of organic vapor in the vapor space above the external floating roof shall not exceed 30% LEL. Dome not yet installed.
	Compliance with Rule 1178 is expected.

REG XIII	**New Source Review (NSR)** **December 6, 2002** **Application Deemed Complete: 2009**

Tank #349 was constructed in 1955.

The initial NSR balance was calculated when the primary seal was replaced in 1984 (A/N 107050, PTO M36975, see Attachment 5). The PTE was 5.08 lb/day VOC using the 1984 calculation methodology, and 5 lb/day was accumulated in NSR.

Pre-modification PTE has been recalculated as 14.82 lb/day using the Tanks 4.0 software.

This application proposes to:

- Change product to recovered oil (8.82 psia TVP)
- Increase throughput to 30,000 bbl/month
- Replace the external floating roof
- Add a geodesic dome roof cover

The change in VOC emissions due to the tank modification was calculated per Rule 1306(d)(2)(A) using the EPA TANKS 4.0 software package. Post-modification PTE is directly limited by permit condition B22.xx (TVP $\leq$ 8.82 psia) and condition C1.xx (tank throughput $\leq$ 30,000 bbl/month).

A/N	Storage Tank #		VOC Emissions	
			lbs/year	lbs/day*
499914	349 (D610)	External floating roof tank emissions (Pre-Modification)	5,333.83	14.82
		• Change product to recovered oil • Increase throughput to 30,000 bbl/month	4,480.33	12.45
		• Replace external floating roof • Add geodesic dome (Post-Modification)	1,431.22	3.98

* 30-day average

The tank modifications will reduce the estimated VOC emissions to 4 lb/day. The Tanks 4.0 emission calculations are included as Attachment 3.

Rule 1303(a): BACT & Rule 1303(b)	The requirements of Rules 1303(a) and 1303(b) do not apply to this equipment modification since there is no emission increase [calculated per the Rule 1306(d)(2)(A) method] for this equipment modification. Note that this tank will be equipped with current BACT: domed roof cover and compliance with Rule 1178. No VOC offsets are required.

REG XIII	**New Source Review (NSR)**	**December 6, 2002** **Application Deemed Complete: 2009**

	NSR VOC Emissions	
	Pre-mod	Post-mod
	A/N 326386	A/N 499914
Tank #349	5 lb/day	4 lb/day

Rule 1401	**New Source Review of Toxic Air Contaminants**	**June 5, 2009** **Application Deemed Complete: July 22, 2009**

This application proposes to replace the external floating roof and add an external geodesic dome roof cover to comply with Rule 1178. MICR, cancer burden and chronic HI are calculated per Rule 1401(f)(3) and acute HI is calculated per Rule 1401(f)(4). For Tank #349 (D610), the permit condition C1.xx (tank throughput limited to 30,000 bbl/month) directly limits the annual emissions.

The MICR, cancer burden, HIC and HIA are assumed to be zero prior to the modification. There is a potential increase in TAC emissions due to the change in the materials stored in this tank (recovered oil).

Rule 1401 risk calculations are found in Attachment 4.

MICR – residential = 1.50×10^{-8}

MICR – commercial = 9.34×10^{-9}

All HIA & HIC <1.0

Federal NSR for toxics does not apply since this is not considered a reconstruction per 40CFR63, Subpart A, §63.2.

This tank modification meets all requirements given in Rule 1401(d).

REG XX	**RECLAIM**	**May 6, 2005**

ConocoPhillips-Wilmington has been designated as a RECLAIM facility. This tank does not emit NO_x or SO_x; therefore, RECLAIM requirements do not apply.

REG XXX	**Title V**	**March 16, 2001**
	ConocoPhillips-Wilmington was issued a Title V permit effective July 1, 2009. This is a **significant permit revision** as defined in Rule 3000(b)(28).	
	(b)(28)(J)	This revision is a modification (replace external floating roof, add geodesic dome and store recovered oil), of existing equipment (Storage Tank #349), resulting in an emission increase (benzene and other HAP's), subject to additional NESHAP requirements pursuant to 40 CFR Part 61, Subpart FF – National Emission Standards for Benzene Waste Operations, and 40 CFR Part 63, Subpart CC – Group 1 Storage Vessel.
	A significant permit revision is subject to a **45-day EPA review**, Rule 3003(j) and subject to **public participation** requirements, Rule 3006(b).	

PART 3 FEDERAL REGULATIONS

40CFR Part 60 Subpart Kb	**Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commences after July 23, 1984**
§60.110b(a)	Applicability – This tank will be subject to Subpart Kb in order to meet the requirements of Subpart FF by §61.351(a)(2) – Alternative standards for tanks: An external floating roof meeting the requirements of 40CFR Part 60 Subpart Kb.
§60.110b(a)(2)	This tank has a pontoon roof which rests on the liquid surface.
§60.110b(a)(2)(i)	This tank has two seals, one above the other. The primary seal is a mechanical shoe seal, which completely covers the annular space between the roof and the tank wall. The secondary seal is rim-mounted and completely covers the annular space between the roof and the tank wall.
§60.110b(a)(2)(ii)	The roof fitting requirements are met by the SCAQMD Rule 1178 requirements.
§60.110b(a)(2)(iii)	The external roof is designed to float on the product.
§60.113b & §60.115	Tank inspection, reporting & recordkeeping are met by SCAQMD Rule 463/1178 requirements.
	This tank complies with the tank design/control requirements of this regulation. The tank will be added to the facility tank inspection program. This tank will be subject to Subpart Kb per Condition H23.9.

40CFR Part 61 Subpart FF	**National Emission Standard for Benzene Waste Operations**
	Per §61.340, ConocoPhillips-Wilmington is subject to this regulation. This tank stores "recovered oil" which is oil recovered from the API wastewater separators, oil collected in the flare knock-out drums and other waste oil from the process units. This storage tank meets the Subpart FF definition for a tank given in §61.341: a stationary waste management unit that is designed to contain an accumulation of waste prior to being recycled. The tank meets the requirements of Subpart FF by §61.351(a)(2) – Alternative standards for tanks: An external floating roof meeting the requirements of 40CFR Part 60 Subpart Kb.

40CFR Part 63 Subpart CC	**National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries**
§60.640(a)	Applicability – This storage tank is located at a site that is a major source as defined in section 112(a) of the Clean Air Act [This refinery emits 25 tons or more of hazardous air pollutants (HAPs)]. This tank emits one or more HAPs listed in table 1 of this subpart.
§60.640(c)(2)	This storage tank is part of the wastewater treatment operations associated with petroleum refining process units.
§60.643	This storage tank is a Group 1 storage vessel at an existing source, with: • Tank capacity ≥ 177 m^3 (46,758 gal) • Maximum TVP ≥ 10.4 kPa (1.5 psia) • Annual average TVP ≥ 8.3 kPa (1.2 psia) • Annual average total HAPs liquid concentration ≥ 4%wt The facility has indicated that the tank contents exceed 4%wt HAPs, and this tank will be designated as a Group 1 tank.
§60.640(n)(1)	Per Condition H23.9, this Group 1 tank is subject to 40CFR60 Subpart Kb. A Group 1 tank that is part of an existing source and also subject to 40CFR60 Subpart Kb is required to comply only with the requirements of Subpart Kb.

CONCLUSION

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

A/N	Recommendation
499914	Issue Permit to Construct/Operate (PC-PO) with conditions listed in the Conditions Section
499913	Approve Plan (Title V Significant Permit Revision)

List of Attachments

1. ConocoPhillips – Wilmington Facility Permit (ID 800363), Sections D
2. Tanks 4.0 Emission Calculations
3. AQMD Compliance Database (12/9/2009)
4. Rule 1401 Risk Assessment Calculations
5. A/N 107050 -- Emission calculations & NSR entry