



SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

STATIONARY SOURCE COMPLIANCE DIVISION

APPLICATION PROCESSING AND CALCULATIONS

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533856

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**PERMIT TO CONSTRUCT/PERMIT TO OPERATE**

**- Modification -  
A/N 533856**

**COMPANY NAME:** Chevron Products Company

**MAILING ADDRESS:** 324 W. El Segundo Blvd.  
El Segundo, CA 90245

**EQUIPMENT LOCATION:** 324 W. El Segundo Blvd.  
El Segundo, CA 90245

**BACKGROUND / SUMMARY:**

Chevron is replacing the pontoon roof for Storage Tank No. 1004 (D1448). The new pontoon roof will be constructed according to API 650/653 standards. Due to these design standards, the new pontoon roof will have 147 legs versus 98 legs for the existing roof. The tank will have an increase in VOC emissions due to the increased number of roof legs. Chevron also requests that the equipment description for the tank be revised to include the existing unslotted guidepole.

**EQUIPMENT DESCRIPTION:**

The subject storage tank is currently operating under a permit to operate (PO) in Section D of the RECLAIM/Title V Facility Permit. A permit to construct/permit to operate is proposed for issuance in Section D of the RECLAIM/Title V Facility Permit. The proposed permit pages are contained in this section. In these proposed permit pages, new text is indicated by underline and deleted text is indicated by strikeout.

**Section D: Facility Description and Equipment Specific Conditions**

Description	ID No.	Connected To	RECLAIM Source Type	Emissions and Requirements	Conditions
<b>Process 16: Storage Tanks</b>					P13.1
<b>System 3: External Floating Roof Tank</b>					S13.3
STORAGE TANK, EXTERNAL FLOATING ROOF, NO. 1004, 438600 BBL; DIAMETER: 230 FT; HEIGHT: 64 FT WITH FLOATING ROOF, PONTOON, WELDED SHELL PRIMARY SEAL, CATEGORY A, METALLIC SHOE	D1448			HAP: (10) [40CFR 63 Subpart CC, #2, 6-23-2003]	<u>B22.33, C1.154, E71.73, K67.54,</u> <del>K67.67</del>



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Description	ID No.	Connected To	RECLAIM Source Type	Emissions and Requirements	Conditions
SECONDARY SEAL, CATEGORY B OR BETTER PER RULE 219(C)(4), RIM MOUNTED  <u>GUIDEPOLE, UNSLOTTED, WITH GASKETED SLIDING COVER, WIPER, AND GASKETED COVER AT THE TOP</u> A/N: C17399 533856					

**PROCESS CONDITIONS**

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

Contaminant	Rule	Rule/Subpart
Benzene	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, 14, **16**]

**SYSTEM CONDITIONS:**

**S13.3** All devices under this system are subject to the applicable requirements of the following rules or regulations:

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

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

[Systems subject to this condition: Process 16, System 1, 2, **3**, 5]

**DEVICE CONDITIONS**

**B22.33** The operator shall only use this equipment with materials having a(n) true vapor pressure of 0.1 psia or less under actual operating conditions.

[**RULE 1303(b)(2)-Offset, 5-10-1996**]

[Devices subject to this condition: **D1448**]

**C1.154** The operator shall limit the throughput to no more than 574,292 barrels in any one calendar month.



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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 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 the time that the ATLG went out of service.

**[RULE 1303(b)(2)-Offset, 5-10-1996]**

[Devices subject to this condition: [D1448](#)]

**E71.73** The operator shall only use this equipment for the storage of gas oil.

[RULE 1401, 9-10-2010]

[Devices subject to this condition: [D1448](#)]

**K67.54** 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/product stored and time period of its storage.

Actual vapor pressure, in psia, of each commodity/product stored.

Other records that may be required to comply with the applicable requirements of District Rules 463, 1149, 1178, and 40CFR63, Subpart CC.

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

[Devices subject to this condition : D1324, D1351, D1356, D1357, D1360, D1361, D1363, D1366, D1378, D1393, D1421, D1422, D1424, D1426, D1428, D1430, D1436, D1437, D1440, D1445, D1446, D1447, [D1448](#), D1449, D1451]



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**K67.67** 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 the stored product

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

[Devices subject to this condition : D1270, D1277, D1278, D1279, D1280, D1282, D1283, D1285, D1286, D1287, D1288, D1290, D1291, D1292, D1301, D1303, D1313, D1314, D1315, D1316, D1317, D1318, D1325, D1332, D1345, D1349, D1350, D1354, D1355, D1370, D1383, D1400, D1403, D1404, D1405, D1408, D1409, D1411, D1416, D1417, D1418, D1420, D1431, D1434, D1443, **D1448**, D1461, D1472, D1874]

**COMPLIANCE RECORD REVIEW**

No NC's or NOV's have been issued for the subject tank over the last three year period.

**FEE ANALYSIS**

**Summary of Fee Analysis**

A/N	Equipment Description (Based on BCAT/CCAT)	BCAT/ CCAT	Fee Schedule	Fee Type	Fiscal Year (1)	Fee
533856	Storage Tank w/Ext Floating Roof - Crude	231904 (BCAT)	C	Modification	11-12	\$ 3,359.43
533787	RECLAIM/Title V Permit	555009 (BCAT)	na.	RECLAIM/Title V Permit Revision	11-12	\$ 1,747.19
					<b>Total Fees</b>	<b>\$ 5,106.62</b>
					<b>Fees Paid (2)</b>	<b>\$ 6,786.34</b>
					<b>Outstanding Balance</b>	<b>\$ -1,679.72</b>

(1) Based on the date that the application was submitted.

(2) Chevron paid 50% additional fee for expedited processing of each of the tank applications. No overtime was spent on the applications so the additional fee of \$1,679.72 will be refunded.

**PERMIT HISTORY**

A history of previous permits for the subject storage tank is contained in the table below.

**Permit History for Tank 1004 (D1448)**

Permit to Construct		Permit to Operate		Description of Modification
No.	Issue Date	No.	Issue Date	
A55054	5/22/69	P42284	1/17/72	Tank construction.
C17399	4/19/78	M12464	12/29/80	Installation of a secondary seal for Rule 463 compliance.
533856	na.	na.	na.	Replacement of the external pontoon floating roof.



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## COMPLIANCE RECORD REVIEW

There are no ongoing violations for any of the equipment covered in this evaluation.

## PROCESS DESCRIPTION:

A description of each tank is contained in the equipment description above. It is a 438,600 barrel external floating roof tank with a diameter of 230 feet and a height of 64 feet. It has a pontoon roof and unslotted guidepole. It will be permitted to store gas oil with a vapor pressure of 0.1 psia or less.

## CALCULATION

Since the this tank has never been subject to NSR, the net emission increase caused by an increase in the number of roof legs is calculated according to Rule 1306(d)(2) as the post-modification maximum potential to emit (PTE) calculated pursuant to 1306(b) minus the pre-modification actual emissions calculated pursuant to Rule 1306(c)(1).

According to 1306(b), the post modification maximum PTE is calculated from permit conditions which directly limit the emissions or, when no such conditions are imposed, from: (1) the maximum rated capacity; and (2) the maximum daily or monthly hours of operation as applicable; and (3) the physical characteristics of the material processed. Since the subject tank is not subject to direct emission limits, the physical properties and maximum throughput of the commodity with the highest vapor pressure is utilized to estimate the post-modification maximum PTE. To limit the maximum PTE of the subject tank, the permit will be conditioned with throughput and vapor pressure limits.

According to 1306(c)(1), the pre-modification emissions are calculated as the average annual actual emissions during the two-year period immediately preceding the date of permit application, or other appropriate period determined by the Executive Officer or designee to be representative of the source's cyclical operation, and consistent with federal requirements. These actual emissions are determined from company records including annual emissions declarations pursuant to Rule 301 or other approved data.

According to Chevron, leaks were identified in the roof of the subject storage tank in 2010. The tank was taken out of service during the latter part of 2010 after attempts to repair the roof failed. At that time, Chevron determined that the roof needed to be replaced to meet the requirements of API Standards 650 and 653. Chevron drained the tank between mid and late 2011. Cleaning and internal inspection of the tank began in January 2011. As a result, the two-year period between 2010 and 2011 does not represent normal operation for the tank. According to Chevron, a tank, depending on operational need and availability, are required to be taken out of service typically every three to five years or sometimes at a longer cycle. Since the roof replacement will be performed together with the tank's next turnaround activities, the two-year period of 2009 and 2008 is determined to be representative of the tank's cyclical operation. The annual emissions for these two years will be used instead of 2011 and 2010 in determining the pre-modification emissions from the tank.



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Post-modification VOC emissions for the tank are estimated with the EPA Tanks 4.0.9d program with a throughput of 6,891,500 bbls/yr and maximum vapor pressure of 0.1 psia. As discussed above, the pre-modification VOC estimate is the average of the estimated VOC emissions in the 2008 and 2009 Annual Emissions Reports (AERs). The pre- and post-modification throughput and VOC emission estimates are shown in the following table. A copy of each of the EPA Tanks 4.0.9d printouts is contained in the application folder.

Summary of VOC Emission Estimate

Pre-Modification			Post-Modification			Emission Increase
Throughput	Estimated Emissions		Throughput	Estimated Emissions		
bbl/year	lb/day (3)	lb/year	bbl/year	lb/day (3)	lb/year	lb/day (3)
3,361,712 (1)	0.52 (2)	186	6,891,500	1.49	537	0.98

(1) 2-yr avg. throughput for 2008 – 2009 = [(147,333,900 gal/yr + 135,049,898 gal/yr)/2]/42 bbl/yr

(2) Based on VOC emissions estimate of 167.9 lb/yr in the 2008 AER and 204.3 lb/yr in the 2009 AER.

(3) 30-day average = Annual emissions / 360

RULE EVALUATION

California Environmental Quality Act (CEQA)

The California Environmental Quality Act (CEQA), Public Resources Code Section 21000 et seq., requires that the environmental impacts of proposed “projects” be evaluated and that feasible methods to reduce, avoid or eliminate significant adverse impacts of these projects be identified and implemented. According to the District’s CEQA Guidelines, the net emission increase thresholds for significant effect are:

ROG (VOC): 55 lb/day  
 PM10: 150 lb/day  
 CO: 274 lb/day

CEQA analysis is not required for the replacement of the roof for the subject tank since the increase in VOC emissions is less than the significance threshold and there are no other significant environmental impacts. On the 400-CEQA form, Chevron marked “No” to all of the additional criterion that may trigger CEQA. For these reasons, CEQA does not apply.



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**Regulation II: Permits**

**Rule 212: Standards for Approving Permits**

**212(c)(1):** Public notice is required for a project if any of the modified permit units are located within 1000 feet of a school. Public notice is not required under this clause since the subject storage tank is not within 1000 feet of a school.

**212(c)(2):** Public notice is required for any “new or modified facility”, which has on-site emission increases exceeding any of the daily maximums specified in subdivision (g) of Rule 212. The 212(g) emission thresholds are shown in the table below. Public notice is not required under this clause since the increase in VOC emissions for the subject tank is less than the Rule 212(g) threshold of 30 lb/day.

Air Contaminant	R212(g) Daily Maximum Threshold (lb/day)	Emission Increase for A/N 533856 (lb/day)
CO	220	0
NOx	40	0
PM10	30	0
SOx	60	0
VOC	30	0.98
Lead	3	0

1) Increase in 30-day average maximum potential to emit.

**212(c)(3):** Public notice is required for any new or modified permit units that have an increase in toxic air contaminants that results in an increase of maximum individual cancer risk (MICR) of more than one in a million ( $1 \times 10^{-6}$ ) during a lifetime (70 years). As discussed in additional detail in the evaluation of Rule 1401, replacement of the roof does not cause an increase in MICR of more than  $1 \times 10^{-6}$ . Public notice is not required under this clause.

**212(g):** 212(g) specifies that any new or modified sources subject to Regulation XIII which undergo construction or modifications resulting in an emissions increase exceeding any of the daily maximum emission thresholds (listed in the table above) will require notification. From Regulation XIII (Rule 1302), the definition of “Source” is any permitted individual unit, piece of equipment, article, machine, process, contrivance, or combination thereof, which may emit or control an air contaminant. This includes any permit unit at any non-RECLAIM facility and any device at a RECLAIM facility.

Public notice is not required under this clause since the increase in VOC emissions for the roof replacement is less than the Rule 212(g) threshold of 30 lb/day.



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**Regulation IV: Prohibitions**

**Rule 401: Visible Emissions**

This rule specifies that a person shall not discharge emissions from a source for a period or periods aggregating more than three minutes in any one hour which are as dark or darker in shade as that designated No. 1 on the Ringelmann Chart or emissions of such opacity that it obscures an observers view to an equal or greater level. This is equivalent to opacity of 20%.

Operation of the subject tank is not expected to cause any visible emissions. Compliance with this rule is expected.

**Rule 402: Nuisance**

This rule requires that a person not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which cause, or have a natural tendency to cause injury or damage to business or property.

This tank does not have a history of causing nuisance. Replacement of the roof is not expected to impact nuisance potential. Compliance is expected.

**Rule 463: Storage of Organic Liquids**

This rule applies to any above-ground stationary tank with a capacity of 75,000 liters (19,815 gallons) or greater used for storage of organic liquids, and any above-ground tank with a capacity between 950 liters (251 gallons) and 75,000 liters (19,815 gallons) used for storage of gasoline.

The storage tank is subject to applicable requirements of this rule since it stores organic liquids and has a capacity greater than 19,815 gallons.

Most of the control and performance requirements of this rule are specified in 463(c). These requirements are applicable to tanks with a capacity of 150,000 liters (39,630 gallons) or greater that store organic liquids with a true vapor pressure (TVP) of 25.8 mm Hg (0.5 psi) absolute or greater under actual storage conditions and storage tanks with a capacity between 75,000 liters (19,815 gallons) and 150,000 liters (39,630 gallons) that store organic liquids with a TVP of 77.5 mm Hg (1.5 psi) absolute or greater under actual storage. Storage Tank 1004 is not subject to the requirements of Rule 463(c) since it will not be permitted to store any organic liquids with a vapor pressure greater than 0.1 psia.

Other performance requirements are specified in 463(d) as discussed below.

**463(d)(1) requires** a pressure-vacuum valve to be set within 10 percent of the maximum working pressure of the tank, for storage tanks between 251 and 19, 815 gallons. This requirement does not apply to the subject tank since its capacity is greater than 19,815 gallons.

**463(d)(2) requires** the roof to float on the stored organic liquid at all time, except when emptied for cleaning or repair. The applicant is expected to comply with this requirement.

**463(d)(3) is** only applicable to tanks that store gasoline.



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**463(d)(4) limits** the maximum vapor pressure to no more than 11 psia. The tank will be limited to the storage of commodities with a maximum vapor pressure of 0.1 psia. Compliance with this requirement is expected.

**463(d)(5) requires** replacement seals to be chosen from a list approved by the Executive Officer. The applicant is expected to comply with this requirement.

The tank is subject to some reporting and recordkeeping requirements in 463(f). Compliance with these requirements is expected.

**Regulation IX: Standards of Performance for New Stationary Sources (NSPS)**

**40CFR60: Subpart Kb (Construction, Reconstruction or Modification after 7-23-84)**

Applicable facilities under this subpart are storage vessels with a capacity greater than 20,000 gallons that are used to store volatile organic liquids (VOL's) for which construction, reconstruction, or modification is commenced after July 23, 1984.

According to §60.110(b), this subpart does not apply to storage vessels with a capacity greater than or equal to 151 m<sup>3</sup> (~40,000 gallons) storing a liquid with a maximum true vapor pressure less than 3.5 kilopascals (0.5 psia) or with a capacity greater than or equal to 75 m<sup>3</sup> (~20,000 gallons) but less than 151 m<sup>3</sup> (~40,000 gallons) storing a liquid with a maximum true vapor pressure less than 15.0 kPa.

The subject storage tank is not subject to any requirements of this regulation since it will only store organic liquids with a vapor pressure of 0.1 psia or less.

**Regulation X: National Emission Standards for Hazardous Air Pollutants (NESHAPS)**

**40CFR63: Subpart CC: National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries**

This Subpart applies to petroleum refining sources and related emission sources that are specified in section 63.640 (c) (5) through (c) (7) [e.g. miscellaneous process vents (except for FCCU, SRU, and CRU vents), storage vessels, wastewater stream, equipment leaks, gasoline loading racks, marine vessel loading, etc.] that are located in a major source and emit or have equipment contacting one or more of the hazardous air pollutants (HAPs) listed in Table 1 of this subpart. This subpart took effect on August 18, 1998 and was last amended on October 28, 2009.

The definition of a Group 2 storage Vessel is any "storage vessel that does not meet the definition of a Group 1 storage vessel." A Group 1 storage vessel is defined as a "storage vessel at an existing source that has a design capacity greater than or equal to 177 cubic meters (46728 gallons) and stored-liquid maximum vapor pressure greater than or equal to 10.4 kilopascals (1.5 psia) and stored-liquid annual average true vapor pressure greater than or equal to 8.3 kilopascals (1.2 psia) and annual average HAP liquid concentration greater than 4 percent by weight total organic HAP."



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Storage tank 1004 is a Group 2 tank since the maximum vapor pressure is less than 1.5 psia and the HAP concentration is below 4 percent by weight. This regulation does not contain any specific requirements for the physical configuration of the tank or floating roof (and fittings) for Group 2 storage tanks. The replacement of the pontoon roof will not impact compliance with this rule.

**Regulation XI: Source Specific Standards**

Rule 1149: Storage Tank Degassing (May 2, 2008)

1149(c)(1) contains the requirement that VOC emissions be controlled during cleaning /degassing activities for all tanks that meet the specified volume / vapor pressure thresholds. The threshold levels are:

- Volume ≥ 500 gallons and < 26,420 gallons with Reid vapor pressure (RVP) > 3.9 psi, or
- Volume ≥ 26,420 gallons and < 100,000 gallons with Reid vapor pressure (RVP) > 2.6 psi, or
- Volume ≥ 100,000 gallons with RVP > 0.5 psi

The subject tank is not subject to the control requirements of this rule since it stores an organic liquid with an RVP less than 0.5 psia.

Rule 1178: Further Reductions of VOC emissions from Storage Tanks at Petroleum Facilities

This rule is applicable to this facility since it is a petroleum refinery with facility wide VOC emissions exceeding the 20 ton/year VOC threshold. This rule applies to all aboveground storage tanks that have capacity equal to or greater than 75,000 liters (19,815 gallons), are used to store organic liquids with a true vapor pressure greater than 5 mm Hg (0.1 psi) absolute under actual storage conditions.

The subject tank is not subject to this regulation since it will not store organic liquids with a true vapor pressure greater than 0.1 psia.

**Regulation XIII: New Source Review**

As specified in Rule 1301, Regulation XIII, sets forth pre-construction review requirements for new, modified, or relocated facilities, to ensure that the operation of such facilities does not interfere with progress in attainment of the national ambient air quality standards (NAAQS), and that future economic growth within the South Coast Air Quality Management District (District) is not unnecessarily restricted. The specific air quality goal of this regulation is to achieve no net increases from new or modified permitted sources of nonattainment air contaminants or their precursors.

The South Coast Air Basin (SOCAB) is designated in attainment of the NAAQSs for CO, NOx and SOx. The following are currently considered nonattainment air contaminants that are subject to new source review (NSR): NOx, SOx, PM<sub>2.5</sub>, PM<sub>10</sub>, and VOC. NOx and VOC are included since they are precursors for ozone. NOx, SOx and VOC are included as PM<sub>2.5</sub> and PM<sub>10</sub> precursors.



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NSR requirements for these nonattainment pollutants are specified in the following rules:

- Rule 1303 – PM10 and VOC (all facilities); NOx and SOx (non-RECLAIM facilities)
- Rule 1325 – PM2.5
- Rule 2005 – NOx and SOx (RECLAIM facilities)

Since Chevron is a RECLAIM facility, it is subject to the NSR requirements for NOx and SOx specified in Rule 2005 of the RECLAIM regulation (Regulation XX). Sources that emit ammonia, CO, and Ozone Depleting Compounds (ODCs) are subject to only the BACT requirements of Rule 1303 for these pollutants.

**Rule 1303: Requirements**

This rule requires the Executive Officer to deny a Permit to Construct for any new, modified or relocated source which results in an emission increase of CO, PM10, VOC, any ozone depleting compound, or ammonia, unless BACT is used. This rule also requires modeling for a net increase in PM10 and offset (among other requirements) for a net increase in PM10 or VOC emissions for any new or modified source.

The subject storage tank does not emit ammonia, ODCs, CO, PM<sub>10</sub>, NOx or SOx. Therefore, it is only subject to NSR requirements for VOC.

**1303(a) - Best Available Control Technology (BACT):** Any new or modified source which results in an emission increase of any nonattainment air contaminant, any ozone depleting compound, or ammonia, must employ BACT for the new or relocated source or for the actual modification to an existing source. Per District policy, BACT is required for any increase in emissions that exceeds 1.0 lb per day on a maximum daily basis.

BACT is not required since the increase in VOC emissions is 0.98 lb/day, which is below the 1.0 lb/day threshold.

**1303(b)** – The following requirements apply to any new or modified source which results in a net emission increase of any nonattainment air contaminant. The subject tank is subject to these requirements since the roof replacement causes a net increase in VOC emissions.

**1303(b)(1): Modeling** - The applicant must substantiate with modeling that the new facility or modification will not cause a violation, or make significantly worse an existing violation of any state or national ambient air quality standards at any receptor location in the District. According to 1306(b), the new total emissions for modified sources shall be calculated on a pound per day basis for determination of BACT and modeling applicability. The modeling procedures are discussed in Appendix A to the rule. It is specified in Appendix A that modeling is not required for VOC or SOx.

Modeling is not required for the subject storage tank since it emits only VOC.

**1303(b)(2): Offsets** – Unless exempt from offsets requirements pursuant to Rule 1304, emission increases shall be offset by either Emission Reduction Credits approved pursuant to Rule 1309, or by allocations from the Priority Reserve. Per District policy, Offsets are required for any increase in emissions that is equal to or greater than 0.42 lb per day on a 30-



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day average basis. It is also District policy that offsets are calculated on a project basis. Since the refinery is located in the South Coast Air Basin (SOCAB), an offset ratio of 1.2-to-1.0 is required.

As seen in the following equation, Chevron will be required to provide 1 lb/day of VOC ERCs:  $0.98 \text{ lb/day} \times 1.2 = 1.18 \text{ lb/day}$ , which rounds down to 1 lb/day of ERC.

**1303(b)(3) - Sensitive Zone Requirements:** This section pertains to Emission Reduction Credits (ERCs) for facilities in the South Coast Air Basin (SOCAB). Except for credits that are obtained from the Priority Reserve, facilities are subject to the Sensitive Zone requirements (H&SC Section 40410.5) for ERCs. A facility in zone 1 may obtain ERCs originated in zone 1 only, and a facility in zone 2A may obtain ERCs from either zone 1 or zone 2A.

The El Segundo Refinery is located in Zone 1. Chevron will utilize ERC certificate no. AQ011395 to offset the 1 lb/day of VOC. The ERCs in ERC certificate no. AQ011047 were originally generated under ERC certificate number AQ000535 in 1991 at the AMVAC Chemical Corp. facility (ID 016865) located in Los Angeles, which is in Zone 1.

**1303(b)(4) - Facility Compliance:** The facility must be in compliance with all applicable rules and regulations of the District. Enforcement records were reviewed to determine current facility compliance status. According to the best knowledge of this reviewer, the Chevron El Segundo Refinery is currently in compliance with all applicable rules and regulations of the District.

**1303 (b)(5) - Major Polluting Facilities:** Any new major polluting facility (source) or major modification at an existing major polluting facility (source) must comply with the requirements of this section. A major modification is defined in 1302(r) as any modification at an existing major source that will cause

- an increase of one pound per day or more, of the facility's potential to emit (PTE) for NOx or VOC if the facility is located in the SOCAB , or
- an increase of 40 tons per year or more, of the facility's PTE for SOx, or
- an increase of 15 tons per year or more, of the facility's PTE for PM<sub>10</sub>; or,
- an increase of 50 tons per year or more, of the facility's PTE for CO.

The requirements of this section are not applicable since the increase in estimated VOC emissions for the reconstruction of this tank is less than 1 lb/day.

Rule 1325: Federal PM2.5 New Source Review Program

This NSR rule for PM2.5 was adopted by the District's Governing Board on June 3, 2011. The subject storage tank is not subject to any requirements under this regulation since it does not emit PM2.5.



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### **Regulation XIV: Toxic Air Contaminants**

#### **Rule 1401 New Source Review of Toxic Air Contaminants**

**Requirements** – Rule 1401 contains the following requirements:

- 1) *(d)(1) MICR and Cancer Burden* - The cumulative increase in MICR which is the sum of the calculated MICR values for all toxic air contaminants emitted from the new, relocated or modified permit unit will not result in any of the following:
  - (A) an increased MICR greater than one in one million ( $1.0 \times 10^{-6}$ ) at any receptor location, if the permit unit is constructed without T-BACT;
  - (B) an increased MICR greater than ten in one million ( $1.0 \times 10^{-5}$ ) at any receptor location, if the permit unit is constructed with T-BACT;
  - (C) a cancer burden greater than 0.5.
- 2) *(d)(2) Chronic Hazard Index* - The cumulative increase in total chronic HI for any target organ system due to total emissions from the new, relocated or modified permit unit will not exceed 1.0 at any receptor location.
- 3) *(d)(3) Acute Hazard Index* - The cumulative increase in total acute HI for any target organ system due to total emissions from the new, relocated or modified permit unit will not exceed 1.0 at any receptor location.

**Analysis** – Gas oil contains low levels of benzene, toluene, ethylbenzene and xylenes (BTEX), which are all VOCs. Therefore, the increase in health risk is evaluated as specified in Rule 1401. A Tier I screening analysis is performed. The tank is located more than 600 meters from the nearest residential and commercial receptors. Therefore, the 100 meter screening emission levels is utilized in the screening analysis. Chevron had a representative sample of gas oil analyzed for BTEX. The concentrations of each of the BTEX are below the method detection limit of 0.01 weight percent (wt%). Therefore, a wt% of 0.01 is utilized for each of the BTEX in the EPA Tanks 4.09d emission estimates.

The maximum permitted tank throughput of 6,891,500 bbls/yr is utilized in the EPA Tanks 4.09d program to estimate maximum annual BTEX emissions. A tank throughput of one turnover (438,600 bbl) per day is utilized in the EPA Tanks 4.09d program to estimate the maximum hourly BTEX emissions [annual emissions/365/24]. As a conservative estimate of the BTEX emission increase, the pre-modification BTEX emissions are ignored.

The results of the Tier 1 Screening Analysis are shown in the table below. A copy of the EPA Tanks 4.09d printout showing the TAC emission estimate is contained in the application folder. Since the Cancer/Chronic and Acute Screening Indexes are less than 1.0, compliance with this rule is achieved.



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Results of Tier I Screening Analysis (100 meters)

Toxic Air Contaminant	Cancer/Chronic			Acute		
	Emission Rate (lb/yr)	Screening Level (lb/yr)	Chronic Hazard Index	Emission Rate (lb/hr)	Screening Level (lb/hr)	Acute Hazard Index
Benzene	0.93	8.92	1.0E-01	0.0002	3.96	4.6E-05
Ethylbenzene	0.12	517,000	2.3E-07	na.	none	na.
Toluene	0.29	77,500	3.7E-06	0.0001	99.1	1.1E-06
Xylene	0.32	181,000	1.8E-06	0.0003	58.9	4.5E-06
<b>Total</b>			1.0E-01			5.2E-05

**Regulation XVII - Prevention of Significant Deterioration (PSD)**

The PSD program is the federal New Source Review (NSR) program for pollutants for which an area is in attainment with or unclassified with respect to a National Ambient Air Quality Standard (NAAQS) and for Greenhouse Gases (GHGs).

**Rule 1703 – PSD Analysis (& Associated Rules 1701, 1702, 1704, 1706, 1710 & 1713)**

These rules contain the PSD requirements for attainment pollutants and selected unclassified pollutants. As discussed earlier, SOCAB is currently designated as attainment with NAAQSs for SO2, NO2, CO, and Lead. The subject tank is not subject to any requirements under this regulation since it does not emit CO, NO2, SO2, or Lead.

**Rule 1714 – Prevention of Significant Deterioration for Greenhouse Gases**

This rule sets forth preconstruction review requirements for greenhouse gases (GHG), which is defined as an aggregate group of six GHGs: carbon dioxide, nitrous oxide, methane, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride.

The pollutant GHG is subject to requirements under this regulation if either of the following applies:

- A stationary source, which is an existing major stationary source for a regulated non-GHG NSR pollutant, has an emissions increase of at least 75,000 tpy CO<sub>2</sub>e and also an emissions increase of a regulated NSR pollutant.
- A stationary source, which is an existing major stationary source that emits or has the potential to emit 100,000 tpy CO<sub>2</sub>e, undertakes a physical change or change in the method of operation that will result in an emissions increase of 75,000 tpy CO<sub>2</sub>e or more.

The storage tank will not emit carbon dioxide, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. It is also not expected to emit significant amounts of methane, which is not a VOC. As seen below, even if it is assumed that the entire combined



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VOC emission increase of 0.97 lb/day is methane, which has a global warming potential (GWP) of 21, the increase in CO<sub>2</sub>e is well below the Significance Threshold of 75,000 tpy CO<sub>2</sub>e. Therefore, the tank is not subject to any requirements under this regulation.

Methane emission increase = 0.97 lb/day = 0.18 tpy CH<sub>4</sub>  
CO<sub>2</sub>e emission increase = (0.18 tpy) x (GWP of 21) = 3.8 tpy CO<sub>2</sub>e

**Regulation XX: Regional Clean Air Incentive Market (RECLAIM)**

The subject storage tank is not subject to RECLAIM since it does not emit NO<sub>x</sub> or SO<sub>x</sub>.

**Regulation XXX: Title V Permits**

The initial Title V permit for the refinery was sent to Chevron on September 29, 2009 with an effective date of October 12, 2009. The permit issued for this tank will be issued as a revision of the Title V permit. Permit revisions are categorized into the following four types: *administrative, minor, de minimis significant and significant*. The review and distribution requirements for each revision type are summarized in the following table.

**Title V Permit Revisions: Review and Distribution Requirements**

Revision Type	Permit Review and Distribution Requirements		
	EPA Review (45-day)	Public Notice (30-day)	Send Final Permit to EPA
Administrative	No	No	Yes
Minor	Yes	No	Yes
De Minimis Significant	Yes	No	Yes
Significant	Yes	Yes	Yes

As defined in Rule 3000, a minor Title V permit revision is any revision that:

- (1) 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;
- (2) does not violate a regulatory requirement;
- (3) does not require any significant change in monitoring terms or conditions in the permit;
- (4) does not require relaxation of any recordkeeping, or reporting requirement, or term, or condition in the permit;
- (5) does not result in an emission increase of RECLAIM pollutants over the facility starting Allocation plus nontradeable Allocations, or higher Allocation amount which has previously undergone a significant permit revision process;
- (6) does not result in an increase in emissions of a pollutant subject to Regulation XIII - New Source Review or a hazardous air pollutant;
- (7) does not establish or change a permit condition that the facility has assumed to avoid an applicable requirement;



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- (8) 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; and,
- (9) is not a modification or reconstruction of an existing permit unit, resulting in new or additional NSPS requirements pursuant to 40 CFR Part 60, or new or additional NESHAP requirements pursuant to 40 CFR Part 61 or 40 CFR Part 63; or,
- (10) incorporates an existing general permit, as defined in subdivision (e) of Rule 3004, and its associated requirements, into another Title V permit.

A de minimis significant Title V permit revision meets all of the requirements above with the exception that it does result in an increase in the emission of HAP, CO, VOC or PM10 that is not greater than the respective threshold below and the total cumulative emission increase of HAP, CO, VOC or PM10 for all de minimis Title V revisions during the term of the Title V permit is not greater than the respective threshold:

HAP: 30 lb/day  
 CO: 220 lb/day  
 VOC: 30 lb/day  
 PM10: 30 lb/day

Once the cumulative emission increase of HAP, CO, VOC or PM10 for all de minimis revisions issued during the term of the Title V permit exceeds the respective threshold above, all subsequent Title V permit revisions, with an increase of HAP, CO, VOC or PM10, issued during the term of the Title V permit will be significant revisions. Therefore, the cumulative increase in HAP, CO, VOC and PM10 emissions for de minimis revisions must be tracked for each 5-year Title V permit term. The term of the current Title V permit is from October 12, 2009 until October 11, 2014.

The proposed revision meets all of the minor TV revision specifications listed above except that the proposed modifications cause a total increase in estimated VOC emissions of 0.97 lb/day. Therefore, it qualifies as a de minimis significant revision. The table below contains a summary of the HAP, CO, VOC and PM10 emission increases for all de minimis significant revisions issued during the term of the current Chevron El Segundo Refinery Title V Permit.

Since the cumulative emission increase of HAP, CO, VOC and PM10 for all de minimis significant revisions issued during the current term of the Chevron Title V permit is less than respective threshold, this revision of the Title V permit is a de minimis significant revision.

**Emission Increases for De Minimis Significant Revisions of Chevron Title V Permit**

Equipment Permit Appl. No.	Title V Revision Appl. No.	Emission Increase (lb/day)			
		HAP	CO	VOC	PM10
511207	511206	0	0	1.0	0
435990	516647	0	0	0.3	0
437429	516647	0	0	0.4	0



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Equipment Permit Appl. No.	Title V Revision Appl. No.	Emission Increase (lb/day)			
		HAP	CO	VOC	PM10
516645	516647	0	0	0.7	0
526607	526610	0	0	0.3	0
533856	533787	0	0	1.0	0
<b>Cumulative (1)</b>		<b>0</b>	<b>0</b>	<b>3.7</b>	<b>0</b>

(1) Cumulative emissions increase for all de minimis significant Title V permit revisions since issuance of the initial Title V permit on October 12, 2009. Note that

Chevron has submitted Title V permit revision A/N 533787 for processing of this de minimis significant Title V permit revision, which will be distributed for a 45-day EPA review.

**RECOMMENDATION:**

Based on the foregoing evaluation, it is expected that the subject applications will comply with all applicable District Rules and Regulations. It is recommended that, a Permit to Construct/Permit to Operate, Section D of the RECLAIM/Title V facility permit, be issued for the replacement of the roof for Storage Tank No. 1004.