	SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT *ENGINEERING & COMPLIANCE* APPLICATION PROCESSING AND CALCULATIONS	PAGES: 17	PAGE: 1
		A/N: 532428-9, 533644	DATE: 5/3/2012
		PROCESSED BY: Meredith Hankins	CHECKED BY: BC, TV

PERMIT TO CONSTRUCT

MOLTEN SULFUR STORAGE TANK NO. 601 & HEAF K602/602A APC

COMPANY NAME: Chevron Products Co.

COMPANY ID: 800030

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El Segundo, CA 90245

EQUIPMENT LOCATION: 324 W. El Segundo Blvd
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PROPOSED CHANGES TO PERMITS:

Proposed deletions are show in ~~strikeouts~~. Proposed additions are in **bold and underlined**.

SECTION H: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS (Please note that permits for the following equipment under Process 16, System 9 and Process 20, System 9 will be moved from Section D to Section H of the facility permit.)

Equipment	ID No.	Connected To	Source Type/ Monitoring Unit	Emissions And Requirements	Conditions
Process 16 : STORAGE TANKS					P13.1
System 9 : MISCELLANEOUS TANKS					
STORAGE TANK, FIXED ROOF, NO. 601, SULFUR, 22000 BBL; DIAMETER: 70 FT; HEIGHT: 32 FT A/N: ~~C15312~~ **532429** **Permit to Construct Issued: XX/XX/12**	D1294	C1770 C1771	**SOX: PROCESS UNIT****	~~SOX~~ **S COMPOUND**: 500 PPMV (5) **[RULE 407, 4-2-1982]**; **PM: (9) [RULE 404, 2-7-1986]**; **SO2: 12 LBS/DAY (1) [RULE 2011, 5-6-2005]**	**D28.x, D28.x1, A195.x**

Equipment	ID No.	Connected To	Source Type/ Monitoring Unit	Emissions And Requirements	Conditions
Process 20 : AIR POLLUTION CONTROL					
System 9 : SULFUR VAPOR CONTROL SYSTEM					
~~MIST ELIMINATOR~~ **FILTER**, HEAF UNIT NO. 1, K-602 A/N: ~~C41011~~ **533644** **Permit to Construct Issued: XX/XX/12**	C1770	D1294 D1295			~~D12.16~~ **D90.x**
~~MIST ELIMINATOR,~~**FILTER,** HEAF UNIT NO. 2, K-602A, STANDBY A/N: ~~C41011~~ **533644** **Permit to Construct Issued: XX/XX/12**	C1771	D1294 D1295			~~D12.16~~ **D90.x**
BLOWER, NO. 1, K-601, CENTRIFUGAL, WITH **100 HP** MOTOR DRIVE A/N: ~~C41011~~ **533644** **Permit to Construct Issued: XX/XX/12**	D3487				
BLOWER, NO. 2, K-601A, ~~(SPARE),~~ CENTRIFUGAL, WITH **100 HP** MOTOR DRIVE, **STANDBY** A/N: ~~C41011~~ **533644** **Permit to Construct Issued: XX/XX/12**	D3488				

DEVICE CONDITIONS

A. Emission Limits

A195.x The 500 ppmv Sulfur Compounds emission limit(s) is averaged over 15 consecutive minutes and calculated as sulfur dioxide (SO2). Only non-SO2 sulfur compound emissions from this equipment are subject to this limit.

[RULE 407, 4-2-1982]

[Devices subject to this condition: D1294]

D. Monitoring/Testing Requirements

~~D12.16 The operator shall install and maintain a(n) differential pressure gauge to accurately indicate the differential pressure across the mist filter. The operator shall determine and record the parameter being monitored once a month.~~

~~[RULE 3004(a)(4)-Periodic Monitoring, 12-12-1997; RULE 407, 4-2-1982]~~

~~[Devices subject to this condition: C1770, C1771]~~

D28.x The operator shall conduct source test(s) in accordance with the following specifications:

The test shall be conducted to establish a RECLAIM process unit equipment-specific emission rate, which upon District approval, shall be utilized to estimate and report quarterly emissions under District Rule 2011 in lieu of the estimated 12 lb/day SO2 emission rate specified in the "Emissions and Requirements" column for Tank 601 (D1294).

The test shall be conducted not later than 180 days after initial startup following reconstruction of Tank #601.

The test shall be conducted when the SRU is running. Emissions shall be tested while sulfur is being loaded through the sulfur loading rack (Process 14 / System 23). Emissions shall also be tested when sulfur is not being loaded.

The test shall be conducted to determine the SO2 emissions at the outlet of the APC device serving the equipment using a District-approved method.

The District shall be notified of the date and time of the test at least 10 days prior to the test.

The test shall be conducted after District approval of a source test protocol submitted in accordance with Section E – Administrative Conditions.

The test shall be conducted and test report submitted to the District in accordance with Section E – Administrative Conditions.

[RULE 2011, 5-6-2005]

[Devices subject to this condition: D1294]

D28.x1 The operator shall conduct source test(s) in accordance with the following specifications:

The test shall be conducted at least once every five years using an AQMD-approved source test method to demonstrate compliance with the Rule 407 concentration limit for non-SO2 sulfur compounds (calculated as SO2).

The test shall be conducted when the equipment is operating under normal conditions.

The operator shall comply with all general testing, reporting, and recordkeeping requirements in Sections E and K of this permit.

[RULE 3004(a)(4)-Periodic Monitoring, 12-12-1997; RULE 407, 4-2-1982]

[Devices subject to this condition: D1294]

D90.x The operator shall monitor and record the differential pressure across the HEAF filter according to the following specifications:

The operator shall determine and record the parameter being monitored once a month during normal operation just prior to the filter mat advancing.

[RULE 3004(a)(4)-Periodic Monitoring, 12-12-1997; RULE 407, 4-2-1982]

[Devices subject to this condition: C1770, C1771]

**Note: The replacement of D12.16 with new permit condition D90.x is an administrative revision in order to clarify the requirements of the monitoring condition. See emails with Chevron dated 4/25/12 and 5/3/12.*

BACKGROUND:

Chevron submitted modification A/N 532429 in order to reconstruct an existing pre-NSR molten sulfur storage tank, Tank No. 601. According to Chevron, the current tank has suffered corrosion damage and must be rebuilt. The new tank will operate in the same manner as the current tank, and will be constructed of the same materials. The new tank will maintain the same capacity and have identical dimensions to the existing tank, other than an upgraded roof (from a welded cone roof to a welded domed self-supporting roof) and slightly thicker walls due to updates in tank construction codes.

Chevron also submitted a Title V revision application, as issuance of a Permit to Construct for the reconstruction of Tank No. 601 will necessitate the revision of Chevron's Title V Permit. A summary of the new applications included in this evaluation are shown below in Table 1.

Upon the District's request, Chevron also submitted A/N 533644 in order to evaluate any potential impact of the reconstruction of Tank No. 601 on its associated control equipment.

Table 1 – AQMD Applications Submitted

A/N	Equipment	Device ID	B/CCAT	Type	Status	Date Received	Requested Action
532428	Title V Minor Revision	--	555009	85	21	2/21/12	• Revise Title V Permit
532429	Storage Tank Fixed Roof w/Vapor Control, Sulfur	D1294	289902	50	20	2/21/12	• Reconstruct Tank No. 601
533644	Dry Filter (>500 ft^2)	Various	20	50	20	3/14/12	• Control emissions from reconstructed Tank No. 601

The fees submitted for these applications are shown below in Table 2. Note that the subject applications were expedited, and thus Chevron paid an additional 50% of the permit processing fee for A/Ns 532429 and 533644.

Table 2 – Fee Summary

A/N	Equipment	Type	Fee Sched.	Fee Due	Fee Paid	Balance Due
532428	Title V Minor Revision	85	C	$1,747.19	$1,747.19	$0.00
532429	Storage Tank Fixed Roof w/Vapor Control, Sulfur	50	C	$3,359.43	$5,039.15	$0.00
533644	Dry Filter (>500 ft^2)	50	C	$3,359.43	$5,039.15	$0.00

Relevant permitting history for the subject equipment is shown below in Tables 3 and 4. Further discussion of the tank history follows. Previous permits issued to Tank No. 601 and the HEAF system may be found in Attachment A.

Table 3 – Relevant Permitting History (Tank No. 601)

A/N	Date Received	Application		Permit		Description/Comments
		Status	Type	Status	Number	
A73434	~1972	--	--	Inactive	P52247	Original construction. During evaluation of PC to PO conversion, visible emissions were observed from atmospheric breather vents and then-Standard Oil (now Chevron) was required to control these emissions prior to issuance of Permit to Operate (see below for details).
C15312	~1977	31	20	Active	M04143	PO no PC application submitted for connection of Tank No. 601 to newly installed HEAF system for control of sulfur vapors following explosion which rendered previous control method impossible (see below for details). Current active Permit to Operate for device.
394757	12/14/01	21	63	--	--	Application submitted to classify Tank No. 601 as RECLAIM SOx Process Unit and remove Rule 407 tagging. This application will be cancelled, as evaluation for RECLAIM/Rule 407 tagging will be consolidated into subsequent A/N 532429.
532429	2/21/12	20	50	--	--	Subject application submitted for reconstruction of Tank No. 601, as well as classification of new Tank No. 601 as a RECLAIM SOx Process Unit.

Table 4 – Relevant Permitting History (HEAF System)

A/N	Date Received	Application		Permit		Description/Comments
		Status	Type	Status	Number	
C08057	~1976	31	10	Inactive	M00925	Application for initial construction of HEAF unit to control sulfur vapors previously causing nuisance opacity emissions (see below).
C41011	2/24/1982	31	10	Active	M29046	Application submitted to install additional, parallel HEAF unit to act as standby during maintenance, etc in order to increase reliability of system.
533644	3/13/2012	20	50	--	--	Subject application submitted for control of reconstructed Tank No. 601.

The initial construction and permitting for this tank in ~1972 allowed both this tank (No. 601) and identical molten sulfur tank No. 602 to vent directly to atmosphere. During a District inspection in ~1972 for the evaluation of converting these original Permits to Construct to Permits to Operate, visible emission plumes in the range of 20-40% opacity were observed from the breather vents (8 per tank). These visible emissions were determined to be sulfur vapors, and were resulting in noticeable odors as well. Standard Oil was required to control these emissions prior to issuance of a Permit to Operate. For each tank, Standard Oil opted to close 4 of the open vents, leave 3 open for ingress of air, and connect the final opening to an eductor system which would draw the sulfur vapors to the sulfur plant incinerator. An inspection following installation of the eductor system in early 1973 found that visible emissions and odors were satisfactorily controlled, and Permit to Operate P-52247 was issued conditional that Standard Oil continued to vent Tank No. 601 to the incinerator.

In December 1973, an explosion occurred in one of the sulfur pits at the refinery. Because the lines from the sulfur pits and the sulfur tanks were tied together into the incinerator, Standard Oil applied for, and received, a variance from the requirement to vent the sulfur tanks to the incinerator until a full investigation was undertaken to determine the cause of the explosion (HB Case No. 831-39). During this time, the sulfur tanks were vented directly to the atmosphere without control.

Eventually, the source of the explosion was traced to the long, horizontal lines from the sulfur tanks, which tied in with the sulfur pits before venting to the incinerator. The unjacketed line from the eductor to the incinerator was also found to be a culprit. Because cold air was being pulled in from the atmosphere through the eductor system, sulfur vapors were condensing in the unjacketed portion of the line and causing plugging. Plugging was also occurring in the jacketed line from the tanks due to the distance of the sulfur tanks from the sulfur pits and the incinerator, which resulted in a very long run with low points. Formation of iron sulfide particles on steel surfaces and the free fall of sulfur into the pits were identified as sources of the static spark which may have triggered the explosion.

Standard Oil was able to remedy these issues for the sulfur pits by jacketing the line from the eductor to the incinerator, covering all exposed steel surfaces with epoxy coating, and installing flow monitors to detect line plugging. However, because the sulfur tanks are located at such a distance from the pits and incinerator, Standard Oil opted to develop a more local control method for the tanks and eliminate the connection to the incinerator as there was no way to overcome the

difficulties imposed by the long piping run. Construction of a HEAF system, described in more detail in the Process Description section below, was determined to be the best method to control the visible emissions caused by the elemental sulfur vapors.

When the HEAF system was initially installed, its efficiency to control elemental sulfur particulates was untested. However, it was chosen because similar systems had been used with success to control emissions from asphalt production, which have similar characteristics to elemental sulfur (small, "sticky" particles). A District inspection in 1977 following installation of the HEAF system found the visible emissions to be adequately controlled, and Permit to Operate M04143 was issued. Subsequent inspections of this system have shown it to be effective in controlling visible emissions from the sulfur tanks (see Field Evaluations in previous application folders C41011 and C15312).

PROCESS DESCRIPTION:

Molten sulfur produced by Chevron's Sulfur Recovery Unit (SRU) is stored in two molten sulfur tanks (the subject Tank No. 601 and identical Tank No. 602) prior to being loaded into tank trucks for distribution to third party sulfur users via the sulfur loading rack (Process 14 / System 23 of Chevron's Title V Permit, not a part of this evaluation).

Tank No. 601 and No. 602 each contain internal heating coils to ensure the sulfur remains in a molten state. Both tanks are also ventilated to prevent the accumulation of contaminants such as hydrogen sulfide. Ventilation air is pulled over the tanks via an induced draft fan. The ID fan also functions as part of the control system for the tanks, drawing the ventilation air along with any vapor-phase sulfur compounds (in addition to dilution air pulled in downstream of the tanks) through a High Efficiency Air Filter (HEAF) system.

The vapor space above the molten sulfur surface may contain hydrogen sulfide, sulfur dioxide, and vapor-phase elemental sulfur. Ingress of relatively cold ventilation air causes the gaseous elemental sulfur to condense. The HEAF system functions to remove the particulate sulfur, preventing visible emissions from these tanks.

The HEAF system is designed with two filters in parallel, where one filter acts as a spare for increased reliability. Each filter contains a continuous sheet of glass mat which passes through a plenum. Roughly every four minutes (depending on the pressure drop across the bed), a pick-up roller is actuated which spools up approximately 12 inches of filter. Each once-through roller is powered by a 1/2-HP motor. Chevron is required to monitor and record the pressure drop monthly across the filter beds under existing condition D12.16. Records submitted for the past 12 months indicate pressure drops ranging from ~5-12 inches H_2O. D12.16 is being replaced with new condition D90.x to require that Chevron record the pressure drop monthly prior to the filter mat being spooled, in order to ensure consistent readings and proper operation of the HEAF system.

EMISSIONS CALCULATIONS:

Because the chemistry inside the sulfur tank is not well understood, and would be difficult to model, the best estimate for the emissions from the subject tank is the results from a "preliminary" source test performed in 1997 (see applicant submitted information, summary provided in Attachment B). This source test, while never having been reviewed by the District's Source Test Engineering Department, nor having undergone QA/QC review, is the only available data for the emissions from Tank Nos. 601 and 602 following installation of the HEAF system since there are no known emission factors for sulfur tanks.

The SOx (SO_2) emissions found in that source test are shown below in Table 5. Note that because identical Tank Nos. 601 and 602 vent through a common stack, the total emissions were divided by two to obtain the emissions from Tank No. 601. More details may be found in Attachment B.

Table 5 – NSR Emissions for A/N 532428

Pollutant	R1 (lb/hr)			R2 (lb/hr)			30DA (lb/day)			Yearly (lb/yr)		
	Pre-Mod	Post-Mod	Δ	Pre-Mod	Post-Mod	Δ	Pre-Mod	Post-Mod	Δ	Pre-Mod	Post-Mod	Δ
SOx	0.5	0.5	0	0.5	0.5	0	12.0	12.0	0	4,380	4,380	0

A more rigorous source test following reconstruction of Tank No. 601 will be required in order to determine a SOx Process Unit Equipment-Specific Emission Factor under RECLAIM (see Reg. XX rule evaluation below). During evaluation of the conversion of this Permit to Construct to a Permit to Operate, the results from this source test will be used to determine the emission factor, as well as update the NSR baseline for Tank No. 601.

Note that regardless of the results from the source test following reconstruction, engineering judgment indicates that reconstruction of this tank should not have an impact on emissions. Any disparity in emissions should be assumed to be due to the inaccuracy of the previous non-QA/QC'd source test.

COMPLIANCE HISTORY:

Chevron was issued NOV No. P11672 in January 2000 for not operating the HEAF system during operation of sulfur Tank Nos. 601 and 602. Chevron was issued NOV No. P11575 in June 2000 for again not operating the HEAF system during operation of Tank Nos. 601 and 602. Both of these violations are now closed. There are no records of compliance issues with this equipment since June of 2000.

The Chevron El Segundo Refinery is currently in compliance. See Attachment C for five year refinery compliance history.

PERMIT CONDITION COMPLIANCE CHECK:

D12.16 Chevron submitted monthly pressure differential measurements from the past 12 months for each HEAF unit on 3/28/12, demonstrating compliance with the requirements of this condition.

Note: All other device level conditions are new conditions being added to the subject Permits to Construct. Compliance with these conditions will be evaluated prior to issuance of Permits to Operate.

RULE EVALUATION:

PART 1: SCAQMD REGULATIONS

REG II: PERMITS

Rule 212: Standards for Approving Permits

11/14/97 Rule 212 requires public notice if any of the following subparts are applicable

(c)(1): The source is located within 1000 feet of a school

(c)(2): The source has emission increases exceeding the following thresholds from 212(g), all in lbs/day:

CO:	220	ROG:	30	PM10:	60
NOx:	40	Pb:	3		

(c)(3): The source generates emissions of toxic air contaminants for which the MICR is above one in a million for the subject equipment or for which MICR is above ten in a million for the facility.

The proposed modification does not result in an emission increase and the subject equipment is not located within 1,000 feet of a school. No public notice is required.

REG IV: PROHIBITIONS

Rule 401: Visible Emissions

11/9/01 This rule prohibits the discharge of emissions with greater opacity than Ringelmann No. 1, with some exemptions.

The HEAF system has been demonstrated to control visible sulfur emissions from Tank No. 601 to below Ringelmann No. 1. The proposed reconstruction of Tank No. 601 is not expected to impact the ability of the HEAF system to control the sulfur vapors. Continued compliance is expected.

Rule 402: Nuisance

5/7/76 This rule prohibits the discharge of air contaminants that cause injury, detriment, nuisance, or annoyance to a considerable number of persons; endanger the comfort, health, or safety of any person; or cause injury to property.

Emission of elemental sulfur and H_2S from Tank No. 601 has the potential for nuisance odors. However, Tank No. 601 is located in the center of the Chevron Refinery, and any odors generated have not resulted in complaints from the surrounding communities in the past. As the proposed reconstruction of Tank No. 601 is not expected to increase emissions to the atmosphere during normal operation, continued compliance is expected.

Rule 403: Fugitive Dust

6/3/05 This rule limits the release of particulate matter emitted as a result of anthropogenic fugitive dust sources.

According to Chevron, the proposed reconstruction of Tank No. 601 "will involve minor earth moving, construction, and vehicle movement but is unlikely to create fugitive dust emissions that extend beyond the facility fence line."

Fugitive dust emissions are not expected during normal operation of the sulfur tank and associated HEAF system. Continued compliance is expected.

Rule 404: **Particulate Matter – Concentration**
2/7/86

This rule prohibits the discharge of particulate matter in excess of the concentrations listed in Table 404(a).

Condensed elemental sulfur not captured by the HEAF system may result in PM emissions. Based on the elemental sulfur emissions and test conditions from the 1997 source test, these emissions are well within the rule limits:

$$0.4\ ppmv\ S\ x\ \frac{32.065\ {}^{g}/_{mol}}{0.08205\ {}^{L\cdot atm}/_{K\ \cdot mol}\ x\ 334.15\ K} = \boxed{0.467\ {}^{mg}/_{m^3}}$$

At a flue gas flow of 95 dscmm, the relevant concentration limit from Table 504(a) is 273 mg/m^3. Compliance with the emission limit of this rule during normal operation is demonstrated, as 0.467 << 273.

Emissions of elemental sulfur from the sulfur tank are well-controlled by the HEAF system. The proposed modification is not expected to increase emissions. Continued compliance is expected.

Rule 407: **Liquid and Gaseous Air Contaminants**
4/2/82

This rule limits atmospheric emissions of equipment.

(a)(1): *CO Emissions*
This subpart prohibits the discharge of CO emissions into the atmosphere greater than 2,000 ppmv averaged over 15 minutes.

These tanks store molten sulfur. CO emissions are not expected.

(a)(2)(A): *Sulfur Emissions*
This subpart limits the total sulfur emissions, measured as SO_2, to less than 500 ppmv in the South Coast Air Basin.

As a SOx RECLAIM source, Chevron is not subject to the SOx requirements of Rule 407 per District Rule 2001(j) – Rule Applicability. This subpart exempts SOx RECLAIM sources from the SOx emissions provisions of the existing District Rules listed in Table 2 of Rule 2001 because RECLAIM subsumes these provisions. Rule 407 is listed in Table 2, thus, this equipment is not subject to the SOx emissions requirements of this rule. Chevron requested that Rule 407 tagging be removed completely from this equipment.

However, Rule 2000(c)(72) specifically defines SOx Emissions as "sulfur dioxides emitted." Because Rule 407(a)(2) limits emissions of "sulfur compounds which would exist as liquid or gas at standard conditions", and RECLAIM only subsumes *SOx* emission limits, emissions of non-SOx (non-SO_2) sulfur compounds from this tank **are** subject to Rule 407. A source test from 1997 indicates emissions of 24.90

ppmv H_2S and 0.4 ppmv elemental sulfur. Converted to SO_2 (~60 ppmv), these emissions remain are well below the rule limit of 500 ppmv.

Note that this equipment will be tagged with new periodic monitoring condition D28.x1 to ensure continued compliance in the future.

Rule 468: **Sulfur Recovery Units**
10/7/90

This rule specifies that emissions from sulfur recovery units should not exceed 500 ppm total sulfur as SO_2, 10 ppm H_2S, and 198.5 lb/hr total sulfur as SO_2.

EPA has made the determination that sulfur tanks are part of a sulfur distribution system and not part of the SRU; and further that various requirements applicable to the SRU do not apply to sulfur tanks (see NSPS Subpart J Applicability Determination in Attachment D).

Therefore, these emission limits do not apply to Tank No. 601. The proposed reconstruction will not affect this determination.

REG XI: SOURCE SPECIFIC STANDARDS

Rule 1123: **Refinery Process Turnarounds**
10/7/90

The purpose of this rule is to limit the atmospheric emissions during refinery process turnarounds.

As the purpose of subject Tank No. 601 is primarily for storage, it is exempt from the requirements of this rule per 1123(a)—the definition of vessel.

Rule 1173: **Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants**
6/1/07

The purpose of this rule is to control VOC leaks from components and releases from atmospheric process pressure relief devices. It applies to components at refineries, chemical plants, lubricating oil and grease re-finers, marine terminals, oil and gas production fields, natural gas processing plants, and pipeline transfer stations.

The subject molten sulfur tank and associated HEAF system are not in VOC service and thus are not subject to the requirements of this rule.

REG XIII: NEW SOURCE REVIEW (NSR)

This regulation applies to new, modified, or relocated sources that increase emissions of any nonattainment air contaminants, ammonia, or ozone-depleting compounds. The South Coast Air Basin is currently in attainment for NO_2, SO_2, CO, and lead and nonattainment for ozone and PM10. VOC and NO_x are precursors for ozone, while VOC, NO_x, and SO_x are precursors for PM10. Therefore, emissions of NO_x, SO_x, PM10 and VOC are evaluated for compliance with NSR.

Note that Chevron is subject to RECLAIM for both NO_x and SO_x (SO_2), and thus emissions of those pollutants are evaluated under RECLAIM. This tank does not

emit any VOCs. PM10 emissions are not expected to change due to the proposed modification. Therefore, NSR is not triggered.

Rule 1303: Requirements

(a)(1): Best Available Control Technology

Tank No. 601 was constructed prior to 1976 and has only been modified since construction in such a way as to decrease emissions (see previous application folders and application history above for more details). Therefore, BACT has never applied. The proposed reconstruction will not increase emissions, thus BACT will not be triggered at this time. Tank No. 601 will remain pre-NSR.

(b)(1): Modeling

The proposed project does not result in emission increase of any pollutants.

(b)(2): Offsets

ERCs are not required, as the proposed modification does not result in an emission increase.

(b)(3): Sensitive Zone Requirements

N/A. No ERCs required.

(b)(4) Facility Compliance

N/A. No emission increase.

(b)(5) Major Polluting Facilities

Chevron meets the definition of a major polluting facility. However, because the proposed modification will not result in an emission increase, it is not considered a Major Modification. Therefore, the requirements of this section do not apply.

Continued compliance with the NSR requirements of Rule 1303 is expected.

REG XIV: TOXIC AIR CONTAMINANTS

Rule 1401: New Source Review of Toxic Air Contaminants

This rule specifies limits for MICR, cancer burden, and noncancer acute/chronic hazard index for new permit units, relocations, or modifications to existing permit units which emit toxic air contaminants listed in Table I of this rule.

(d) Requirements

This subdivision limits the calculated health risk resulting from increased toxic emissions to a MICR of less than 1 in a million, cancer burden less than 0.5, and acute and chronic health indices less than 1.0.

(g)(1)(B) Modification with No Increase in Risk

This subparagraph exempts projects which cause a reduction or no increase in calculated health risk from the requirements of subpart (d). The proposed modification will not result in an increase in toxic emissions and is therefore exempt from the requirements of subdivision (d).

REG XVII: PREVENTION OF SIGNIFICANT DETERIORATION (PSD)

The goal of PSD is to ensure that air quality in clean areas does not significantly deteriorate while maintaining a margin for future industrial growth. It applies to net emission increases of criteria air pollutants that are currently in attainment. The District has Limited PSD Delegation from EPA (effective July 26, 2007) that gives the District limited responsibility for PSD. The South Coast Air Basin is currently in attainment for NO_2, SO_2, CO, and lead.

A recent EPA Endangerment Finding for greenhouse gases (GHG) means that emissions of GHG need to be evaluated under PSD. Note that ambient air quality standards have not yet been released for GHG. Therefore, as the South Coast Air Basin is *not* in *non*attainment, GHG emissions are also subject to PSD in South Coast.

The proposed modification will not result in an increase of any attainment pollutants, thus the requirements of PSD do not apply.

REG XX: REGIONAL CLEAN AIR INCENTIVE MARKET (RECLAIM)

RECLAIM is a market incentive program designed to allow facilities flexibility in achieving emission reduction requirements for NOx and SOx. Chevron is currently subject to RECLAIM requirements for both NOx and SOx as a Cycle 2 facility.

Under previously submitted A/N 394757, and again as part of the currently submitted application, Chevron has requested that Tank No. 601 be identified as a SOx Process Unit.

Per Rule 2011(d), a SOx process unit is "any piece of SOx emitting equipment which is not a major SOx source or a piece of equipment designated in Rule 219..." Tank No. 601 is located at a facility subject to RECLAIM and emits SOx (SO_2), but does not meet the definition of a Major SOx source as defined in Rule 2011(c), nor is it exempt from permitting under Rule 219. Therefore, it must be classified as a SOx process unit.

Per 2011(d)(2), SOx process units are required to report emissions to the District on a quarterly basis. Per 2011(d)(3), the emissions should be based on the default emission factor established for that specific equipment or category of equipment in Rule 2002. However, 2011(d)(4) allows for the operator to apply to the District for a different emission factor if they can demonstrate that this factor is reliable, accurate, and representative. Because there are no default factors for sulfur tanks, Chevron proposed an emission factor of 0.5 lb/hr (12 lb/day) SOx from Tank No. 601 based on a source test from 1997.

Chevron was informed that the source test from 1997 did not meet the District's criteria for determining a RECLAIM emission factor. In emails on 2/21/12 and 3/21/12, Chevron was informed they would need to perform a more rigorous source test on Tank No. 601 following reconstruction. Because Rule 2011 does not have

guidelines for determining emission factors for non-combustion SOx Process Units, Chevron was informed that they should perform a source test similar in redundancy and detail to the Guidelines for Testing to Establish Emission Rates for [NOx] process units in Rule 2012, Appendix A, Chapter 5, Part F.

This more rigorous source test is required to be performed within 6 months of construction per new permit condition D28.x. As Chevron proposed, and as specified in new condition D28.x, the source test will be conducted while the SRU is operating and during both normal operation and during a loading operation. District source test methods will be used to determine the SOx (SO_2) emissions from this equipment. A detailed source test protocol will be submitted to the District and approved jointly by the Permitting, RECLAIM, and Source Test Engineering departments prior to the source test being performed. Note that the results from this source test will also be used to determine an emission factor for Tank No. 602 (not part of this evaluation), as the identical tanks vent to a common control equipment and stack and the emissions measured will be divided equally to determine emission factors for each individual tank.

In the interim period between classification as a SOx Process Unit and determination of an emission factor, the 0.5 lb/hr (12 lb/day) emission factor originally proposed by Chevron will be included in the equipment description for Tank No. 601 and Chevron will report emissions accordingly in order to comply with Rule 2005(d)(2) until the more accurate emission factor is determined. The more accurate emission factor will be added to Chevron's permit during the conversion of the subject Permit to Construct to a Permit to Operate.

As a SOx Process Unit, this equipment is subject to the NSR for RECLAIM requirements in Rule 2005. Per 2005(c)(1), existing RECLAIM facilities must apply BACT and provide sufficient RTCs for any modifications which will increase emissions of RECLAIM pollutants. The proposed modification is not expected to increase emissions of SOx, and thus NSR for RECLAIM is not triggered for this project.

REG XXX: TITLE V PERMITS

The Title V Permit system is the air pollution control permit system required to implement the federal Operating Permit Program as required by Title V of the federal Clean Air Act as amended in 1990. This regulation defines permit application and issuance procedures as well as compliance requirements associated with the program. Chevron was issued an initial Title V permit effective 9/1/09.

Because the proposed modification does not result in an increase in emissions, but also does not meet any of the criteria for an Administrative Revision in District Rule 3000(b)(1), this application qualifies as a **Title V Minor Revision** per Rule 3000(b)(15). This means that a 45 day EPA review of the draft permit is required, per Rule 3003(j)(1)(A). Public review is not required, per 3006(b). A copy of the final permit will also be submitted to the EPA within 5 working days of its issuance, per Rule 3003(j)(1)(E).

PART II: STATE REGULATIONS

CEQA: CALIFORNIA ENVIRONMENTAL QUALITY ACT

CEQA requires that the environmental impacts of proposed projects be evaluated and that feasible methods to reduce, avoid, or eliminate identified significant adverse impacts of these projects be considered. CEQA defines "significant" by the following net emission increase thresholds (all in lb/day):

ROG: 55 PM_{10}: 150 CO: 274

The proposed modification will not result in any emission increase. As verified by the 400-CEQA screening checklist submitted by Chevron, the proposed modification does not trigger further CEQA analysis.

PART III: FEDERAL REGULATIONS

40CFR: PROTECTION OF ENVIRONMENT

Part 60: **New Source Performance Standards (NSPS)**

Subpart J: *Standards of Performance for Petroleum Refineries*

This subpart lays out requirements for certain equipment in the refinery, including the FCCU, Claus Sulfur Recovery Plants, and fuel gas combustion devices.

Although the subject Tank No. 601 stores molten sulfur produced by a Claus Sulfur Recovery Plant, EPA has made the determination that sulfur tanks are part of sulfur distribution and not the sulfur recovery plant and thus are not subject to any of the sulfur recovery plant requirements in Subpart J (see Rule 468 evaluation and Attachment D). The proposed reconstruction of Tank No. 601 will not affect this applicability determination.

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

Tank #601 is not currently subject to either Subparts K or Ka due to its construction prior to 1973 and its storage of molten sulfur (an inorganic liquid). Although Tank #601 will be reconstructed under this application, it will remain permitted to only store molten sulfur and thus is exempt from the requirements of Subpart Kb, which only applies to tanks that store volatile organic liquids (VOLs).

Subpart GGGa: *Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries for which Construction, Reconstruction, or Modification Commenced After November 7, 2006*

Subparts GGG/GGGa only apply to components in "VOC Service," which is defined as components which come into contact with streams containing greater than 10% VOC. The subject Tank No. 601 stores molten sulfur, an inorganic liquid; thus it is not in VOC service and is not currently subject to either Subpart GGG or GGGa. The

proposed modification does not affect this applicability determination.

Part 61: **National Emissions Standards for Hazardous Air Pollutants (NESHAPS)**
Subpart FF: *National Emission Standards for Benzene Waste Operations*

Chevron is subject to the control requirements of this regulation since the Total Annual Benzene (TAB) for the refinery is above the 10 Mg/yr threshold. This regulation contains standards for storage tanks, surface impoundments, containers, individual drain systems, oil-water separators, treatment processes, and closed vent systems/control devices.

This subpart does not contain any requirements applicable to the subject tank because Tank No. 601's primary purpose is the storage of molten sulfur (not considered a waste product as it is sold and distributed to third-party consumers).

Part 63: **National Emissions Standards for Hazardous Air Pollutants (NESHAPS)**
Subpart UUU: *National Emissions Standards for Hazardous Air Pollutants from Petroleum Refineries: Catalytic Cracking Units, Catalytic Reforming Units, and Sulfur Recovery Units*

This subpart lays out requirements various process vents throughout the facility, including vents in the sulfur recovery units.

Because EPA has made a prior determination that sulfur tanks are not part of the sulfur recovery unit (see Rule 468 and NSPS Subpart J evaluations and Attachment D), there are no requirements in this subpart that are applicable to the subject Tank No. 601. The proposed reconstruction will not affect this determination.

RECOMMENDATION:

The subject equipment is currently in compliance with and the proposed modification is expected to comply with all applicable District, State, and Federal rules and regulations. Permits to Construct under A/N 532488 & 533644 are recommended with the conditions listed in the Conditions section above. Additionally, cancellation of consolidated A/N 394757 is also recommended.

AQMD	**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT** *ENGINEERING & COMPLIANCE* **ATTACHMENTS**	**A/N:** 532429, 533644	**DATE:** 3/23/2012
		PROCESSED BY: Meredith Hankins	

ATTACHMENTS

ATTACHMENT A	**PREVIOUS PERMITS ISSUED TO SUBJECT EQUIPMENT**
ATTACHMENT B	**SOURCE TEST (1997)**
ATTACHMENT C	**COMPLIANCE HISTORY**
ATTACHMENT D	**EPA SUBPART J APPLICABILITY DETERMINATION**