



SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

STATIONARY SOURCE COMPLIANCE DIVISION

APPLICATION PROCESSING AND CALCULATIONS

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APPL. NO.
511207

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06/10/10

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PERMIT TO OPERATE

COMPANY NAME: Chevron Products Company

MAILING ADDRESS: P.O. Box 97
El Segundo, CA 90245

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

EQUIPMENT DESCRIPTION:

| Description | ID No. | Connected To | RECLAIM Source Type | Emissions and Requirements | Conditions |
|--|--------|--------------|---------------------|--|--|
| Process 16: STORAGE TANKS | | | | | P13.1 |
| System 3: EXTERNAL FLOATING ROOF TANK | | | | | S13.3 |
| STORAGE TANK, EXTERNAL FLOATING ROOF, NO. 1008, WELDED SHELL, WITH THREE MIXERS, 600000 BBL; DIAMETER: 260 FT 3 IN; HEIGHT: 63 FT 9 IN, WITH FLOATING ROOF, DOUBLE DECK, WELDED SHELL PRIMARY SEAL, CATEGORY A, METALLIC SHOE SECONDARY SEAL, CATEGORY B OR BETTER, RIM MOUNTED GUIDEPOLE, UNSLOTTED, WITH GASKETED SLIDING COVER AND POLE WIPER A/N: 470894 <u>511207</u> | D1452 | | | HAP: (10) [40CFR 63 Subpart CC, #2, 5-25-2001] | B22.4, B22.31, C1.115, D90.36, E71.26, E71.62, H23.24, K67.41 |



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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 |

[**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 | 463 |
| VOC | District Rule | 1149 |
| VOC | District Rule | 1178 |

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

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

DEVICE CONDITIONS

~~B22.4 The operator shall not use this equipment with materials having a(n) true vapor pressure of 6 psia or greater under actual operating conditions.~~

~~For the purpose of this condition, materials would refer to crude oils only.~~

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

~~[Devices subject to this condition : **D1452**]~~

B22.31 The operator shall only use this equipment with materials having a(n) true vapor pressure of 5.8 psia or less under actual operating conditions.

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

[Devices subject to this condition : **D1452**]



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C1.115 The operator shall limit the throughput to no more than ~~1,386,345~~ 1,639,504 barrel(s) in any one calendar month.

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 time that the ATLG went out of service.

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

[Devices subject to this condition: **D1452**]

D90.36 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) sample and test the materials stored, 2) derive the vapor pressure using engineering calculations, or 3) maintain on file a copy of the Material Safety Data Sheet (MSDS) of the material stored.

Records of 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 3004(a)(4)-Periodic Monitoring, 12-12-1997]



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[Devices subject to this condition : D1270, D1277, D1278, D1279, D1280, D1285, D1286, D1287, D1288, D1290, D1292, D1293, D1300, D1301, D1303, D1329, D1335, D1352, D1417, D1420, D1429, D1439, **D1452**, D1453, D1454, D1455, D1464, D1608, D1609, D1610, D1611, D1612, D1613, D1614, D1615, D1616, D1617, D1686, D2177, D2183, D3944, D4119, D4121, D4123, D4125, D4127, D4129, D4131, D4133, D4135, D4137, D4139, D4141, D4143, D4145, D4147, D4149, D4151, D4153, D4155, D4157, D4159, D4161, D4163, D4165, D4167, D4169, D4171, D4173, D4175, D4177, D4179, D4181, D4183, D4185, D4187, D4189, D4191, D4193, D4195, D4197, D4285]

E71.26 The operator shall only use this equipment for the storage of crude oils, or organic liquids having a true vapor pressure of less than 3.0 psia under actual storage conditions.

The purpose of this condition is to ensure that this storage tank operates in such a manner that it complies with Rule 1178.

[RULE 1178, 4-7-2006]

[Devices subject to this condition : D1442, **D1452**, D1453]

E71.62 The operator shall only use this equipment for the storage of crude oil.

[RULE 1178, 4-7-2006; RULE 1401, 5-5-2009]

[Devices subject to this condition : **D1452**]

H23.24 This equipment is subject to the applicable requirements of the following rules or regulations:

| Contaminant | Rule | Rule/Subpart |
|-------------|------------------|--------------|
| VOC | 40CFR60, Subpart | Kb |

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

[Devices subject to this condition : D1305, D1329, D1330, D1336, D1337, D1390, D1399, D1423, D1429, D1432, D1450, **D1452**, D1453]

K67.41 The operator shall keep records, in a manner approved by the District, for the following parameter(s) or item(s):

Tank throughput in barrels per calendar month.



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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, 40CFR 60 Subpart Kb, and 40CFR 63 Subpart CC.

[RULE 1149, 5-2-2008; RULE 1178, 4-7-2006; RULE 463, 5-6-2005; 40CFR 60 Subpart Kb, 12-4-2003; 40CFR 63 Subpart CC, 6-23-2003]

[Devices subject to this condition: **D1452**, D1453]

BACKGROUND:

Chevron Products Company (ID 800030) submitted A/N 511207 on May 26, 2010 to increase the existing throughput limit (condition C1.15) of 1,386,345 barrels per calendar month to 1,639,504 bbl per calendar month. Chevron also proposes to limit the storage tank to the storage of crude oil with a maximum vapor pressure of 5.80 psia. The storage tank is currently permitted to store crude oil with a vapor pressure less than 6.0 psia (B22.4) or non-crude oil commodities with a vapor pressure less than 3.0 psia. The storage of non-crude commodities will no longer be permitted. Chevron does not propose to make any physical modifications to the storage tank.

PERMIT HISTORY:

The permitting history for this tank is shown in the following table.

Permit History for Tank 1008 (D1452) (A/N 511207)

| Permit to Construct | | Permit to Operate | | Description of Modification |
|---------------------|------------|-------------------|------------|--|
| No. | Issue Date | No. | Issue Date | |
| C18860 | | M18522 | 1981 | Original construction of this EFR tank with mechanical shoe primary seal and rim-mounted secondary seal. PC and PO had TVP limit of 4 psia but no T'put limit. Max. PTE was based on T'put of 9,125,000 bbl/yr. |
| 175472 | 11-01-88 | na. | na. | This P/C was cancelled by Chevron. PC was for replacement of primary and secondary seals and increase TVP limit up to 11 psia. |
| 250478 | na. | D57987 | 6/22/92 | Change of Condition: Original request was for increase of TVP from 4 psia up to 11 psia. This change would have required offsetting of an 11 lb/day VOC increase. The final condition was modified to multi-tiered TVP / T'put limit condition for which there was no increase in Max. PTE. [VOC Max. PTE was 6.4 lb/day]. |
| 295827 | na. | D84903 | 8/25/94 | Change of Condition: Change the multi-tiered TVP/throughput limit condition to a TVP limit of 6 psia and a turnover limit of 25 turnovers per year (15 MM barrels per year used in calcs). VOC Max. PTE = |



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| Permit to Construct | | Permit to Operate | | Description of Modification |
|---------------------|------------|-------------------|------------|---|
| No. | Issue Date | No. | Issue Date | |
| | | | | 10.6 lb/day. [4.2 lb/day entered into NSR. Chevron offset this 4 lb/day increase] |
| 385725 | na. | F56361 | 11/15/02 | Administrative Change: Added "With Three Mixers" to the equipment description. Applicant provided documentation that there were 3 mixers on this tanks since at least 1980. |
| 434140 | na. | F71391 | 11/17/04 | Change of Condition: Changed the existing throughput limit from 25 turnovers per year up to 1,199,490 barrels per calendar month. |
| 470891 | na. | F93046 | 10/10/07 | Change of Condition: Increased the existing throughput limit from 1,199,490 barrels per calendar month up to 1,386,345 barrels per calendar month. |
| 511207 | na. | na. | na. | Propose to increase the existing throughput limit from 1,386,345 barrels per calendar month up to 1,639,504barrels per calendar month and reduce the vapor pressure limit from 6 psia to 5.8 psia.. |

COMPLIANCE RECORD REVIEW:

Facility ID 800030 does not have any outstanding NC's or NOV's. A summary of the NC's and NOV's issued to the facility since January 1, 2008 is shown in Appendix A. There were no NCs or NOV's issued for the subject storage tank during this time period.

FEE ANALYSIS

Summary of Fee Analysis

| A/N | Equipment Description | BCAT/CCAT | Fee Schedule | Fee Type | Fiscal Year (1) | Fee |
|----------------------------|-------------------------------------|---------------|--------------|---------------------------------|-----------------|--------------------|
| 511207 | External Floating Roof Storage Tank | 251904 (BCAT) | C | Change of Condition | 09-10 | \$ 1,758.90 |
| 511206 (2) | RECLAIM/Title V Permit | 555009 (BCAT) | na. | RECLAIM/Title V Permit Revision | 09-10 | \$ 1,687.63 |
| Total | | | | | | \$ 3,446.53 |
| Fees Paid | | | | | | \$ 3,446.53 |
| Outstanding Balance | | | | | | \$ 0.00 |

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

(2) Title V revision application submitted for A/N 511207.

PROCESS DESCRIPTION:

A description of Tank No. 1008 (D1452) is contained in the equipment description above. Chevron does not propose any physical modifications to the storage tank. The table below



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shows the roof openings / fittings for the double deck roof. There are no proposed physical changes to the tank or roof.

Summary of Roof Opening / Fitting Controls and Seals

| Roof Opening / Fitting or Seal Type | Roof Seal and Opening/Fitting Configuration | |
|-------------------------------------|---|--|
| | No | Type |
| Access Hatch | 4 | Cover: bolted & gasketed |
| Automatic Gauge Float Well | 1 | Cover: bolted & gasketed |
| Gauge Hatch / Sample Well | 2 | Weighted mechanical actuation: Gasketed |
| Vacuum Breaker | 4 | Weighted mechanical actuation: Gasketed |
| Roof Drain | 4 | Slotted membrane cover that covers at least 90% of the area of the opening |
| Roof Legs | 147 | Adjustable, Double Deck Roof, Sock |
| Unslotted Guidepole Well & pole | 1 | Gasketed sliding cover with wiper |
| Primary Seal | 1 | Mechanical Shoe |
| Secondary Seal | 1 | Rim-mounted single wiper type |

CALCULATION:

Volatile Organic Compounds (VOC)

VOC and toxic air contaminant (TAC) emissions are estimated with the EPA Tanks 4.0.9d program, which utilizes VOC estimation methodology from EPA's AP-42. This program was utilized to estimate both current and post condition change emissions. The printouts of the EPA Tanks 4.0.9d runs are contained in the [engineering file](#). The estimate of current VOC emissions is based on crude oil with a maximum vapor pressure of 5.99 psia at an annual throughput of 16,636,140 barrels, which equates to a calendar monthly throughput of 1,386,345 barrels. The estimate of post condition change VOC emissions is based on crude oil with a maximum vapor pressure of 5.80 psia at an annual throughput of 19,674,048 barrels, which equates to a calendar monthly throughput of 1,639,504 barrels. The estimated VOC emissions are shown in the following table. As seen in the table, the increase in the maximum potential VOC emissions is 0.93 lb/day on a 30-day average basis.

Estimated Maximum Potential VOC Emissions

| | Max. Vapor Pressure (psia) | Max. Throughput (bbl/month) | Maximum Potential VOC Emissions | |
|------------------------|----------------------------|-----------------------------|---------------------------------|---------|
| | | | lb/day (1) | lb/year |
| Current Permit Limits | 5.99 | 1,386,345 | 16.22 | 5838 |
| Proposed Permit Limits | 5.80 | 1,639,504 | 17.15 | 6174 |

(1) 30-day average = annual emissions / 360

Toxic Air Contaminants (TAC)

TAC emissions are estimated for evaluation of the health risk impacts per District Rule 1401. For the Rule 1401 analysis, both the total TAC emissions and the incremental increase in TAC



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emissions are required. The incremental increase in TAC emissions is determined by subtracting the TAC emissions for crude oil storage with the current throughput limit from the estimated TAC emissions for crude oil with the proposed higher throughput.

The maximum TAC concentrations for crude oil based sampling Chevron performed for EPA’s Toxic Release Inventory (TRI) program follows:

- Benzene - 0.11 wt. %
- Ethyl Benzene - 0.15 wt. %
- Hexane - 1.02 wt. %
- Napthalene – 0.82 wt%
- Toluene – 0.36 wt. %
- Xylene – 0.55 wt. %

These TAC concentrations were utilized along with the EPA Tanks 4.0.9d program to estimate the TAC emissions. The Tanks 4.0.9d printouts are contained in the [engineering file](#). The estimated total TAC emissions and incremental increase in TAC emissions are shown in the table below.

TAC Emissions for Tank 1008

| Toxic Air Contaminant | Estimated TAC Emissions | | | Incremental TAC Emission Increase | |
|-----------------------|----------------------------|------------------------------------|----------------------|-----------------------------------|----------------------|
| | Crude Oil at Current T’Put | Crude Oil at Proposed Higher T’Put | | (lb/yr) | (lb/hr) |
| | (lb/yr) | (lb/yr) | (lb/hr) | | |
| Benzene | 6.73 | 7.21 | 8.2x10 ⁻⁴ | 0.48 | 5.5x10 ⁻⁵ |
| Ethyl benzene | 4.39 | 5.09 | 5.8x10 ⁻⁴ | 0.70 | 8.0x10 ⁻⁵ |
| Hexane | 84.48 | 88.73 | 1.0x10 ⁻² | 4.25 | 4.9x10 ⁻⁴ |
| Napthalene | 21.13 | 24.98 | 2.9x10 ⁻³ | 3.85 | 4.4x10 ⁻⁴ |
| Toluene | 13.0 | 14.66 | 1.7x10 ⁻³ | 1.66 | 1.9x10 ⁻⁴ |
| Xylene | 15.77 | 18.34 | 2.1x10 ⁻³ | 2.57 | 2.9x10 ⁻⁴ |

EVALUATION AND RULE REVIEW:

California Environmental Quality Act (CEQA)

According to the District’s CEQA Guidelines, the net emission increase thresholds for significant effect are:

ROG: 55 lb/day
 PM10: 150 lb/day
 CO: 274 lb/day

CEQA analysis is not required for this modification since the increase in estimated maximum potential VOC emissions is less than 1 lb/day 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

212(c)(1): Public notice is required for a project if any of the modified permit unit(s) are located within 1000 feet of a school. Public notice is not required under this clause since the tank is not located within 1000-foot of a school. A map showing the location of Tank 1008 is contained in the [engineering file](#).

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 daily maximums are shown below.

CO: 220 lb/day
NOx: 40 lb/day
Pb: 3 lb/day
ROG: 30 lb/day
PM10: 60 lb/day
SOx: 30 lb/day

Public notice is not required for the proposed increase in crude oil throughput since the increase in estimated VOC emissions is less than 1 lb/day.

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 (1×10^{-6}) during a lifetime (70 years). As discussed in additional detail in the evaluation of Rule 1401, the proposed increase in crude oil throughput causes an increase in MICR of less than 1×10^{-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 estimated VOC emissions is less than 1 lb/day for the proposed increase in crude oil throughput.

Regulation IV: Prohibitions

Rule 401: Visible Emissions

(b)(1) The subject equipment is expected to comply with visible emission limits. No increase in visible emission is expected with the requested modification.

Rule 402: Nuisance

No complaints or violations have been recorded for the previous three years of operation of this tank. The proposed increase in crude oil throughput is not expected to cause an increase in nuisance potential. Compliance with this rule is expected.



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Rule 463: Storage of Organic Liquids

This tank is subject to the requirements of this rule since it has a storage volume of greater than 19,815 gallons and stores an organic liquid (crude oil) with a vapor pressure greater than 1.5 psia. Rule 463 has specific requirements for roof type, seal type, and roof opening fittings/controls. The tank complies with these specifications. Rule 1178 has more specific and stringent requirements for the seal type and the fittings/controls on roof openings. A more detailed discussion of the specific tank seals and fittings is contained in the Rule 1178 evaluation.

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. The subject tank is currently subject to this NSPS and is tagged with condition H23.24 to denote applicability.

Any external floating roof tank with a capacity greater than 40,000 gallons that stores a petroleum liquid with a vapor pressure from 0.75 psia to 11.1 psia must comply with the requirements below.

- **Roof and Seal Requirements:** pontoon or double-deck cover that is equipped with two seals one above the other. The primary seal must be a metallic shoe seal or a liquid-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. The subject tank is equipped with a double-deck roof, mechanical shoe primary seal and rim mounted secondary seal that comply with this regulation.
- **Opening/Fitting Requirements:** Subpart Kb includes the following requirements for roof openings: "except for automatic bleeder vents, rim space vents, roof drains, and leg sleeves, each opening in the roof is to be equipped with a gasketed cover, seal, or lid that is to be maintained in a closed position at all times (i.e., no visible gap) except when the device is in actual use. Automatic bleeder vents are to be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports. Rim vents are to be set to open when the roof is being floated off the roof legs supports or at the manufacturer's recommended setting. Automatic bleeder vents and rim space vents are to be gasketed. Each emergency roof drain is to be provided with a slotted membrane fabric cover that covers at least 90 percent of the area of the opening." The roof openings for the subject tank currently comply with the requirements of this regulation.

Compliance with the requirements of this regulation is expected.

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

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



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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 April 25, 2001.

This storage tank is subject to this MACT standard as a Group 2 storage vessel. 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.” This tank is a Group 2 tank since the HAP concentration is below 4 percent by weight.

63.640(n)(1): A Group 1 or 2 storage tank that is part of an existing source and is subject to the requirements of 40CFR60, Subpart Kb is required to comply with the provisions of Kb except for a few exceptions as listed in 63.640(n)(8)]. As discussed above, Chevron complies with the seal and fitting specifications of Subpart Kb.

Regulation XI: Source Specific Standards

Rule 1149: Storage Tank Degassing

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

- Volume > 39,630 gallons with Reid vapor pressure (RVP) > 2.6 psi, or
- Volume between 19,815 gallons and 39,630 gallons with RVP > 3.9 psi

This tank is subject to the requirements of this rule. Compliance with this rule is expected.

Rule 1173: Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants

Chevron has an existing fugitive emission component inspection and monitoring program for compliance with the requirements of this rule. No new fugitive components will be installed under this “change of condition” application. Compliance with the requirements of this rule is expected.

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.



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(j)(7): This tank is exempt from doming requirements of paragraph (d)(2)(A) and (d)(2)(B) since it is permitted to contain more than 97% by volume crude oil. Compliance with all other applicable requirements of this rule is required.

1178(d)(1)(A): As shown in the table below, the fittings for this double deck roof meet the requirements of this rule.

Summary of Roof Opening / Fitting Controls and Seals

| Roof Opening / Fitting or Seal Type | Roof Seal and Opening/Fitting Configuration | | Applicable Rule 1178 Citation |
|--------------------------------------|---|---|-------------------------------|
| | No | Type | |
| Access Hatch | 4 | Cover: bolted & gasketed | 1178(d)(1)(A)(i) |
| Automatic Gauge Float Well | 1 | Cover: bolted & gasketed | 1178(d)(1)(A)(i) |
| Gauge Hatch / Sample Well | 2 | Weighted mechanical actuation; Cover: gasketed. | 1178(d)(1)(A)(ii) |
| Roof Legs | 147 | Adjustable; gasket or <u>impervious sock cover</u> | 1178(d)(1)(A)(iii) |
| Rim Vent | 0 | Gasketed | 1178(d)(1)(A)(iv) |
| Vacuum Breaker | 4 | Weighted mechanical actuation; Gasketed | 1178(d)(1)(A)(v) |
| Roof Drain | 4 | Slotted membrane fabric cover that covers at least 90 percent of the area of the opening. | 1178(d)(1)(A)(vi) |
| Unslotted Guidepole Well & Guidepole | 1 | Gasketed sliding cover with flexible fabric sleeve or <u>wiper</u> | 1178(d)(1)(A)(vii) |
| | | Gasketed cover at the end of the pole. | 1178(d)(1)(A)(viii) |
| Primary Seal | 1 | Mechanical Shoe or liquid mounted | 1178(d)(1)(B)(i) |
| Secondary Seal | 1 | Rim mounted and shall not be attached to the primary seal. | 1178(d)(1)(B)(ii) |

Regulation XIII: New Source Review

Rule 1303: Requirements (December 6, 2002)

This rule allows the Executive Officer to deny a Permit to Construct for any new, modified or relocated source which results in an emission increase of any nonattainment air contaminant, any ozone depleting compound, or ammonia, unless BACT is used. This rule also requires modeling and offset (among other requirements) if there is a net increase in any nonattainment air contaminants for any new or modified source. The definition of "Source" in Rule 1302(ao) 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."



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The South Coast Air Basin (SOCAB) is designated in attainment for CO, NO_x and SO_x. The following are currently considered nonattainment air contaminants: NO_x, SO_x, PM₁₀, and VOC. VOC & NO_x are included since they are precursors for ozone. VOC, NO_x, and SO_x are included as PM-10 precursors. PM10 and VOC are subject to this regulation. NO_x and SO_x are regulated under Regulation XX (RECLAIM) for RECLAIM facilities such as Chevron.

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 applicable since the increase in estimated maximum potential VOC emissions for the proposed increase in crude oil throughput is 0.93 lb/day.

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 proposed increase in crude oil throughput will cause a net increase in maximum potential 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 SO_x. Modeling is not required for the subject storage tank since it only emits 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 exceeds 0.5 lb per day on a maximum daily 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.

The 0.93 lb/day increase in maximum potential VOC emissions for the proposed increase in throughput must be offset. The total number of VOC ERCs required for the project is 0.93 lb/day x 1.2 = 1.12 lb/day, which rounds down to 1 lb/day. ERC certificate number AQ010876 will be utilized.

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.



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The El Segundo Refinery is located in Zone 1. ERC certificate number AQ10876 was originated 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, which include:

- (A) *Alternative Analysis*
- (B) *Statewide Compliance*
- (C) *Protection of Visibility*
- (D) *Compliance through California Environmental Quality*

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 NO_x 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 SO_x, or
- an increase of 15 tons per year or more, of the facility's PTE for PM₁₀; 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 due to the proposed increase in crude oil throughput is less than 1 lb/day.

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 (1.0×10^{-6}) at any receptor location, if the permit unit is constructed without T-BACT;
- (B) an increased MICR greater than ten in one million (1.0×10^{-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.



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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.

According to 1401(f)(3), for the purpose of determining MICR, cancer burden and chronic HI due to a modified permit unit, the increase in emissions shall be calculated based on the difference between the total permitted emissions after the modification and the total permitted emissions prior to the modification as stated in the permit conditions; or if there are no existing permit conditions that limit emissions, the average annual emissions which have occurred during the two-year period immediately preceding the date of the complete permit application.

According to 1401(f)(4), for the purpose of determining acute HI due to a new, relocated or modified permit unit, the total emissions from a permit unit shall be calculated on a maximum hourly basis from permit conditions which directly limit the emissions or, when no such conditions exist, from: (A) the maximum rated capacity; (B) the maximum hourly emissions; and (C) the physical characteristics of the materials processed. Therefore, for evaluation of acute risk, the pre-modification TAC emissions are not taken into account.

Analysis –

The following table, which shows the total TAC emissions and incremental increase in TAC emissions, is copied from the *Calculation Section* of this evaluation.

TAC Emissions for Tank 1008

| Toxic Air Contaminant | Estimated TAC Emissions | | | Incremental TAC Emission Increase | |
|-----------------------|----------------------------|------------------------------------|----------------------|-----------------------------------|----------------------|
| | Crude Oil at Current T'Put | Crude Oil at Proposed Higher T'Put | | (lb/yr) | (lb/hr) |
| | (lb/yr) | (lb/yr) | (lb/hr) | | |
| Benzene | 6.73 | 7.21 | 8.2x10 ⁻⁴ | 0.48 | 5.5x10 ⁻⁵ |
| Ethyl benzene | 4.39 | 5.09 | 5.8x10 ⁻⁴ | 0.70 | 8.0x10 ⁻⁵ |
| Hexane | 84.48 | 88.73 | 1.0x10 ⁻² | 4.25 | 4.9x10 ⁻⁴ |
| Napthalene | 21.13 | 24.98 | 2.9x10 ⁻³ | 3.85 | 4.4x10 ⁻⁴ |
| Toluene | 13.0 | 14.66 | 1.7x10 ⁻³ | 1.66 | 1.9x10 ⁻⁴ |
| Xylene | 15.77 | 18.34 | 2.1x10 ⁻³ | 2.57 | 2.9x10 ⁻⁴ |

Separate Tier 1 screening assessments were performed for chronic/cancer and acute risk. An application passes this screening if the chronic/cancer and acute hazard indices are less than 1. The chronic/cancer hazard and acute hazard indices for this application are 0.58 and 0.00026, respectively. A copy of the printouts for the Tier 1 screening is contained [in the engineering file](#). Compliance with the requirements of this regulation is achieved.

Regulation XX: Regional Clean Air Incentive Market (RECLAIM)

This storage tank is not subject to RECLAIM since it does not emit NOx or SOx.

Regulation XXX: Title V Permits



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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 for this storage tank will be issued as a revision of the current 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;
- (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 one or more non-RECLAIM pollutants or hazardous air pollutants (HAPs) and the total cumulative emission increase since



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issuance of the initial Title V permit or a significant Title V revision is not greater than the following thresholds:

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

With the 0.93 lb/day increase in VOC emissions, this Title V permit revision meets all of the requirements of a de minimis significant revision. The cumulative increase in VOC emissions since the most recent significant Title V permit revision, which was issued on May 14, 2010, is also 0.93 lb/day since no other de minimis significant revision have been proposed or issued since that time. Chevron has submitted Title V permit revision A/N 511206 for processing of this Title V permit de minimis significant revision, which will be sent to EPA for a 45-day review. Public notice is not required.

RECOMMENDATION:

Based on the foregoing evaluation, it is expected that the subject application will comply with all applicable District Rules and Regulations. It is recommended that a Permit to Operate, Section D of the RECLAIM/Title V facility permit, be issued with the proposed changes.



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Appendix A: List of Chevron NOV/NCs Issued Since January 1, 2008

| NOTICE NO. | NOTICE TYPE | VIOLATION DATE | STATUS | VIOLATION |
|------------|-------------|----------------|--------------------|--|
| P48119 | NOV | 1/10/2008 | Closed on 11/25/08 | FAILURE TO OPERATE F-105 AND F-205 ABOVE 1400 DEG F PER CONDITION B163.5 IN THE FACILITY PERMIT TO OPERATE, ID# 800030. |
| P48123 | NOV | 1/29/2008 | Closed on 9/2/08 | 1) Discharge of air contaminants > 40% opacity into the atmosphere for more than three minutes in one hour from K-25. (2) Discharge of air contaminants > 20% opacity into the atmosphere for more than three minutes in one hour from K-25. |
| P48124 | NOV | 2/24/2008 | Closed on 9/2/08 | Failure to ensure all vent gases from the SNR were vented to the CO control ground flare (C4116) during the SNR startup per Administrative Condition #4 in Section# of the Permit to Operate, ID# 800030. |
| P52764 | NOV | 4/12/2008 | Closed on 11/25/08 | F/P 800030, PROCESS 5 SYSTEM 1 - OPERATING CONTRARY TO CONDITION S15.10 |
| P12140 | NOV | 7/29/2008 | Closed on 5/19/09 | VOC LEAKS >50000 PPM RULE 1173 (d)(1)(B) - 9 COUNTS. 40 CFR FF 61.344(a)(1)(i)(A) MEASURABLE LEAKS FROM SEPARATOR COVER > 500 PPM - 4 COUNTS. |
| P12141 | NOV | 7/30/2008 | Closed on 5/19/09 | VOC LEAKS GREATER THAN 50,000 PPM - 21 COUNT VIOLATION RULE 1173(d)(1)(B) |
| P12142 | NOV | 7/31/2008 | Closed on 5/19/09 | OPEN ENDED LINES IN CRUDE #2 LSFO - 1 COUNT. 40 CFR 61.346(b)(1) PROCESS DRAIN WITHOUT WATER SEAL CONTROL. |
| P48721 | NOV | 10/2/2008 | Closed on 6/18/09 | 1) Failure to operate refinery flare in a smokeless manner; 2) Exceeding Ringlemann 2 emissions for more than 5 minutes in one hour. (FCC Flare) |
| D05317 | NC | 4/24/2009 | In Compliance | PROVIDE INFORMATION REGARDING EMERGENCY POWER CAPACITY AND PROTOCOL DURING POWER OUTAGES BY THE UTILITIES. |
| P48724 | NOV | 6/22/2009 | In Compliance | EXCEEDING 20 PPMV EMISSION LIMIT ON SELECTIVE CATALYTIC REDUCTION UNIT (DEVICE C2217) ON AUXILIARY BOILER (DEVICE D2216) |
| D05319 | NC | 7/10/2009 | In Compliance | PROVIDE SOURCE TEST RESULTS FOR AUXILIARY BOILER N43. |
| D05320 | NC | 1/20/2010 | In Compliance | REPORT VARIOUS AND PROCESS EQUIPMENT ACCORDING TO PROCESS UNIT GUIDELINES. |



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| NOTICE NO. | NOTICE TYPE | VIOLATION DATE | STATUS | VIOLATION |
|------------|-------------|----------------|---------------|--|
| P48725 | NOV | 2/23/2010 | In Compliance | 1) Light service leak in excess of 50,000 ppm - 1 count, (2) Leak at water separator cover exceeding 500ppm - 13 counts, (3) Equipment operating contrary to permit conditions and not in good operating condition - 2 counts. |
| P48726 | NOV | 2/23/2010 | In Compliance | Equipment not in good operating condition - 3 counts. |
| P48727 | NOV | 2/23/2010 | In Compliance | Light service leaks in excess of 50,000 ppm - 2 counts. |
| P48728 | NOV | 3/02/2010 | In Compliance | EMISSIONS FROM WASTE SYSTEM IN EXCESS OF 500 PPM - 4 COUNTS. |