

Bay Area Air Quality Management District

939 Ellis Street
San Francisco, CA 94109
(415) 771-6000

Permit Evaluation and Statement of Basis for Major Facility Review Permit Reopening - Revision 3.6

for
**Chevron Products Company
Facility #A0010**

Facility Address:

841 Chevron Way
Richmond, CA 94802

Mailing Address:

Post Office Box 1272
Richmond, CA 94802

November 2006

Applications (NSR/Title V) : 10158, 10729/13476, 10798/10797, 11503, 12693/12694
12975, 13023/ 13024, 13610/13012, 14096/14485, 14565/14566

Application Engineer: Greg Solomon, Senior Air Quality Engineer
Nathalia Prasetyo Jo, Air Quality Engineering Intern

Changes to the Permit

The legal and factual basis for the permit follows. The permit sections are described in the order that they are presented in the permit.

Note that this Rev 3.6 application #13024 includes the Title V portions of the following district applications: 10158, 11503, and 12975.

Section II

Table II A.1 will be revised to include the new S-7013 SRU Standby Generator per district application # 12975.

Table II A.1 will be revised to include the new S-6051 ALKY CTW per district application # 13023.

Table II A.1 will be revised to include the new S-4226 FGHT FCC Gasoline Hydrotreater per district application # 10729.

Table II A.1 will be revised to include the new S-4940 Tank D-4940 per district application # 14096.

Table II A.1 will be revised to include the new S-7601 Ink Jet Printing Operation per district application # 11503.

Table II A.1 will be revised to remove S-4093, S-4094, S-4095, and S-4402 per district application # 13610.

Table II.A.1 will be revised to update the throughput limit for S-4250 per condition #22979 (district application # 10158).

Table II.A.1 will be revised to update the throughput limit for S-4340, S-4341, S-4342, S-4343, and S-4349 per condition #469 (district application # 10798).

Table II A.2 will be revised to include the new condition # 23262 and to remove the old condition #20361, which is applicable to S-3127 Tank, per district application # 14565.

Table II A.2 will be revised to remove the old S-6051 MTBE Plant Cooling Tower per district application # 13023.

Table II A.3 will be revised to update the throughput limit for S-1296 and S-1514 per Condition #22641(district application # 10729).

Section IV

Table IV A.3.1 will be revised to remove S-4093, S-4094, S-4095, and S-4402 per district application # 13610.

Table IV A.3.2 will be revised to include S-4032, S-4033, S-4039, S-4040, S-4041, S-4046, S-4153, S-4154, S-4162, S-4163, S-4164, S-4165, S-4166, and S-4167 per Consent Decree case No. 03-04650, 6/27/05(sources are taken from Table IV.A.3.3) per district application # 13610.

Table IV A.3.3 will be revised to reflect the application of Regulation 9 Rule 10 and NSPS Subpart J and the removal of S-4095 per district application # 13610.

Table IV A.3.5 will be revised to update the NOx limit based on Condition # 469 part 6E2 from 30 ppmv to 20 ppmv per district application #10798.

Table IV A.4.1 will be revised to include S-7013 and the condition #22569 per district application # 12975.

Table IV A.5.1 will be revised to add NSPS 40 CFR Part 60 Subpart J (60.104, 60.104(a)(1), 60.105, 60.105(a)(4) and 60.105(e)(3)) per district application # 13610.

Table IV C.1.1 will be revised to include the edited condition #14596, which is applicable for the modified S-6051 per district application # 13023.

Table IV C.3.1 will be revised to include the condition #22979, which is applicable for the new S-4250 per district application # 10158.

Table IV C.3.1 will be revised to include the new S-4226 and the condition #22641 per district application # 10729.

Table IV E.2.1 will be revised to add NSPS 40 CFR Part 60 Subpart J (60.104(a)(2)(i), 60.105(a)(5), 60.105(a)(5)(i), 60.105(a)(5)(ii), 60.105(e)(4)(i), and 60.106 to 60.108) per district application # 13610.

Table IV F.1.3 will be revised to include S-4940 and the condition #23001 per district application # 14096.

Table IV F.1.13 will be revised to include condition #22641, which is applicable for S-1296 and S-1514 per district application # 10729.

Table IV G.1.6 will be revised to include the new condition # 23262, which is applicable to S-3127 Tank per district application # 14565.

Table IV H.3.1 will be revised to include S-7601 and the condition #22266 per district application # 11503.

Section VI

Condition # 469 will be revised to reflect changes in NO_x emissions limits as a result of 9-10 (per district applications # 13610 and 10798) and RACT adjustment due to NO_x emissions reductions required from Regulation 9, Rule 10.

Condition #11066 for S-4285 will be revised to add PM, CO, and Opacity limit under district application #13610.

Condition #14596 for S-6051 will be updated after completion of work authorized under district application #13023, which replaces S-6051 MTBE Plant Cooling Tower with the new S-6051 ALKY CTW.

Condition #19063 for S-4227, S-4228, and S-4229 will be revised to add SO₂ limit for the tail gas unit emission (A-20, A-21, A-22), and to include NSPS Subpart J and A per district application # 13610.

Condition # 22923 will be added to list the sources that are subject to the applicable requirements of NSPS Subpart J and A per district application # 13610.

Condition # 22979 will be added to S-4250 per district application # 10158.

Condition # 22569 will be added to S-7013 per district application # 12975.

Condition # 23001 will be added to S-4940 per district application # 14096.

Condition # 22266 will be added to S-7601 per district application # 11503.

Condition # 23262 will be added to S-3127 to replace the old condition #20361 per district application # 14565.

Condition # 22641 will be revised to correct the error in source number typing, and it will be added to S-4226, S-1296, and S-1514 per district application # 10729.

Condition # 12104, 12139, 13364 will be revised to replace the liquid mounted primary seal to the metallic shoe primary seal that extends below the liquid surface per district application # 12693.

Section VII

Table VII A.3.1 will be revised to remove S-4093, S-4094, S-4095, and S-4402 per district application # 13610.

Table VII A.3.2 will be revised to include S-4032, S-4033, S-4039, S-4040, S-4041, S-4046, S-4153, S-4154, S-4162, S-4163, S-4164, S-4165, S-4166, and S-4167 per Consent

Decree case No. 03-04650, 6/27/05(sources are taken from Table IV.A.3.3) per district application # 13610.

Table VII A.3.2 will be revised to update the Fuel flow limit based on Condition # 469 part 6E from 302 MMBTU/hr to 337.5 MMBTU/hr per district application # 10798.

Table VII A.3.3 will be revised to reflect the application of Regulation 9 Rule 10 and NSPS Subpart J and the removal of S-4095 per district application # 13610.

Table VII A.3.5 will be revised to update the NOx limit based on Condition # 469 part 6E2 from 30 ppmv to 20 ppmv per district application #10798.

Table VII A.4.1 will be revised to include the record-keeping requirement for S-7013 (condition # 22569) per district application # 12975.

Table VII A.5.1 is revised to add H2S limit associated with 40 CFR Part 60.104(a)(1) (monitoring requirement: 40 CFR Part 60.105(a)(4)) per district application # 13610.

Table VII A.5.1 is revised to add SO2 limit associated with 40 CFR Part 60.104(a)(2)(i) (monitoring requirement: 40 CFR Part 60.105(a)(5)) per district application # 13610.

Table VII C.1.1 will be revised to include the condition #14596 that will be effective after completion of work authorized under district application # 13023 for TDS and POC limit and monitoring requirement.

Table VII C.3.1 will be revised to add throughput limit and record keeping requirement, which are applicable for the new S-4250 (district application # 10158) and S-4226 (district application # 10729).

Table VII E.2.1 is revised to add SO2 limit and monitoring requirement associated with 40 CFR 60.104(a)(2)(i) and 40 CFR 60.105(a)(5) per district application # 13610.

Table VII F.1.3 will be revised to add throughput limit and record keeping requirement, which is applicable for the new S-4940 per district application # 14096.

Table VII F.1.13 will be revised to add throughput limit and record keeping requirement, which is applicable for S-1296 and S-1514 per district application # 10729.

Table VII G.1.6 will be revised to update the benzene and throughput limits according to the new condition # 23262, which is applicable to S-3127 Tank per district application # 14565.

Table VII H.3.1 will be revised to add ink and cleanup solvent annual limits and record keeping requirements, which are applicable for the new S-7601 per district application # 11503.

**EVALUATION REPORT
Chevron Products Co., Plant #10
Application Number 10158**

Background

The District is issuing a permit to Chevron Products Co. (“Chevron”) for what Chevron in its application denominates the “Change in Catalyst and Throughput Limit for Hydrogen Plant, S-4250” at its refinery located in Richmond. S-4250 serves S-4233 Jet Hydrotreater, S-4234 Naphtha Hydrotreater, S-4235 Diesel Hydrotreater, S-4252 TKN Isomax, S-4253 TKC, S-4282 Penhex, S-4340 RLOP LNC, S-4341 RLOP LNHF, S-4342 RLOP HNC, S-4343 RLOP HNHF, and S-4348 Hydrogen Recovery Plant. The annual throughput at S-4250 will increase from 54,750 MMscf of H2 produced to 66,102 MMscf of H2 produced. At this time, none of the sources listed above are on the grandfathered source table, Table IIA3 within the current Title V permit and the limits as listed are considered hard limits or enforceable limits. As described in 2-1-234, debottlenecking may only occur at a source that does not have a limit on capacity in a District permit.

The catalyst change at the A-train of S-4250 Hydrogen Plant is expected to reduce methanol emissions of that train by 80 – 90% by weight. A Shift Converter catalyst that generates less methanol became available in the late 1990s. Chevron switched to a low-methanol type the catalyst in the B train in the late 1990s and the district conducted a source test that demonstrated that methanol emissions were reduced through the use of the new catalyst.

Emission Calculations

Chevron submitted an emissions estimate that demonstrates that a reduction in emissions should occur as a result of this catalyst change even though there will also be an increase in throughput.

Chevron identified three areas of POC emissions associated with the Hydrogen Plant. Chevron presented a range for each category listed below based on an assumed reduction in methanol emissions. The table below uses the higher emitting range for comparison purposes.

	A train	B train	Total (existing)	Total (proposed)
Production (MMSCF H2/d)	75	75	150	181.1
Emissions from CO2 vents (lbs/d)	182	37	219	88.7
Methanol in condensate feed to deaerator (lbs/d)	211	42		101.4
Emissions from deaerator scrubber (lbs/d) (methanol in condensate x factor)	3	0.6	3.6	1.5
Total emissions (lbs/d)	185	37.6	222.6	90.2

Please note that the above emissions estimate is merely to demonstrate that POC emissions are expected to be reduced as a result of changing the catalyst. This POC emissions calculation should not be used for the purposes of banking. For banking purposes the procedure outlined in section 2-2-605 should be used.

Plant Cumulative Increase

The Plant Cumulative Increase is not expected to increase as a result of this application.

Toxic Risk Screening Analysis

A toxic risk screening analysis is not required for this application since no emissions increases are expected.

Statement of Compliance

The fugitive components within this application will be subject to 8-18-301, 302, 304, 306, and 307, which require, among other things, that organic compound leaks not exceed 100 ppm for general components, valves, and connections. Section 8-5-306 limits the percentages of non-repairable equipment allowed. Section 8-5-307 requires that leaking equipment not be used unless the leak was discovered by the operator, minimized within 24 hours and repaired within 7 days.

S-4340 –S-4343 will continue to satisfy BACT for POC's since these modified sources will vent to the fuel gas system, which is expected to control POC emissions to greater than 98% by weight. This BACT determination was originally made in application #4134 issued on 12/9/02. The increased throughput at these process units does not change any facts relevant to this determination. The sources will continue to vent to the fuel gas system, and there is no reason to anticipate that the increased throughput will affect the destruction efficiency of that system.

This application will not require offsets since this application will not result in an increase in permitted emissions.

This source is subject to MACT subpart DDDDD, which requires only initial notification unless these sources are new or reconstructed. Chevron provided information to demonstrate that these sources are not reconstructed.

PSD does not apply to this application.

CEQA Ministerial Exemption:

Per Section 2-1-311 of the District Rules and Regulations, a permit application for a proposed new or modified source will be classified as ministerial and will accordingly be exempt from the CEQA requirement of Section 2-1-310 if the District's engineering evaluation and basis for approval of the permit application for the project is limited to the criteria set forth in Section 2-1-428 and to the procedures, fixed standards and objective measurements set forth in the District's Permit Handbook and BACT/TBACT Workbook. The method for determining whether a given permit application will be classified as ministerial is set forth in Section 2-1-427.

Per Section 2-1-427, if the District determines that its evaluation of the permit application is covered by the specific procedures, fixed standards and objective measurements set forth in the District's Permit Handbook and BACT/TBACT Workbook, the District's evaluation of the permit application is classified as ministerial and the engineering evaluation of the permit application by the District will be limited to the use of said specific procedures, fixed standards and objective measurements. For such projects, the District will merely apply the law to the facts as presented in the permit application, and the District's decision regarding whether to issue the permit will be based only on the criteria set forth in Section 2-1-428 and in the District's Permit Handbook and BACT/TBACT Workbook.

For this permit application, the District determined that its evaluation of the permit application is covered by the specific procedures, fixed standards and objective measurements set forth in the District's Permit Handbook Chapters 3.4 Petroleum Refinery Fugitive Emissions and BACT/TBACT Workbook. Since the District classified this permit application as ministerial pursuant to Section 2-1-427, and as a result of its evaluation of the permit application, the District determined that all of the criteria for approval of ministerial permit applications pursuant to Section 2-1-428 were met, the issuance by the District of an Authority to Construct and Permit to Operate for the proposed project is a mandatory ministerial duty and is accordingly exempt from the CEQA requirement of Section 2-1-310.

The decision to grant the throughput increases at process units S-4250, S-4233, S-4234, S-4235, S-4252, S-4253, S-4282, S-4340, S-4341, S-4342, S-4343, and S-4348 does not involve discretion or judgment on the part of the District. As described above, S-4340 through S-4343 vent to the fuel gas system which has a 98% by weight destruction efficiency and therefore meets BACT, as has previously been determined. An increase in throughput does not present a basis for revisiting this BACT determination, and so no exercise of judgment is called for.

In addition to the ministerial exemption determination above, the District has also determined that the CEQA categorical exemption of Section 2-1-312.11 of the District Rules and Regulations and the CEQA "Common Sense Exemption" apply.

CEQA Categorical Exemptions and CEQA "Common Sense Exemption":

Though the District concludes that the project is ministerial, it also concludes that, even if it were not ministerial, certain other exemptions from CEQA apply (see CEQA Guidelines § 15300.1). Section 2-1-312 of the District Rules and Regulations sets forth specific types of projects, which have been determined by the District to be categorically exempt from CEQA.

Per Section 2-1-312.11, in addition to ministerial projects, permit applications for a new or modified source or sources or for process changes, which will satisfy the "No Net Emission Increase" provisions of District Regulation 2, Rule 2 and for which there is no possibility that the project may have any significant environmental effect in connection with any environmental media or resources other than air quality, are exempt from the CEQA review. The reason for this exemption should be apparent on its face: if a facility is given legal permission to emit more air pollutants from certain points while at the same time being disallowed permission for an equivalent amount of the same type of

emissions from other points at the facility, then there is deemed to be no net effect on the air environment, and therefore no possibility of a significant effect under CEQA, provided no-air impacts are also examined and deemed to be of no possible significant consequence.

Also, per the CEQA Guidelines in Title 14, California Code of Regulations, Chapter 3, Article 5, Section 15061(b)(3), a project is exempt from CEQA if the activity is covered by the general rule that CEQA applies only to projects, which have the potential for causing a significant effect on the environment. This is commonly known as the "Common Sense Exemption". Where it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment, the activity is not subject to CEQA. The "no net increase" exemption of 2-1-312.11 is essentially a specific, codified, instance of the Common Sense Exemption.

For this permit application, the District determined that the project will satisfy the "No Net Emission Increase" provisions of District Regulation 2, Rule 2. Chevron has completed and submitted to the District CEQA Appendix H, Environmental Information Form, for the project.

The District has reviewed the CEQA Appendix H form from Chevron dated 9/20/04. Chevron only checked "yes" for the items regarding "Site on filled land or on slope of 10 percent or more" and "Use of disposal of potentially hazardous materials, such as toxic substances, flammables or explosives." All other items on the form were checked "no". In the August 25, 2005 letter to the District, Chevron explained that the existing plant area is nearly flat and is much less than 10% sloped. The entire site of the existing plant is on hydraulic and engineered fill from the 1960's and earlier. No new areas will be filled. Also, no grading is planned for this project. Chevron asserts that the proposed construction of new pile-supported equipment at the project site would not result in on-or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.

Chevron has also submitted additional information in order for the District to determine the project's possible significant effects on surface and ground water. Based on the information contained in the Appendix H form submitted and Chevron's August 25, 2005 letter regarding possible water impacts, the District does not expect the potential water impacts to be significant. The district does not expect there to be an increase in diesel-fueled truck traffic to and from the refinery as a result of this project.

Based on all of the information before the District and the District's review of the information submitted, the District has determined that there is no possibility that the project may have any significant environmental effect.

The District finds these assertions and arguments to be credible. Thus, the District concludes that the permit application is exempt from CEQA because it is ministerial, it is categorically exempt from CEQA, and the project qualifies for the "Common Sense Exemption" of Subsection (b)(3) of the State CEQA Guidelines.

The District has considered whether this project is part of a larger project for CEQA purposes, and has concluded that it is not. Although other Chevron refinery permitting applications have been acted on or are currently pending before the District, the project is not necessarily linked to any of these. Specifically, completion of the project is not necessary in order for Chevron to proceed with other permit applications, nor is the

project a foreseeable consequence of other permit applications. In reaching this conclusion, the District is relying in part on a June 28, 2005, letter from Chevron responding to written questions from the District.

On a general level, the stated purpose of the project is to increase annual hydrogen production without an increase in emissions. This purpose does not imply any necessary relationship to other projects, in the sense of being prerequisite to other projects or a foreseeable consequence of them.

To address a more specific issue, Chevron has applied to increase its permit limit for annual throughput at its Hydrogen Plant. As stated in the June 28, 2005 letter that the sources affected by the application are not significant users of hydrogen. Hydrogen is used in a number of refinery processes, and there is considerable flexibility to increase consumption at one or more process without having to increase overall hydrogen-producing capacity simply by managing these processes. In order to find that the requested annual hydrogen plant throughput increase and the Turbo project are part of one project for CEQA purposes, the District would have to conclude that operation of the increase in annual hydrogen production necessarily requires the Turbo project. Based on available information, this finding can not be made.

Recommendation

Recommend that a Change in Conditions be granted for the following altered equipment:

S-4250 Hydrogen Manufacturing Plant equipped with low-methanol type Catalyst for Train A

Conditions

1. The owner/operator of S-4250 shall not exceed 66,102 MMSCF of hydrogen produced in any consecutive 12 month period. (cumulative increase)
2. The owner/operator of S-4250 shall not exceed 181.1 MMSCF of hydrogen produced on any calendar day. (cumulative increase)
3. The owner/operator of S-4250 shall maintain a district approved daily log of hydrogen produced with monthly summaries. This log shall be kept onsite for at least five years from the date of entry and be made available to district staff upon request. (record keeping)

EVALUATION REPORT
Chevron Products Co., Plant #10
Application Number 10729

Background

Chevron Products Co. ("Chevron") is proposing to permit S-4226 FGHT FCC Gasoline Hydrotreater, modify two storage tanks, and alter 6 process units and one furnace (S-4069) at its refinery located in Richmond. The FGHT is currently installed as part of the diesel hydrotreater (S-4235) but is not being used. The diesel hydrotreater originally required two hydrotreaters set up in series. The first hydrotreater was used to remove mainly sulfur and some aromatics and the second stage/hydrotreater used a different catalyst designed to remove aromatics but also removed residual sulfur. Both changing the catalyst in the first hydrotreater and the diesel formulation change in 1998 allowing more aromatics (up to 23%) eliminated the need for the second hydrotreater.

The second hydrotreater (S-4226) will now be used to meet both EPA/California's sulfur requirements of an average of 30 ppm sulfur on every barrel produced. This FCC gasoline stream (light, heavy and sidecut naphtha) currently goes directly to blending. The new gasoline sulfur requirements will require that the heavy and sidecut streams be further hydrotreated (by S-4226) prior to blending. This hydrotreater S-4226 originally consumed approximately 23 MM scfd of hydrogen and will now require approximately 1.2 MM scfd of hydrogen. The current sulfur plants have capacity to handle the sulfur removed from these streams. Furthermore, it can be assumed that the 23 MM scfd of hydrogen previously used by the hydrotreater would have a greater impact on sulfur loading compared to the proposed 1.2 MM scfd of hydrogen consumed.

Chevron is also installing a jump over line that will allow S-4226 to handle the feed from S-4235 if that unit goes down. Chevron asserts that S-4235 cannot hydrotreat the feed from S-4226. This change will provide Chevron with increased operational flexibility if S-4235 needs to shutdown. A permit condition will be added allowing the feed from S-4235 to be diverted to S-4226 if S-4235 is non-operational.

Storage Tanks S-1296 and S-1514 are switching service and will lose their grandfathered status. This application will result in an increase in fugitive emissions.

Emission Calculations

S-1296 and S-1514 External Floating Roof Storage Tanks, 6733K gal and 4767K gal capacities respectively

Emission estimates were performed using EPA's Tanks 4.0 program comparing the baseline emissions to the proposed emissions. The emission reductions from S-1296 will be used as contemporaneous emission offsets for the increase at S-1514 at a ratio of 1.0 to 1.0. Emission estimates were adjusted using P* to adjust for differences in vapor pressure. (Tanks 4.0 emissions calculations attached)

S-1296 External Floating Roof Storage Tank, 6733K gal capacity

Baseline: 13,600 #/yr
New: 10,843 #/yr
Contemporaneous offsets: 2757 #/yr, 1.379 tpy

S-1514 External Floating Roof Storage Tank, 4767K gal capacity

Baseline: 1524 #/yr
 New: 13,981 #/yr
 Increase: 12,457 #/yr, 6.229 tpy

Fugitives from S-4226 FGHT

Fugitive emission estimates from S-4226 were performed using the Correlation Equation Method in the "California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities." The existing fugitive components were fully offset when permitted in application 9014, therefore this application will only count the newly added components.

Valves: 134(0.00375 #/d) = 0.5025 #/d, 183.413 #/y

Pegged valves are assumed to emit at 10,000 ppm.

Pegged: 1(3.38 #/d) = 3.38 #/d, 1233.7 #/y

Flanges: 114(0.00619 #/d) = 0.7057 #/d, 257.581 #/y

Connectors: 105(0.00240 #/d) = 0.252 #/d, 91.98 #/y

Other: 2(0.00884 #/d) = 0.0177 #/d, 6.461 #/y

The pumps will be vented to a heater but any emissions from the control device are allowed to emit at 100 ppm and should be considered "other." This has occurred at Chevron previously where a pump was being abated but also had fugitive emissions around the shrouding of the pump.

Pumps(Other): 2(0.00884 #/d) = 0.0177 #/d, 6.461 #/y

Total Fugitive Emissions Increase: 1779.6 #/y, 0.890 tpy

Toxic Emission Increase

The District has historically examined increases in toxics in the context of its Risk Management Policy. Although the Risk Management Policy has recently been replaced by Regulation 2-5, the timing of this application means it will be reviewed under the former Risk Screen Policy. [Toxic emission factors are based on Table 20 from "Air Toxic Emission Factors for Combustion Sources Using Petroleum Based Fuels, Volume 1 Development of Emission Factors Using API/WSPA Approach" (1998), prepared by API.]

<u>Toxic Compound</u>	<u>Tank1296</u>	<u>Tank1514</u>	<u>Fugitives</u>	<u>Total</u>
Benzene	35 #/y	103 #/y	17.17 #/y	155.17 #/y
Hexane:	81.51	60.84	8.6	150.95
Isooctane:	108.98	84.72	n/a	193.7
Toluene:	110.93	89.96	244.67	445.56
Ethylbenzene:	9.04	8.38	n/a	17.42
Xylene:	39.70	37.9	480.75	558.35

Isopropyl benzene:	1.99	2.10	n/a	4.09
Trimethylbenzene:	6.61	8.01	n/a	14.62
Cyclohexane:	12.60	9.52	n/a	22.12
Phenol:			n/a	
Cresol			n/a	
Naphthalene			1.7	1.7

Storage Tanks (S-1296 and S-1514) will be permitted to handle materials with a benzene content of 2.75% by weight. The typical benzene content in these tanks was as low as 0.5% by weight. Therefore, this will result in an increase in the benzene emissions associated with the fugitive components associated with these tanks. Chevron estimates that this increase in benzene emissions will occur at approximately 20 flanges and 15 valves.

Flanges:	20(0.00619 #/d) =	0.124 #/d,	45.26 #/y
Valves:	15(0.00375 #/d) =	0.056 #/d,	<u>20.53 #/y</u>
			65.79 #/y

assuming an increase in benzene of 2.25% by weight

benzene: $65.79 \text{ #/y} \times 0.0225 = 1.48 \text{ #/y}$

Pursuant to the Risk Management Policy, a risk screening analysis is required for this application. Results from the health risk screening analysis indicate that the maximum cancer risk is estimated at 0.5 in a million and the maximum hazard quotient is less than 1 (see memo from Daphne Chong dated 10/13/05). In accordance with the district's Risk Management Policy, this risk level is considered acceptable since it is less than one in a million. Aside from implementation of the Risk Management Policy, Regulation 2-5, and AB2588, the District does not have authority to address increases in toxic emissions.

Plant Cumulative Increase

Emission increases are estimated above. The increases in emissions are offset by the appropriate offset ratio per Regulation 2-2. Chevron has submitted a banking certificate #617 in order to fully offset the emission increases from this project.

777

Criteria Pollutants	Increases from this application (tank+fugitive-contemporaneous offsets)	Offset ratio	Emission Offsets (Banking Certificate #777)	New Total
POC:	5.74 tpy	1.15:1.0	-6.601 tpy	0.0 tpy

Toxic Risk Screening Analysis

<u>Toxic</u>	<u>Emission Rate</u>	<u>Trigger level</u>
Benzene total:	156.65 #/y	6.4 #/y
Hexane:	150.95	2.7 E5

Isooctane:	193.7	n/a
Toluene:	445.56	1.2E4
Ethylbenzene:	17.42	7.7E4
Xylene:	558.35	2.7E4
Isopropyl benzene:	4.09	n/a
Trimethylbenzene:	14.62	n/a
Cyclohexane:	22.12	n/a
Phenol	n/a	7.7E3
Cresol	n/a	2.3E4
Naphthalene	1.7	5.3

A risk screening analysis is required for this application. Results from the health risk screening analysis indicate that the maximum cancer risk is estimated at 0.04 in a million. In accordance with the district's Risk Management Policy, this risk level is considered acceptable since it is less than one in a million.

The risk screening analysis also discussed the cumulative risk due to other potentially related applications. Even if the applications are a single project, as defined in 2-5-216, the combined project emissions meet the project risk standard of 10 in a million (2-5-302).

Statement of Compliance

S-1296 and S-1514 will comply with Regulation 8-5, sections 301, 304, 320, 321, 322, and 328, which require that external floating roof storage tanks larger than 19,813 gallons be equipped with either liquid mounted or metallic shoe primary seals and a secondary seal subject to 8-5-321 and 322 respectively and that the roof be in full contact with the liquid surface. Section 8-5-328 requires that tank degassing operations be controlled.

The fugitive components within this application will comply with 8-18-301, 302, 304, 306, and 307, which require that organic compound leaks not exceed 100 ppm for general components, valves, and connections. Section 8-5-306 limits the percentages of non-repairable equipment allowed. Section 8-5-307 requires that leaking equipment not be used unless the leak was discovered by the operator, minimized within 24 hours and repaired within 7 days.

S-1514 will trigger BACT since the POC emissions will be greater than 10 pounds per highest day. The district's BACT/TBACT Workbook (Table 167.1.1, 3/3/95) specifies that BACT1 is a vapor recovery system with an overall system efficiency greater than or equal to 98%. Chevron submitted data that demonstrated for an external floating roof tank equipped with vapor collection, routing, and treatment the cost effectiveness is \$22,999/ton reduced. This exceeds the district criteria of \$17,500/ton reduced. The use of a mechanical shoe primary seal that extends below the liquid surface and a secondary seal complying with Regulation 8-5-322 meets the BACT2 requirements. TBACT does not apply since the source risk is less than 1 in a million.

This application will require 6.601 tpy of POC offsets. Chevron submitted Banking Certificate #777 in order to fully offset the increase in POC emissions.

CEQA Ministerial Exemption:

Per Section 2-1-311 of the District Rules and Regulations, a permit application for a proposed new or modified source will be classified as ministerial and will accordingly be exempt from the CEQA requirement of Section 2-1-310 if the District's engineering evaluation and basis for approval of the permit application for the project is limited to the criteria set forth in Section 2-1-428 and to the procedures, fixed standards and objective measurements set forth in the District's Permit Handbook and BACT/TBACT Workbook. The method for determining whether a given permit application will be classified as ministerial is set forth in Section 2-1-427.

Per Section 2-1-427, if the District determines that its evaluation of the permit application is covered by the specific procedures, fixed standards and objective measurements set forth in the District's Permit Handbook and BACT/TBACT Workbook, the District's evaluation of the permit application is classified as ministerial and the engineering evaluation of the permit application by the District will be limited to the use of said specific procedures, fixed standards and objective measurements. For such projects, the District will merely apply the law to the facts as presented in the permit application, and the District's decision regarding whether to issue the permit will be based only on the criteria set forth in Section 2-1-428 and in the District's Permit Handbook and BACT/TBACT Workbook.

For this permit application, the District determined that its evaluation of the permit application is covered by the specific procedures, fixed standards and objective measurements set forth in the District's Permit Handbook Chapters 3.4 and 4.1 and BACT/TBACT Workbook. Since the District classified this permit application as ministerial pursuant to Section 2-1-427, and as a result of its evaluation of the permit application, the District determined that all of the criteria for approval of ministerial permit applications pursuant to Section 2-1-428 were met, the issuance by the District of an Authority to Construct and Permit to Operate for the proposed project is a mandatory ministerial duty and is accordingly exempt from the CEQA requirement of Section 2-1-310.

In addition to the ministerial exemption determination above, the District has also determined that the CEQA categorical exemption of Section 2-1-312.11 of the District Rules and Regulations and the CEQA "Common Sense Exemption" apply.

CEQA Categorical Exemptions and CEQA "Common Sense Exemption":

Though the District concludes that this project is ministerial, it also concludes that, even if it were not ministerial, certain other exemptions from CEQA apply (see CEQA Guidelines § 15300.1). Section 2-1-312 of the District Rules and Regulations sets forth specific types of projects, which have been determined by the District to be categorically exempt from CEQA.

Per Section 2-1-312.11, in addition to ministerial projects, permit applications for a new or modified source or sources or for process changes, which will satisfy the "No Net Emission Increase" provisions of District Regulation 2, Rule 2 and for which there is no possibility that the project may have any significant environmental effect in connection with any environmental media or resources other than air quality, are exempt from the CEQA review. The reason for this exemption should be apparent on its face: if a facility is given legal permission to emit more air pollutants from certain points while at the same time being disallowed permission for an equivalent amount of the same type of emissions from other points at the facility, then there is deemed to be no net effect on the air environment, and therefore no possibility of a significant effect under CEQA, provided no-air impacts are also examined and deemed to be of no possible significant consequence.

Also, per the CEQA Guidelines in Title 14, California Code of Regulations, Chapter 3, Article 5, Section 15061(b)(3), a project is exempt from CEQA if the activity is covered by the general rule that CEQA applies only to projects, which have the potential for causing a significant effect on the environment. This is commonly known as the "Common Sense Exemption". Where it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment, the activity is not subject to CEQA. The "no net increase" exemption of 2-1-312.11 is essentially a specific, codified, instance of the Common Sense Exemption.

For this permit application, the District determined that the project will satisfy the "No Net Emission Increase" provisions of District Regulation 2, Rule 2.

Chevron has completed and submitted to the District CEQA Appendix H, Environmental Information Form, for the project.

The District has reviewed the CEQA Appendix H form. Chevron checked "yes" for the item regarding "Site on filled land or on slope of 10 percent or more." Chevron also checked "yes" for the use and disposal of potentially hazardous materials, however Chevron asserts that this project will not increase the use or disposal of potentially hazardous materials. All other items on the form were checked "no." In the attachment to Appendix H, Chevron explained that construction will take place in a process plant area, which was constructed on filled land. No additional filling will be required for this project. In the TURBO application #10798, Chevron asserted that the entire site of the existing plant is on hydraulic and engineered fill from the 1960's and earlier. The District accepts this assertion for this application. No new areas will be filled. Also, no grading is planned for this project. Chevron asserts that the proposed construction of new pile-supported equipment at the project site would not result in on-or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse. Chevron has also submitted additional information in order for the District to determine the project's possible significant effects on surface and ground water and diesel-fueled truck traffic air impacts. Based on the information contained in the Appendix H form submitted and Chevron's August 25, 2005 letter regarding possible water impacts and the number of diesel-fueled truck trips associated with the project, the District does not expect either to be significant.

Based on all of the information before the District and the District's review of the information submitted, the District has determined that there is no possibility that the project may have any significant environmental effect.

Per Section 2-1-312.7, permit applications for the replacement or reconstruction of existing sources or facilities, where the new source or facility will be located on the same site as the source or facility replaced and will have substantially the same purpose and capacity as the source or facility replaced, are exempt from the CEQA review.

Thus, the District concludes that the permit application is exempt from CEQA because it is ministerial, it is categorically exempt from CEQA, and the project qualifies for the "Common Sense Exemption" of Subsection (b)(3) of the State CEQA Guidelines.

The District has considered whether the FGHT is part of a larger project for CEQA purposes, and has concluded that it is not. Although other Chevron refinery permitting applications have been acted on or are currently pending before the District, the FGHT is not necessarily linked to any of these. Completion of the FGHT is not necessary in order for Chevron to proceed with other permit applications, nor is the FGHT a foreseeable consequence of other permit applications. In reaching this conclusion, the District is relying in part on a June 28, 2005, letter from Chevron responding to written questions from the District.

The primary purpose of the FGHT is to provide additional sulfur removal capacity from light, heavy, and sidecut naphtha streams so as to meet new regulatory requirements for fuel sulfur content. This purpose does not imply any necessary relationship to other projects, in the sense of being prerequisite to other projects or a foreseeable consequence of them. The existing sulfur treatment plant has capacity to handle additional sulfur from the FGHT. In any case, the throughput of the sulfur plant is limited by permit condition #19063 therefore, it will not be debottlenecked.

The following addresses the question of relatedness to a specific permit application. Chevron has applied to increase its permit limit for annual throughput at its Hydrogen Plant. As stated in the June 28 letter that the sources affected by the FGHT application are not significant users of hydrogen. Hydrogen is used in a number of refinery processes, and there is considerable flexibility to increase consumption at one or more process without having to increase overall hydrogen-producing capacity simply by managing these processes. In order to find that the FGHT project and the requested annual hydrogen plant increase are part of one project for CEQA purposes, the District would have to conclude that operation of the FGHT necessarily requires an increase in annual hydrogen production. Based on available information, this is not the case. Additional hydrogen use required by the FGHT is minor, and can be supplied by operational adjustments at other units without increasing overall hydrogen production.

NSPS subpart Kb requires that the external roof be equipped with either a liquid or mechanical shoe primary and rim mounted secondary seals.

This source is subject to refinery MACT, which per section 63.640(n)(1) requires compliance with NSPS subpart Kb. Sources S-1296 and S-1514 will comply.

PSD does not apply to this application.

Recommendation

Recommend that the Authority to Construct be waived and that the following equipment be granted a Permit to Operate:

- S-1296 External Floating Roof Storage Tank, 6733 kgal capacity equipped with a mechanical shoe primary seal and rim mounted secondary seal**
- S-1514 External Floating Roof Storage Tank, 4767 kgal capacity equipped with a mechanical shoe primary seal and rim mounted secondary seal**
- S-4226 FGHT FCC Gasoline Hydrotreater, 64,800 BPD**

Recommend that a Permit to Operate be issued for the following altered equipment:

- S-4069 VGO Furnace F-1660, 55 MMBtu/h**
- S-4233 Jet Hydrotreater**
- S-4234 #5 NHT Unit, 57,600 BPD**
- S-4235 Diesel Hydrotreater, 64,800 BPD**

S-4236	#4 Crude Unit
S-4253	TKC Unit
S-4285	FCCU

Conditions

Plant 10, Application 10729, S-1296, S-1514, S-4226

1. The owner/operator of S-1296 shall not exceed 3,495,000 barrels of material throughput during any consecutive 12 month period. (cumulative increase)
2. The owner/operator of S-1296 shall only store materials with a vapor pressure that shall not exceed 4.1 psia. The concentration of benzene in materials stored at S-1296 shall not exceed 2.75% by weight. (toxics, 2-5)
3. The owner/operator of S-1514 shall not exceed 3,000,000 barrels of material throughput during any consecutive 12 month period. (cumulative increase)
4. The owner/operator of S-1514 shall only store materials with a vapor pressure that shall not exceed 9.8 psia. The concentration of benzene in materials stored at S-1514 shall not exceed 2.75% by weight. (toxics, 2-5)
5. The owner/operator of S-4226 shall not exceed 64,800 barrels of material throughput during any calendar day. (cumulative increase)
6. The owner/operator of S-4226 shall only divert feed from S-4234 during periods when S-4234 is shut down. At no time shall the feed from S-4226 be diverted to S-4234. The throughput during the shut down of S-4234 shall not exceed the lower throughput limit of either S-4234 or S-4226. (cumulative increase)
7. The owner/operator of S-1296 and S-1514 shall maintain a district approved monthly log of all storage tank throughput, type, benzene weight percentage, storage vapor pressure, and all inspection records. The owner/operator of S-4226 shall maintain a district approved daily log of all material throughput. These records shall be kept on site for at least 5 years from the date of entry and be made available to district staff upon request. (2-1-403)

**EVALUATION REPORT
Chevron Products Co., Plant #10
Application Number 10798**

Background

The District is issuing a permit to Chevron Products Co. ("Chevron") for what Chevron in its application denominates the Three Stage Upgrade to Richmond Base Oil Project ("TURBO") at its refinery located in Richmond. This project will increase the throughput at the RLOP Process Units (S-4340 – S-4343), S-4349 HNHf Furnace F-1650, S-4338 F-1550, S-4346 GRU, and require installation of some additional fugitive components. Because the units are subject to District permit limitations on throughput or maximum capacity, a change to these conditions is necessary in order to operate at the higher levels. Some physical changes are necessary, and are addressed in the Application, because operation at the higher throughput levels will require replacement of existing pumps with larger pumps, piping, etc. that feed and draw from the process units. In addition to these throughput changes at process units, one furnace functioning as a process heater (S-4349) will increase in maximum firing rate from 11 MMBtu/h to 16.5 MMBtu/h. However, Chevron is accepting a permit condition limiting the NOx concentration from S-4349 (to 20 ppm), the effect of which is that there will be no increase in NOx emissions even at the increased firing rate. According to Chevron these changes are being made in order to accommodate customer base oil demands.

Emission Calculations

The current version of AP42 Chapter 5 includes an emission factor for vacuum distillation of 50 pounds of organics per thousand barrels. The light ends from the vacuum distillation are vented to the vent gas recovery for use in the refinery fuel gas system. Table 5.1-1 lists the hydrocarbon emissions as negligible if vented to a heater or incinerator. However, in the explanation of this emission factor, AP42 states that systems vented to fuel gas systems are generally greater than 99% efficient at controlling hydrocarbon emissions, but will contribute to combustion emissions. Chevron asserts that the increase in combustion emissions created from the light ends from the vacuum distillation merely offsets fuel usage. For purposes of these emission estimates it will be assumed that the fuel gas system is 98% efficient in controlling organic compound emissions, and that the emissions from combustion of increased fuel gas will be equal to those from displaced fuel.

$$50 \text{ \#/Mbbbl}(1.0 - 0.98) = 1 \text{ \#/Mbbbl}$$

S-4340, S-4341, S-4342, and S-4343 all have vacuum distillation.

S-4340 Light Neutral Hydrocracker (LNC)

Throughput at this source will increase from 15,500 bpd to 16,500 bpd or a 1000 bpd increase.

$$\text{POC: } 1000 \text{ bpd}(1 \text{ \#/Mbbbl}) = 1 \text{ \#/d, } 365 \text{ \#/y}$$

S-4341 Light Neutral Hydrofinisher (LNHF)

Throughput at this source will increase from 19,000 bpd to 22,000 bpd or a 3000 bpd increase.

$$\text{POC: } 3000 \text{ bpd}(1 \text{ \#/Mbbbl}) = 3 \text{ \#/d, } 1095 \text{ \#/y}$$

S-4342 Heavy Neutral Hydrocracker (HNC)

Throughput at this source will increase from 20,000 bpd to 26,000 bpd or a 6000 bpd increase.

POC: 6000 bpd(1 #/Mbbbl) = 6 #/d, 2190 #/y

S-4343 Heavy Neutral Hydrofinisher (HNHF)

Throughput at this source will increase from 8000 bpd to 12000 bpd or a 4000 bpd increase.

POC: 4000 bpd(1 #/Mbbbl) = 4 #/d, 1460 #/y

Total increase in emissions from process units 5110 #/y, 2.555 tpy

S-4349 HNHF F-1650 Furnace

The allowed firing rate for this source will increase from 11 MM Btu/h to 16.5 MM Btu/h. Chevron submitted estimates of emission increases that would result from this increase, and the District believes these estimates are reliable. The furnace will be installing low NOx burners in order to reduce NOx emissions from 30 ppm to 20 ppm. The result is that NOx emissions will not increase though emissions of some other pollutants will.

The following are the increases in emissions:

NOx: 0 tpy
CO: 0.894 tpy
SOx: 0.201 tpy
POC: 0.073 tpy
PM10: 0.256 tpy

Toxic emissions increase from increased firing. The District has historically examined increases in toxics in the context of its Risk Management Policy. Although the Risk Management Policy has recently been replaced by Regulation 2-5, the timing of this application means it will be reviewed under the former Risk Screen Policy. Toxic emission factors are based on Table 20 from "Air Toxic Emission Factors for Combustion Sources Using Petroleum Based Fuels, Volume 1 Development of Emission Factors Using API/WSPA Approach" (1998), prepared by API.

<u>Toxic compound</u>	<u>emission factor</u>	<u>emissions increase(5.5 MMBtu/h)</u>
PAH's	1.96E-7 #/MMBtu	0.009 #/y
Naphtahalene	3.90E-7	0.019
Phenol	4.0E-6	0.193
Acetaldehyde	1.20E-5	0.578
Benzene	6.00E-5	2.89
Formaldehyde	5.20E-5	2.51
Hydrogen sulfide	8.5E-5	4.10
Toluene	1.5E-4	7.23
Xylene	2.5E-5	1.21
Metals		
Arsenic	7.20E-7	0.035
Beryllium	1.30E-7	0.006
Cadmium	1.5E-6	0.073

Chromium(total)	5.70E-6	0.275
Copper	4.70E-6	0.226
Lead	3.8E-6	0.183
Manganese	4.90E-6	0.236
Mercury	1.80E-7	0.009
Nickel	7.50E-6	0.361
Phosphorus	6.40E-7	0.031
Selenium	8.80E-7	0.042
Zinc	1.40E-3	67.45

Fugitives

Fugitive emission estimates were performed using the Correlation Equation Method in the "California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities." The District is evaluating only the newly added components because no other fugitive emissions increases are expected. Chevron submitted a fugitive emission estimate that was performed using API publication #4612, which is much more conservative (yielding higher emission estimates) than the currently District accepted "California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities." In order to be consistent with current district practice, fugitive emission estimates were performed using the less conservative Correlation Equation Method.

Valves: $207(0.00375 \text{ \#/d}) = 0.7763 \text{ \#/d}, 283.35 \text{ \#/y}$

Pegged valves are assumed to emit at 10,000 ppm. Assume the allowable number of pegged leakers per 8-18-306.2.

Pegged: $1(3.38 \text{ \#/d}) = 3.38 \text{ \#/d}, 1233.7 \text{ \#/y}$

Flanges: $111(0.00619 \text{ \#/d}) = 0.687 \text{ \#/d}, 250.788 \text{ \#/y}$

Total Fugitive Emissions Increase: $1767.84 \text{ \#/y}, 0.884 \text{ tpy}$

Toxic emissions from fugitive emissions increases

Since these streams are heavier, the concentrations of HAPs are fairly low.

Benzene: $1767.84 \text{ \#/y}(0.005) = 8.84 \text{ \#/y}$

Naphthalene: $1767.84 \text{ \#/y}(0.005) = 8.84 \text{ \#/y}$

Xylene: $1767.84 \text{ \#/y}(0.005) = 8.84 \text{ \#/y}$

Debottlenecking analysis:

This project increases the capacity of several process units. If the throughput at an upstream or downstream unit is limited by the capacity of one of the TURBO project units, then, per 2-1-234.3, it is possible for the upstream or downstream unit to be "debottlenecked," and therefore modified, as a result of the TURBO project application. As described in 2-1-234, debottlenecking may only occur at a source that does not have a limit on capacity in a District permit.

Chevron submitted a Trade Secret process flow diagram of the RLOP Project that shows the process trains for each source and the upstream and downstream sources. The upstream source is the S-4236, No. 4 Crude Unit, which has only fugitive POC emissions that will not be increasing. The Crude Unit's associated furnaces S-4070 through S-4072 currently have limits within the Title V Permit and are included in the RLOP emissions cap (or bubble) Condition #469, which is considered fully offset. The downstream endpoints from the TURBO Project process units are tanks, pipeline, or the Wharf. These endpoints draw from multiple feed lines, and so the TURBO project sources are not a restriction on the capacities. The tanks and the Wharf are both included in the RLOP emissions cap and are considered fully offset and are not expecting an increase beyond the existing RLOP emissions cap. The pipeline is not a source.

Plant Cumulative Increase

Emission increases are estimated above. The increases in emissions are offset by the appropriate offset ratio per Regulation 2-2. Chevron has submitted a banking certificate #617 in order to fully offset the emission increases from this project.

Criteria Pollutants	Increases from this application	Offset ratio	Emission Offsets (Banking Certificate #617)	New Total
POC:	3.512 tpy	1.15:1.0	-4.039 tpy	0.0 tpy
NOx:	0.0 tpy			0.0 tpy
CO:	0.894 tpy			0.894 tpy
SOx:	0.201 tpy	1.0:1.0	-0.201 tpy	0.0 tpy
PM10:	0.256 tpy	1.0:1.0	-0.256 tpy	0.0 tpy

Toxic Risk Screening Analysis

This application was received prior to July 1, 2005, therefore, as noted above, new Rule 2-5 does not apply per section 2-5-112.1 and this project will be reviewed under the Risk Management Policy and procedures prior to the adoption of Rule 2-5.

<u>Toxic</u>	<u>Combustion Emission Rate</u>	<u>Fugitive Emission Rate</u>	<u>Total</u>	<u>Trigger level</u>
PAH's	0.009 #/y			4.4E-2 #/y
Naphtahalene	0.019	8.84 #/y	8.86 #/y	2.7E2
Phenol	0.193			8.7E3
Acetaldehyde	0.578			7.2E1
Benzene	2.89	8.84	11.73	6.7
Formaldehyde	2.51			3.3E1
Hydrogen sulfide	4.10			8.1E3
Toluene	7.23			3.9E4
Xylene	1.21	8.84	10.05	5.8E4
Metals				
Arsenic	0.035			2.5E-2
Beryllium	0.006			1.4E-2

Cadmium	0.073	4.6E-2
Chromium(total)	0.275	1.3E-3
Copper	0.226	4.6E2
Lead	0.183	1.6E1
Manganese	0.236	7.7E1
Mercury	0.009	5.8E1
Nickel	0.361	7.3E-1
Phosphorus	0.031	1.4E1
Selenium	0.042	9.7E1
Zinc	67.45	6.8E3

Pursuant to the Risk Management Policy, a risk screening analysis is required for this application. Results from the health risk screening analysis indicate that the maximum cancer risk is estimated at 0.5 in a million and the maximum hazard quotient is less than 1 (see memo from Daphne Chong dated 10/13/05). In accordance with the district's Risk Management Policy, this risk level is considered acceptable since it is less than one in a million. Aside from implementation of the Risk Management Policy, Regulation 2-5, and AB2588, the District does not have authority to address increases in toxic emissions.

Statement of Compliance

The fugitive components within this application will be subject to 8-18-301, 302, 304, 306, and 307, which require, among other things, that organic compound leaks not exceed 100 ppm for general components, valves, and connections. Section 8-18-306 limits the percentages of non-repairable equipment allowed. Section 8-18-307 requires that leaking equipment not be used unless the leak was discovered by the operator, minimized within 24 hours and repaired within 7 days.

The increased firing rate at furnace F-1650 (S-4349) will trigger BACT for CO since the CO emissions will be greater than 10 pounds per highest day. Per the district's BACT/TBACT Workbook, BACT for a 5 to 50 MMBtu/Hr refinery process heater is satisfied by meeting a CO limit of 50 ppmv @3% O2 dry. The furnace is already subject to this limit, and so is already meeting BACT. Therefore no additional permit conditions are required.

S-4340 –S-4343 will satisfy BACT for POC's since these modified sources will vent to the fuel gas system, which is expected to control POC emissions to greater than 98% by weight. This BACT determination was originally made in application #4134 issued on 12/9/02. The increased throughput at these process units does not change any facts relevant to this determination. The sources will continue to vent to the fuel gas system, and there is no reason to anticipate that the increased throughput will affect the destruction efficiency of that system.

This application will require 4.039 tpy of POC offsets since this application will result in an increase in permitted POC emissions. This application will also require 0.201 tpy of SOx offsets and 0.256 tpy of PM10 offsets. Chevron submitted Banking Certificate #617 in order to fully offset these increases with the exception of CO, which does not require offsets per the district's "No Net Emission Increase" provisions of Rule 2-2. Thus there will be no net emissions increase for POC, SOx, and PM10.

S-4338 and S-4349 will continue to be subject to NSPS subpart J, which requires that the fuel be continuously monitored for H₂S and not exceed 230 mg/dscm.

New fugitive components (valves and connectors) at S-4342 and S-4343 will be subject to NSPS subpart GGG.

NSPS subpart QQQ will not be triggered since four process drains will be removed and added to the same sources.

This source is subject to MACT subpart DDDDD, which requires only initial notification unless these sources are new or reconstructed. Chevron provided information to demonstrate that these sources are not reconstructed.

PSD does not apply to this application.

CEQA Ministerial Exemption:

Per Section 2-1-311 of the District Rules and Regulations, a permit application for a proposed new or modified source will be classified as ministerial and will accordingly be exempt from the CEQA requirement of Section 2-1-310 if the District's engineering evaluation and basis for approval of the permit application for the project is limited to the criteria set forth in Section 2-1-428 and to the procedures, fixed standards and objective measurements set forth in the District's Permit Handbook and BACT/TBACT Workbook. The method for determining whether a given permit application will be classified as ministerial is set forth in Section 2-1-427.

Per Section 2-1-427, if the District determines that its evaluation of the permit application is covered by the specific procedures, fixed standards and objective measurements set forth in the District's Permit Handbook and BACT/TBACT Workbook, the District's evaluation of the permit application is classified as ministerial and the engineering evaluation of the permit application by the District will be limited to the use of said specific procedures, fixed standards and objective measurements. For such projects, the District will merely apply the law to the facts as presented in the permit application, and the District's decision regarding whether to issue the permit will be based only on the criteria set forth in Section 2-1-428 and in the District's Permit Handbook and BACT/TBACT Workbook.

For this permit application, the District determined that its evaluation of the permit application is covered by the specific procedures, fixed standards and objective measurements set forth in the District's Permit Handbook Chapters 3.4 and 2.4 and BACT/TBACT Workbook. Since the District classified this permit application as ministerial pursuant to Section 2-1-427, and as a result of its evaluation of the permit application, the District determined that all of the criteria for approval of ministerial permit applications pursuant to Section 2-1-428 were met, the issuance by the District of an Authority to Construct and Permit to Operate for the proposed project is a mandatory ministerial duty and is accordingly exempt from the CEQA requirement of Section 2-1-310.

The decision to grant the throughput increases at process units S-4340, S-4341, S-4342, S-4343, and S-4349 does not involve discretion or judgment on the part of the District. As described above, S-4340 through S-4343 vent to the fuel gas system which has a 98% destruction efficiency and therefore meets BACT, as has previously been determined. An increase in throughput does not present a basis for revisiting this BACT determination, and so no exercise of judgment is called for. S-4349 is likewise already subject to BACT and the increase in firing rate sought by Chevron is not relevant to the determination of BACT.

In addition to the ministerial exemption determination above, the District has also determined that the CEQA categorical exemption of Section 2-1-312.11 of the District Rules and Regulations and the CEQA "Common Sense Exemption" apply.

CEQA Categorical Exemptions and CEQA "Common Sense Exemption":

Though the District concludes that the TURBO project is ministerial, it also concludes that, even if it were not ministerial, certain other exemptions from CEQA apply (see CEQA Guidelines § 15300.1). Section 2-1-312 of the District Rules and Regulations sets forth specific types of projects, which have been determined by the District to be categorically exempt from CEQA.

Per Section 2-1-312.11, in addition to ministerial projects, permit applications for a new or modified source or sources or for process changes, which will satisfy the "No Net Emission Increase" provisions of District Regulation 2, Rule 2 and for which there is no possibility that the project may have any significant environmental effect in connection with any environmental media or resources other than air quality, are exempt from the CEQA review. The reason for this exemption should be apparent on its face: if a facility is given legal permission to emit more air pollutants from certain points while at the same time being disallowed permission for an equivalent amount of the same type of emissions from other points at the facility, then there is deemed to be no net effect on the air environment, and therefore no possibility of a significant effect under CEQA, provided no-air impacts are also examined and deemed to be of no possible significant consequence.

Also, per the CEQA Guidelines in Title 14, California Code of Regulations, Chapter 3, Article 5, Section 15061(b)(3), a project is exempt from CEQA if the activity is covered by the general rule that CEQA applies only to projects which have the potential for causing a significant effect on the environment. This is commonly known as the "Common Sense Exemption". Where it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment, the activity is not subject to CEQA. The "no net increase" exemption of 2-1-312.11 is essentially a specific, codified, instance of the Common Sense Exemption.

For this permit application, the District determined that the project will satisfy the "No Net Emission Increase" provisions of District Regulation 2, Rule 2. CO emissions will increase by less than a ton per year. CO is not an ambient air concern in the Bay Area, nor is it possible that CO emissions on this order will create a localized impact. Chevron has completed and submitted to the District CEQA Appendix H, Environmental Information Form, for the project.

The District has reviewed the CEQA Appendix H form. Chevron only checked "yes" for the item regarding "Site on filled land or on slope of 10 percent or more." All other items on the form were checked "no". In the August 25, 2005 letter to the District, Chevron explained that the existing plant area is nearly flat and is much less than 10% sloped. The entire site of the existing plant is on hydraulic and engineered fill from the 1960's and earlier. No new areas will be filled. Also, no grading is planned for this project. Chevron asserts that the proposed construction of new pile-supported equipment at the project site would not result in on-or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse. Chevron has also submitted additional information in order for the District to determine the project's possible significant effects on surface and ground water and diesel-fueled truck traffic air impacts. Based on the information contained in the Appendix H form submitted and Chevron's August 25, 2005 letter regarding possible water impacts and the number of diesel-fueled truck trips associated with the project, the District does not expect either to be significant.

Based on all of the information before the District and the District's review of the information submitted, the District has determined that there is no possibility that the project may have any significant environmental effect.

Per Section 2-1-312.7, permit applications for the replacement or reconstruction of existing sources or facilities, where the new source or facility will be located on the same site as the source or facility replaced and will have substantially the same purpose and capacity as the source or facility replaced, are exempt from the CEQA review.

Chevron stated in the August 25, 2005 letter to the BAAQMD that:

Much of the project is exempt from CEQA under CEQA Guidelines § 15302, Replacement or Reconstruction. This exemption applies to: " replacement or reconstruction of existing structures and facilities where the new structure will be located on the same site as the structure replaced. ..[for example] (b) Replacement of a commercial structure with a new structure of substantially the same size, purpose, and capacity."

The TURBO project is exempt pursuant to § 15302 because the project involves minor replacement and reconstruction of existing RLOP process units and parts of process units with newer equipment. As described in the permit application, the primary purpose of the TURBO project is to make minor modifications to "existing" units to: (i) increase the firing rate of the Heavy Neutral Hydrofinishing Plant Furnace; and (ii) to increase the throughput of the Light Neutral Hydro-Cracking Plant, Light Neutral Hydro-Finishing Plant, Heavy Neutral Hydro-Cracking Plant and Heavy Neutral Hydro-Finishing Plant. The reconstructed units will remain the same size and be used for the same purpose as the original units and remain "substantially" the same capacity. The increased throughput will result in RLOP processing approximately three percent more of the refinery's existing capacity, and will not result in any increase in refinery capacity. This increase in the RLOP capacity should not be considered a "substantial" increase in capacity in the context of a refinery that processes approximately 250 million barrels per day of crude oil.

In addition to the reconstruction projects, the refinery is installing two new pieces of equipment as part of TURBO: a High Pressure Separator and a Furnace Convection Section. Because these units are part of RLOP, they are exempt as part of the "reconstruction" of the existing facility. Arguably, the above exemption applies to the entire plant, the "commercial structure," and the individual construction projects within the TURBO project do not have to be examined individually.

However, notwithstanding the exemption discussed above, the new equipment is also exempt from CEQA under CEQA Guidelines § 15303, New Construction or Conversion of Small Structures. This exemption applies to "construction and location of limited numbers of new, small facilities" such as "[a]n accessory steam sterilization unit for the treatment of medical waste at. ..a medical waste generator." The units are relatively small, "accessory" structures to the existing RLOP. The High Pressure Separator is an accessory structure to the Heavy Neutral Cracker Plants. These plants occupy approximately 68,000 square feet while the Separator will occupy only 168 square feet (six feet in diameter by 28 feet in length). The Furnace Convection Section is an accessory structure to an RLOP furnace. While the furnace is approximately 242 square

feet, the supporting Convection Section will occupy only 98 square feet (seven feet wide by 14 feet long and 14 feet high).

The two new units are small structures in comparison to other RLOP units and as compared to the refinery. The RLOP occupies approximately 325,000 ft² at the refinery. The new RLOP equipment will occupy only 266 ft², less than 1% of the RLOP process unit area. These two new units are "small structures" and thus fit squarely within the categorical exemption.

The CEQA categorical exemptions apply to the TURBO project notwithstanding the exceptions to the exemptions set forth in Guidelines § 15300.2. This project is a relatively small refinery project, of the type that is routinely permitted by the District. There are no unusual circumstances to this project in that it is an application for minor modification of mostly preexisting refinery equipment and the project is completely within the RLOP area which is in the interior of the refinery.

The District finds these assertions and arguments to be credible. Thus, the District concludes that the permit application is exempt from CEQA because it is ministerial, it is categorically exempt from CEQA, and the project qualifies for the "Common Sense Exemption" of Subsection (b)(3) of the State CEQA Guidelines.

The District has considered whether the Turbo project is part of a larger project for CEQA purposes, and has concluded that it is not. Although other Chevron refinery permitting applications have been acted on or are currently pending before the District, the Turbo project is not necessarily linked to any of these. Specifically, completion of the Turbo project is not necessary in order for Chevron to proceed with other permit applications, nor is the Turbo project a foreseeable consequence of other permit applications. In reaching this conclusion, the District is relying in part on a June 28, 2005, letter from Chevron responding to written questions from the District.

On a general level, the stated purpose of the Turbo project is to respond to changing customer demands. This purpose does not imply any necessary relationship to other projects, in the sense of being prerequisite to other projects or a foreseeable consequence of them.

To address a more specific issue, Chevron has applied to increase its permit limit for annual throughput at its Hydrogen Plant. As stated in the June 28 letter that the sources affected by the Turbo application are not significant users of hydrogen. Hydrogen is used in a number of refinery processes, and there is considerable flexibility to increase consumption at one or more process without having to increase overall hydrogen-producing capacity simply by managing these processes. In order to find that the Turbo project and the requested annual hydrogen plant increase are part of one project for CEQA purposes, the District would have to conclude that operation of the Turbo project necessarily requires an increase in annual hydrogen production. Based on available information, this finding can not be made.

Recommendation

Recommend that the Authority to Construct be waived and that the following equipment be granted a Permit to Operate:

S-4338	HNC Vacuum Furnace F-1550
S-4340	Light Neutral Hydrocracker (LNC)
S-4341	Light Neutral Hydrofinisher (LNHF)
S-4342	Heavy Neutral Hydrocracker (HNC)
S-4343	Heavy Neutral Hydrofinisher (HNHF)
S-4346	GRU
S-4349	HNHF F-1650 Furnace, 16.5 MM Btu/h max capacity

Conditions

See condition #469. (attached)

The changes made to condition #469 include the process unit maximum design in part 7, the maximum firing for the combined sources and S-4349 in part 8e, and the NOx concentration in 8E2.

**EVALUATION REPORT
Chevron Products Co., Plant #10
Application Number 11503**

Background

Chevron Products Co. (Chevron) is proposing to permit four ink jet printing operations as one source S-7601 Ink Jet Printing Operation at its refinery located in Richmond. The Ink Jet Printing Operation is associated with the lubricant plant. The operation prints labels on quart cases, bottles, one gallon jugs, and a pail line. This operation did not meet the definition of either a graphic arts operation or graphic arts line. The definition of a graphic arts line requires that it also be a graphic arts operation. This printing operation coats only cardboard and plastic items. However, after discussions with both the Rule Development Manager and the Permit Evaluation Manager it was determined that this operation is subject to Regulation 8-4.

Emission Calculations

S-7601 Ink Jet Printing Operation consisting of four Ink Jet Printers

Ink: 30 gal/y(7.436 #/gal)(0.95) = 211.95 #/y, 0.106 tpy

Wash: 36 gal/y(6.71 #/gal) = 241.56 #/y, 0.121 tpy

Total POC emissions 453.51 #/y, 0.227 tpy

Plant Cumulative Increase

POC: 0.227 tpy – 0.261 tpy = 0.0 tpy

Toxic Risk Screening Analysis

<u>TOXIC</u>	<u>EMISSION RATE</u>	<u>TRIGGER LEVEL</u>
Methyl ethyl ketone		1.5E5 #/y
Methanol		1.2E5 #/y
Ethanol		8.7E5 #/y
Butanone		N/A
Tetraethylammonium Bromide		N/A

A toxic risk analysis is not required for this application since the materials used were either not listed in the district's toxic screening list or the trigger level was higher than the application emissions increase.

Statement of Compliance

This Ink Jet Printing Operation is not subject to 8-20 since it does not meet the definitions of either a graphic arts operation (section 8-20-204) or graphic arts line (section 8-20-217).

As mentioned above, after discussions with the Managers of both Permit Evaluation and Rule Development, the Permit Evaluation Manager determined that this operation will

satisfy exemption 8-31-121 for stencil coatings. It was determined that this is the best fit currently for ink jet operations on plastic products. Since this exemption and rule description do not refer to any other district rule, no standards or record keeping are required for plastic products per Regulation 8-31. This is also the determination of the Permit Evaluation Manager that if an exemption and/or rule description does not refer to another potentially applicable rule then the source is only subject to the exemption.

This application is exempt from Regulation 8-12 per section 110.1, which exempts paper coating operations that emit less than 14.3 pounds per day. Rule 8-12 states that operations exempt from Reg. 8-12 are subject to Reg. 8-4. Regulation 8-12-110.5 also exempts printing operations referring to Regulation 8-20. The paper coating part of this operation will comply with Regulation 8-4-302, which requires that emissions not exceed 5 tons during any calendar year. Regulation 8-4-312 requires that closed containers be used for storage and disposal of paper or clothes used in solvent preparation and cleanup, spray equipment cleanup solvent shall not exceed 0.42 lbs/gal unless it can be collected in a closed container, or a spray gun washer is used. This section also requires that closed containers be used for coating and solvent when not in use. Regulation 8-4-313 requires that surface preparation solvent not exceed 0.42 lbs/gal unless emissions are controlled with an overall abatement efficiency of at least 85% by weight.

This application will not trigger BACT since the increase in emissions is less than 10 pounds per highest day.

This application will require 0.261 tons per year of POC offsets since the facility emissions are greater than 35 tons per year.

This application is not subject to CEQA since the evaluation is a ministerial action conducted using Permit Handbook Chapter's 5.9 and 5.10.

A toxic risk analysis is not required for this application as stated above.

NSPS, NESHAPS, and PSD do not apply.

Recommendation

Recommend that the following equipment be granted a Permit to Operate:

S-7601 Ink Jet Printing Operation consisting of four Ink Jet Printers

Conditions

1. The owner/operator of S-7601 shall not exceed 30 gallons of ink usage in any consecutive 12 month period. (cum inc)
2. The owner/operator of S-7601 shall not exceed 36 gallons of cleanup solvent in any consecutive 12 month period. (cum inc)
3. The owner/operator of S-7601 shall maintain a district approved monthly log of all ink and solvent usage at S-7601. This log shall be kept on site for at least five years from the date of entry and be made available to district staff upon request. (8-4-501)

by _____ date _____
Gregory Solomon
Senior Air Quality Engineer

EVALUATION REPORT
Chevron Products Co., Plant #10
Application Number 12693

Background

Chevron Products Co. (Chevron) is proposing a change in conditions for External Floating Roof Storage Tanks S-3202, S-3213 and S-3214 at its refinery located in Richmond. Permit condition #'s 12104, 12139, and 13364 all refer to liquid mounted primary seals but these tanks use mechanical shoe primary seals that extend below the liquid surface. The original Tanks calculations for these tanks were performed assuming the use of mechanical shoe primary seals therefore there will not be an increase in emissions from the original emission estimates for these tanks.

This will be considered an Administrative Amendment for purposes of Title V since the changes are merely clarifying the tank seal descriptions. Only section VI of the Title V permit will be corrected to reflect the accurate descriptions of these tank seals.

Emission Calculations

No emissions calculation is required for this application since it is merely clarifying the description of the current equipment.

Plant Cumulative Increase

There will be no increase in the Plant Cumulative as a result of this application.

Toxic Risk Screening Analysis

A toxic risk analysis was not required for this application since there will be no increase in emissions as a result of this application.

Statement of Compliance

This application will comply with Regulation 8-5, sections 304.2, 311.1, 321 and 322, which require that external floating roof storage tanks larger than 19,813 gallons be equipped with double seals that are maintained.

This application will not trigger BACT since there will be no increase in emissions as a result of this application. However, these tanks will continue to comply with BACT level 2.

This application will not require POC offsets since there will be no increase in emissions as a result of this application.

This application is considered ministerial for purposes of CEQA since this source category is covered in Permit Handbook Chapter 4.1.

A toxic risk analysis was not required for this application since there will be no increase in emissions as a result of this application.

NSPS subpart Kb requires that the external roof be equipped with both primary and secondary seals.

NESHAPS and PSD do not apply to this application.

Recommendation

Recommend that the following equipment be granted a Change of Conditions:

S-3202	External Floating Roof Storage Tank, 101.6 kbbls capacity
S-3213	External Floating Roof Storage Tank, 350 kbbls capacity
S-3214	External Floating Roof Storage Tank, 129 kbbls capacity

Conditions

See condition #'s 12104, 12139, and 13364. (attached)

by _____ date _____
Gregory Solomon
Senior Air Quality Engineer

ENGINEERING EVALUATION
Chevron USA, Inc. Plant No. 10
Application No. 12975

BACKGROUND

Chevron USA, Inc. has applied for a CARB-certified diesel engine (S-7013), which will be used to power a standby generator at their 841 Chevron Way, Richmond, CA refinery.

S-7013 SRU Stationary Standby Generator Set: Diesel Engine; Make: Cummins; Model: QSX15-G9; Rated Horsepower: 750 HP

EMISSIONS

Annual Average Emissions:

- Basis:
- 750 hp output rating
 - 50 hr/yr operation for testing and maintenance (ATCM limit)
 - NO_x, VOC, CO and PM₁₀ emission factors from CARB certification data:

NO_x: 4.463 g/hp-hr
VOC: 0.235 g/hp-hr (assume all POC compounds)
CO: 0.447 g/hp-hr
PM₁₀: 0.075 g/hp-hr

SO₂ emission factor is from EPA AP-42, Table 3.4-1 ("Large Stationary Diesel and Dual-Fuel Engines"), which is based on full conversion of fuel sulfur to SO₂ and which will therefore be considered applicable to any diesel engine (sulfur content will be assumed to be the California limit of 0.05 wt% sulfur):

SO₂: 8.09E-3(0.05) lb/hp-hr (454 g/lb) = 0.184 g/hp-hr

NO_x: (50 hr/yr)(750 hp)(4.463 g/hp-hr)(lb/454 g)/(365 day/yr) = 368.65 lb/yr = 0.185 TPY

POC: (50 hr/yr)(750 hp)(0.235 g/hp-hr)(lb/454 g)/(365 day/yr) = 19.40 lb/yr = 0.010 TPY

CO: (50 hr/yr)(750 hp)(0.447 g/hp-hr)(lb/454 g)/(365 day/yr) = 36.96 lb/yr = 0.018 TPY

PM₁₀: (50 hr/yr)(750 hp)(0.075 g/hp-hr)(lb/454 g)/(365 day/yr) = 6.16 lb/yr = 0.003 TPY

SO₂: (50 hr/yr)(750 hp)(0.184 g/hp-hr)(lb/454 g)/(365 day/yr) = 15.20 lb/yr = 0.008 TPY

Daily Emissions:

Daily emissions are calculated to establish whether a source triggers the requirement for BACT (10 lb/highest day total source emissions for any class of pollutants). 24-hr/day operation will be assumed since no daily limits are imposed on intermittent and unexpected operations.

NO_x: (24 hr/day)(750 hp)(4.463 g/hp-hr)(lb/454 g) = 176.95 lb/day

POC: (24 hr/day)(750 hp)(0.235 g/hp-hr)(lb/454 g) = 9.31 lb/day

CO: (24 hr/day)(750 hp)(0.447 g/hp-hr)(lb/454 g) = 17.74 lb/day

PM₁₀: (24 hr/day)(750 hp)(0.075 g/hp-hr)(lb/454 g) = 2.96 lb/day

SO₂: (24 hr/day)(750 hp)(0.184 g/hp-hr)(lb/454 g) = 7.30 lb/day

PLANT CUMULATIVE INCREASE

	current	proposed	new total
	(ton/yr)	(ton/yr)	(ton/yr)
POC:	0	0.010	0.010
NOx:	0	0.185	0.185
SO2:	0	0.008	0.008
CO:	0	0.018	0.018
NPOC:	0	0	0
PM10:	0	0.003	0.003

TOXIC RISK SCREENING ANALYSIS

The cancer risk is calculated based on the emission rate of diesel exhaust particulate matter. Diesel exhaust particulate matter is used as a surrogate for all toxic contaminants found in diesel exhaust. Because the proposed emissions exceed the risk screening trigger level for diesel exhaust particulate matter in Table 2-5-1, a risk screening was performed.

Per the attached October 6, 2005 memo from Daphne Chong, District Toxicologist, results from the health risk screening analysis indicate that the maximum cancer risk is estimated at 0.3 in a million if the engine were to run for 50 hours/year. In accordance with the District’s Risk Management Policy, this risk level is considered acceptable.

BACT

BACT is triggered for NOx and CO as maximum daily emissions exceed 10 lb/day, as calculated on page 1 (Daily Emissions). BACT for this source is presented in the current BAAQMD BACT/TBACT Workbook for this source category as shown below:

Source:	<i>IC Engine - Compression Ignition</i>	Revision:	<i>5</i>
		Document #:	<i>96.1.2</i>
Class:	<i>> or = 175 horsepower output rating</i>	Date:	<i>01/11/02</i>

Determination

POLLUTANT	BACT 1. Technologically Feasible/ Cost Effective 2. Achieved in Practice 3. TBACT	TYPICAL TECHNOLOGY
POC	1. 0.30 g/bhp-hr [62 ppmvd @ 15% O ₂] ^{a,b} 2. 1.5 g/bhp-hr [309 ppmvd @ 15% O ₂] ^{b,c}	1. <i>Catalytic Oxidation and CARB or EPA (or equivalent) low-total hydrocarbon emitting certified engine</i> ^{a,b} 2. <i>CARB or EPA (or equivalent) low-total hydrocarbon emitting certified engine</i> ^{b,c}
NOx	1. 1.5 g/bhp-hr [107 ppmvd @ 15% O ₂] ^{a,b} 2. 6.9 g/bhp-hr [490 ppmvd @ 15% O ₂] ^{a,b,c} 3. 6.9 g/bhp-hr [490 ppmvd @ 15% O ₂] ₂	1. <i>Selective Catalytic Reduction (SCR) + Timing Retard + Turbocharger w/ Intercooler</i> ^{a,b} 2. <i>Timing Retard ≤ 4° + Turbocharger w/ Intercooler</i> ^{a,b,c} 3. <i>Timing Retard ≤ 4° + Turbocharger w/ Intercooler</i>

SO ₂	1. n/d 2. fuel oil < 0.05% sulfur ^{a,b}	1. n/d 2. Fuel Selection ^{a,b}
CO	1. n/s 2. 2.75 g/bhp-hr [319 ppmvd @ 15% O ₂] ^{b,c}	1. Catalytic Oxidation ^b 2. CARB or EPA (or equivalent) low-CO emitting certified engine ^{b,c}
PM ₁₀	1. n/d 2. If practical, gas-fueled engine or electric motor. If not, "California Diesel Fuel" (fuel oil w/ < 0.05% by weight sulfur and < 20% by volume aromatic hydrocarbons) ^b 3. 0.1 grams/bhp-hr	1. Catalyst Guard Bed ^{a,b} 2. Fuel Selection ^{b,d} 3. CARB or EPA (or equivalent) low-particulate matter emitting certified engine, or particulate filter
NPOC	1. n/a 2. n/a	1. n/a 2. n/a

References

<p>a. CARB/CAPCOA Clearinghouse</p> <p>b. BAAQMD NOTE: IC Engine BACT and TBACT is a low emitting, spark-ignited, gas-fueled engine with lean burn combustion or rich burn with non-selective catalytic reduction, or electric motor. A diesel engine will be permitted only if a gas-fueled engine, or electric motor, is not practical (e.g., a remote location without natural gas availability or electric power, or only a diesel engine will meet the portability and/or power/torque/rpm requirements of the application under review, or the engine is used exclusively for emergency use during involuntary loss of power).</p> <p>c. Timing retard, etc. controls alone may be acceptable only in very limited situations for temporary sources.</p>
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S-7013 satisfies the current BACT 2 standards of 6.9 g/hp-hr for NO_x and 2.75 g/hp-hr for CO. The more restrictive BACT 1 standard is not applicable to this engine because it will be limited to operation as an emergency standby engine.

Since CARB certification data was used to establish the NO_x and CO emission factors, the BACT 2 emission limits have not been incorporated into the permit conditions and are assumed to be complied with through the design standards demonstrated by the CARB certification testing.

OFFSETS

Offsets are required for POC, NO_x, and PM₁₀. Per the instructions received from Chevron, Certificate of Deposit 904 will be used to provide the offsets needed for this application.

POC = 0.01 TPY x 1.00 = 0.01 TPY
 NO_x = 0.185 TPY x 1.15 = 0.213 TPY
 PM₁₀ = 0.003 TPY x 1.15 = 0.003 TPY

STATEMENT OF COMPLIANCE

S-7013 will be operated as an emergency standby engine and therefore is not subject to the emission rate limits in Regulation 9, Rule 8 ("NO_x and CO from Stationary Internal Combustion Engines"). S-7013 is subject to the monitoring and record keeping requirements of Regulation 9-8-530 and the SO₂ limitations of 9-1-301 (ground-level concentration) and 9-1-304 (0.5% by weight in fuel). Regulation 9-8-530 requirements are incorporated into the proposed permit conditions. Compliance with Regulation 9-1 is very likely since diesel fuel with a 0.05% by

weight sulfur is mandated for use in California. Like all combustion sources, S-7013 is subject to Regulation 6 ("Particulate and Visible Emissions"). This engine is not expected to produce visible emissions or fallout in violation of this regulation and will be assumed to be in compliance with Regulation 6 pending a regular inspection.

This application is considered to be ministerial under the District's Regulation 2-1-311 and therefore is not subject to CEQA review. The engineering review for this project requires only the application of standard permit conditions and standard emission factors in accordance with Permit Handbook Chapter 2.3.

This facility is over 1,000 feet from the nearest school and therefore is not subject to the public notification requirements of Regulation 2-1-412.

PSD, NSPS and NESHAPS are not triggered.

PERMIT CONDITIONS

1. The owner or operator shall operate each emergency standby engine only for the following purposes: to mitigate emergency conditions, for emission testing to demonstrate compliance with a District, state or Federal emission limit, or for reliability-related activities (maintenance and other testing, but excluding emission testing). Operating while mitigating emergency conditions or while emission testing to show compliance with District, state or Federal emission limits does not have an annual hourly limit. Operating for reliability-related activities is limited to 50 hours per year per emergency standby engine.

(Basis: "Stationary Diesel Engine ATCM" section 93115, title 17, CA Code of Regulations, subsection (e)(2)(A)(3))

2. The owner/operator shall operate each emergency standby engine only when a non-resettable totalizing meter (with a minimum display capability of 9,999 hours) that measures the hours of operation for the engine is installed and properly maintained.

(Basis: "Stationary Diesel Engine ATCM" section 93115, title 17, CA Code of Regulations, subsection (e)(4)(G)(1))

3. Records: The owner/operator shall maintain the following monthly records in a District-approved log for at least 36 months from the date of entry. For Title V facilities, the following monthly records shall be maintained for 5 years. Log entries shall be retained on-site, either at a central location or at the engine's locations, and made immediately available to the District staff upon request.
 - a. Hours of operation for reliability-related activities (maintenance and testing).
 - b. Hours of operation for emission testing to show compliance with emission limits.
 - c. Hours of operation (emergency).
 - d. For each emergency, the nature of the emergency condition.
 - e. Fuel usage for engine(s).

(Basis: "Stationary Diesel Engine ATCM" section 93115, title 17, CA Code of Regulations, Regulation 1-441)

4. The owner or operator shall not operate each stationary emergency standby diesel-fueled engine for non-emergency use, including maintenance and testing, during the following periods:
 - a. Whenever there is a school sponsored activity (if the engine is located on school grounds)
 - b. Between 7:30 a.m. and 3:30 p.m. on days when school is in session (if the engine is located within 500 feet of school grounds).

(Basis: "Stationary Diesel Engine ATCM" section 93115, title 17, CA Code of Regulations, subsection (e)(2)(A)(1)

RECOMMENDATION

Waive the Authority to Construct and Issue the Permit to Operate to Chevron USA for for:

S-7013 SRU Stationary Standby Generator Set: Diesel Engine; Make: Cummins; Model: QSX15-G9; Rated Horsepower: 750 HP

By: _____
Barry G. Young
Supervising Air Quality Engineer

Date: _____

EVALUATION REPORT
Chevron Products Co., Plant #10
Application Number 13023

Background

Chevron Products Co. (Chevron) is proposing to modify its existing S-6051 MTBE Cooling Tower at its refinery located in Richmond. Chevron is requesting that the source name change to Alky Cooling Tower since the MTBE Plant no longer exists and this cooling tower will now be associated with the Alkylation Plant. The capacity of S-6051 will be increasing from 33.8 million gallons per day to 43.8 million gallons per day. S-6051 Cooling Tower currently has four cells and serves four process areas S-4291 Alkylation Plant, S-4354 Butamer Plant, S-4355 Deisobutanizer Plant, and S-4356 Tame Plant. S-6051 will be increased to six cells in order to allow these four sources it serves to achieve the permitted capacities. Two existing cells and the two new cells will be Marley 400s, which are induced-draft, counterflow cooling tower cells with high efficiency drift eliminators capable of achieving at least a 0.002% drift rate.

All of the sources served by S-6051 have throughput limits that came from NSR applications (mainly the Clean Fuels Project) and are not considered to be modified per 2-1-234.

Title V

Table II will need to be changed to show that S-6051 is to be called the Alky Cooling Tower and to show the increased capacity and throughput limits. Sections IV, VI, and VII will be changed to show the change in throughput and emission limits.

Emission Calculations

S-6051 has been fully offset at its current level of throughput therefore only the increase in emissions from the increase in throughput will be required to be offset. The throughput will be increasing from 33,840,000 gallons per day to 43,200,000 gallons per day or an increase of 9,360,000 gallons per day.

POC emission estimates were performed using an emission factor of 0.7 #/MMgal from AP42 Chapter 5, Table 5.1-2.

$$\text{POC: } 9.36 \text{ MMgal/day}(0.7 \text{ \#/MMgal}) = 6.55 \text{ \#/day}$$
$$6.55\text{\#/day}(365 \text{ day/y})(t/2000 \text{ \#}) = 1.20 \text{ tpy}$$

PM10 emission estimates were performed using the total dissolved solids concentration (TDS) and the drift loss. However, the new drift loss is expected to be less than 0.002% as opposed to the original drift loss was 0.005%. Chevron conservatively assumes that the new unit will achieve 0.0035% drift loss.

S-6051 was originally assumed to emit 4.84 tpy PM10. This was determined by adding the amount of PM10 emissions charged from application #'s 7735, 14701, and 16822.

$$\text{PM10: } 43.2 \text{ MMgal/day}(2000 \text{ ppm})(0.000035)(8.34 \text{ \#/gal})(t/2000 \text{ \#})(365 \text{ day/y})$$
$$= 4.60 \text{ tpy}$$

Therefore, there will be a decrease in PM10 emissions as a result of this application.

Toxic Emissions Estimate

S-6051 will have bromine, chlorine, and chloroform emissions. Chevron estimates that the maximum concentration of water treatment chemicals is 0.5 ppmv (0.005 wt %). Of the treatment chemicals, the bromine compounds are about 60% by weight and chlorine is about 27% by weight.

Bromine: $15,768 \text{ MMgal/y}(0.5 \text{ ppmv})(0.000035)(8.34 \text{ \#/gal})(0.60) = 1.38 \text{ \#/y}$

Chlorine: $15,768 \text{ MMgal/y}(0.5 \text{ ppmv})(0.000035)(8.34 \text{ \#/gal})(0.27) = 0.62 \text{ \#/y}$
 $7.1\text{E-}5 \text{ \#/h max}$

The chloroform emission estimate is based on a 1990 ARB publication, "Proposed Identification of Chloroform as a Toxic Air Contaminant, Part A, Exposure Assessment." The emission factor is 0.0034 pounds of chloroform per pound of chlorine (Cl₂) used to chlorinate the water. The solution contains 0.3 # Cl₂/gal. Chevron assumes 3 gallons per hour bleach usage. A permit condition limiting bleach usage will be added to keep the chloroform emissions below the toxic trigger level.

Chloroform:

$3 \text{ gal/h}(0.3 \text{ \# Cl}_2\text{/gal}) = 0.9 \text{ \# Cl}_2\text{/h}$

$0.9 \text{ \#Cl}_2\text{/h}(0.0034) = 0.00306 \text{ \#/h}, 26.81 \text{ \#/y chloroform}$

The toxic risk screening trigger level for chloroform is 34 #/y. This corresponds to an annual usage of 32,359 gallons of bleach per year.

Plant Cumulative Increase

POC: $1.2 \text{ tpy}(1.15) - 1.38 \text{ tpy} = 0.0 \text{ tpy}$

Toxic Risk Screening Analysis

<u>Toxic</u>	<u>Emission Rate</u>	<u>Trigger Level(#/h,#/y)</u>
Bromine	1.38 #/y	N/A, 6.6E1 #/y
Chlorine	7.1E-5 #/h, 0.62 #/y	4.6E-1 #/h, 7.7E0 #/y
Chloroform	3.1E-3 #/h, 26.81 #/y	3.3E-1 #/h, 3.4E1 #/y

A toxic risk analysis is not required for this application since the toxic emissions are not expected to exceed the respective acute one-hour maximum and chronic trigger levels.

Statement of Compliance

The S-6051 will continue to comply with Regulation 6-301, 305, 310, and 311, which require that particulate emissions not exceed a Ringelmann 1.0, visible emissions not cause a public nuisance, that particulate emissions not exceed 0.15 gr/dscf, and that particulate emissions not exceed 40 pounds per hour.

The Cooling Tower is exempt from Regulation 8-2 per Section 8-2-114, which requires that best modern practices be used.

This application will trigger both BACT and offsets for precursor organic compounds (POC) since there will be an increase in POC emissions and the emissions are greater than 10 pounds per highest day. BACT for cooling towers has been achieved through monitoring and isolation of the leaking heat exchanger and repair time. The district has required a hydrocarbon analyzer as part of a BACT determination for Shell's clean fuels project and specified repair activities. San Joaquin Valley Unified Air Pollution Control District requires both a hydrocarbon detection device and a 15-day repair time for leaks in the heat exchangers. In a Texas BACT determination a facility was required to use only welded tube heat exchangers since welded tubes do not leak as often as bolted tubes. Chevron expressed concern since this cooling tower has approximately 50 heat exchangers associated with it. Also repair is easier and faster if the tubes are bolted. At this time, it does not seem appropriate to require welded tubes. Chevron will accept conditions requiring 15 day repair or removal for all but 4 critical heat exchangers which will have 30 days to be either removed or repaired.

This application will require 1.38 tpy of POC emissions offsets per Regulation 2-2-302.

CEQA Categorical Exemptions and CEQA "Common Sense Exemption":

Though the District concludes that this project is ministerial, it also concludes that, even if it were not ministerial, certain other exemptions from CEQA apply (see CEQA Guidelines § 15300.1). Section 2-1-312 of the District Rules and Regulations sets forth specific types of projects, which have been determined by the District to be categorically exempt from CEQA.

Per Section 2-1-312.11, in addition to ministerial projects, permit applications for a new or modified source or sources or for process changes, which will satisfy the "No Net Emission Increase" provisions of District Regulation 2, Rule 2 and for which there is no possibility that the project may have any significant environmental effect in connection with any environmental media or resources other than air quality, are exempt from the CEQA review. The reason for this exemption should be apparent on its face: if a facility is given legal permission to emit more air pollutants from certain points while at the same time being disallowed permission for an equivalent amount of the same type of emissions from other points at the facility, then there is deemed to be no net effect on the air environment, and therefore no possibility of a significant effect under CEQA, provided no-air impacts are also examined and deemed to be of no possible significant consequence.

Also, per the CEQA Guidelines in Title 14, California Code of Regulations, Chapter 3, Article 5, Section 15061(b)(3), a project is exempt from CEQA if the activity is covered by the general rule that CEQA applies only to projects, which have the potential for causing a significant effect on the environment. This is commonly known as the "Common Sense Exemption". Where it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment, the activity is not subject to CEQA. The "no net increase" exemption of 2-1-312.11 is essentially a specific, codified, instance of the Common Sense Exemption.

For this permit application, the District determined that the project will satisfy the "No Net Emission Increase" provisions of District Regulation 2, Rule 2.

Chevron has completed and submitted to the District CEQA Appendix H, Environmental Information Form, for the project.

The District has reviewed the CEQA Appendix H form. Chevron checked "yes" for the item regarding "Site on filled land or on slope of 10 percent or more." Chevron also checked "yes" for the use and disposal of potentially hazardous materials, however

Chevron asserts that this project will not increase the use or disposal of potentially hazardous materials. All other items on the form were checked "no." In the attachment to Appendix H, Chevron explained that construction will take place in a process plant area, which was constructed on filled land. No additional filling will be required for this project. Facilities will be designed and constructed to current earthquake and soil loading standards. In the TURBO application #10798, Chevron asserted that the entire site of the existing plant is on hydraulic and engineered fill from the 1960's and earlier. The District accepts this assertion for this application.

Chevron has also submitted additional information in order for the District to determine the project's possible significant effects on surface and ground water and diesel-fueled truck traffic air impacts. Based on the information contained in the Appendix H form submitted and Chevron's May 11, 2006 letter regarding possible water impacts and the number of diesel-fueled truck trips associated with the project, the District does not expect either to be significant.

Based on all of the information before the District and the District's review of the information submitted, the District has determined that there is no possibility that the project may have any significant environmental effect.

Per Section 2-1-312.7, permit applications for the replacement or reconstruction of existing sources or facilities, where the new source or facility will be located on the same site as the source or facility replaced and will have substantially the same purpose and capacity as the source or facility replaced, are exempt from the CEQA review.

Thus, the District concludes that the permit application is exempt from CEQA because it is ministerial, it is categorically exempt from CEQA, and the project qualifies for the "Common Sense Exemption" of Subsection (b)(3) of the State CEQA Guidelines.

A toxic risk analysis is not required for this application as stated above.

NESHAPS, NSPS and PSD do not apply.

Recommendation

Recommend that the following equipment be granted an Authority to Construct:

S-6051 Alky Cooling Tower serving S-4291, S-4354, S-4355, and S-4356

Conditions

See condition #14596. (attached)

Chevron USA Products Company; plant 10

Conditions for S-6051, Alky CWT

1. POC emissions from S-6051 shall not exceed 30.2 lb/day, averaged over any consecutive 12-month period. (cumulative increase/offsets)
2. Total dissolved solids in S-6051 basin shall not exceed 2000 parts per million (wt), averaged over any consecutive 30 day period. (cumulative increase)
3. The owner/operator shall install a District-approved continuous hydrocarbon analyzer and recorder to determine the hydrocarbon concentration in the cooling water in Alky Cooling Water Tower (S-6051). The purpose of this analyzer is to serve as an early warning/detection device to indicate a possible heat exchanger leak of process fluid into the cooling water system and to determine compliance

with part 1. The analyzer will provide baseline data, which will be statistically evaluated to determine an Action Level. Any hydrocarbon reading above the Action Level will trigger an alarm. The implementation of this permit condition shall be subject to the approval of the district upon startup of the cooling tower. (BACT)

4. Once the alarm is triggered, the owner/operator shall also measure, with a district-approved LEL monitor, the concentration of hydrocarbons in the S-6051 Cooling Tower vapor space as a percent of the lower explosive limit (LEL) once each calendar day while the hydrocarbon reading remains above the Action level. (BACT)
5. The owner/operator of S-6051 shall either repair any leaking heat exchanger, remove the leaking heat exchanger, or otherwise remove the source of the leak within 15 days of detection of the leak as identified by the alarm set at the Action level. If the owner/operator identifies the source of a leak to be E-1404, E-1421, or E-1220 located in the Alkylation Unit (S-4291), or E-400 located in the Yard Deisobutanizer (S-4355), the owner/operator of S-6051 shall remove the leaking heat exchanger from service, or otherwise eliminate the source of the leak, within 30 calendar days or less from the alarm trigger date. If the concentration of hydrocarbons in the cooling tower vapor space exceeds 10 percent of LEL, the owner/operator shall remove the leaking heat exchanger from service, or otherwise eliminate the source of the leak as soon as practicable, but within 15 days or less of exceeding the 10 percent of LEL limit. (BACT)
6. In order to demonstrate compliance with part 2, the owner/operator of S-6051 shall conduct district approved monthly tests on the cooling water for TDS. The owner/operator of S-6051 shall maintain a district approved monthly log of all test data. This log shall be kept on site for at least 5 years from the date of entry and be made available to district staff upon request. (Record keeping)
7. In order to demonstrate compliance with part 1, the owner/operator of S-6051 shall use volatile organic concentration data from the continuous hydrocarbon analyzer from part 3 and the flowrate data from district-approved flowmeters installed at district-approved sample port locations. The owner/operator of S-6051 shall maintain a district-approved daily log of all hydrocarbon analyzer concentration data, flowrate data, and daily emissions estimates. This log shall be kept on site for at least 5 years from the date of entry and be made available to district staff upon request. (1-523, BACT, Record keeping)
8. The owner/operator of S-6051 shall maintain a district approved daily log of all hydrocarbon analyzer data, flowmeter data, daily emissions data, date and time of all alarms, a summary of the baseline and action levels data, a description of findings and actions taken for each incident above the Action level, and all LEL measurements. This log shall be kept on site for at least 5 years from the date of entry and be made available to district staff upon request. (Record keeping)

by _____ date _____
Gregory Solomon
Senior Air Quality Engineer

EVALUATION REPORT
Chevron Products Co., Plant #10
Application Number 13610/13012

Background

Chevron Products Co. (Chevron) is proposing to change the conditions for its FCCU, SRU's and several Furnaces and Boilers as part of its EPA/DOJ Consent Decree at its refinery located in Richmond. These changes in conditions are to incorporate NSPS Subparts A and J into the Title V permit and the related permit conditions. The FCCU (S-4285) will accept a new PM emissions limit of 1 pound per 1000 pound of coke burn-off, an Opacity limit of 30% opacity (6 minute average basis), and both an hourly and annual CO concentration limits. The SRU's (S-4227 – 4229) will accept a permit condition limiting the SO₂ emissions from the Tail Gas Units (A-20 – 22) to not exceed 250 ppmv corrected to 0% O₂ on a 12 hour basis.

The Chevron Title V permit sections IV, VI, and VII will need to be changed to include the modifications to condition text and include NSPS Subparts A and J to the FCCU, SRUs and several furnaces and boilers.

Emission Calculations

No emission increases are expected as a result of this application.

Plant Cumulative Increase

There will be no increase in the Plant Cumulative Increase as a result of this application.

Toxic Risk Screening Analysis

A toxic risk analysis is not required for this application since the emissions are not expected to increase as a result of this application.

Statement of Compliance

The SRU's (S-4227 – 4229) and FCCU (S-4285) and several furnaces and boilers will now be subject to NSPS Subparts A and J.

These sources will continue to comply with all applicable requirements specified in the most recent facility Title V permit.

This application will not trigger BACT, offsets, or PSD since there will be no increase in emissions as a result of this application.

This application is exempt from CEQA since the project has no potential for causing a significant adverse environmental impact and the application is categorically exempt from CEQA under Regulation 2-1-312.5, which exempts permit applications submitted pursuant to a judicial enforcement order (see References – Part III). In making the determination that this application is categorically exempt: 1) a review of the CEQA-Related Information submitted by the applicant (under Regulation 2-1-426.1), has been conducted indicating that there is no potential for a significant adverse environmental impact from the project; 2) a formal health risk assessment was not required; and 3) no unusual circumstances or cumulative impacts from successive projects of the same type in the same place over time were determined to result in significant adverse environmental impacts.

A toxic risk analysis is not required for this application as stated above.

Recommendation

Recommend that the following equipment be granted a change in conditions:

S-4285	FCCU
S-4227	SRU abated by A-20 Tail Gas Unit
S-4228	SRU abated by A-21 Tail Gas Unit
S-4229	SRU abated by A-22 Tail Gas Unit
S-4032	F-101, FCC GHT #3 Cat Furnace
S-4033	F-102, Penhex Isom #3 Cat Furnace
S-4039	F-3560, #4 Cat Furnace
S-4040	F-3570, #4 Cat Furnace
S-4041	F-3580, #4 Cat Furnace
S-4043	F-560, #5 Cat Furnace
S-4044	F-570, #5 Cat Furnace
S-4045	F-580, #5 Cat Furnace
S-4046	F-1 HO Heater-Asphalt Plant
S-4060	F-210A & B, Furnace JHT MDH, LSFO-W
S-4061	F-410, NHT Furnace
S-4069	F1670, Aromatic Saturator, LSFO-E
S-4072	F-1160, 4 Crude, LSFO-E
S-4129	800 lb Steam Boiler No.1
S-4131	800 lb Steam Boiler No.3
S-4132	800 lb Steam Boiler No.4
S-4133	800 lb Steam Boiler No.5
S-4135	800 lb Steam Boiler No.7
S-4153	F-110, Asphalt Solution Heater, SDA, Isomax
S-4154	F-120, Asphalt Solution Heater, SDA, Isomax
S-4156	F-320, Naphtha Vaporizer, H2 Plant, Isomax
S-4157	F-330, Naphtha Vaporizer, H2 Plant, Isomax
S-4158	F-340, Natural Gas Heater, H2 Plant, Isomax
S-4162	F-520, TKN Feed Furnace, Isomax
S-4163	F-530, TKN Feed Furnace, Isomax
S-4164	F-630, Isocracker Feed Furnace, Isomax
S-4165	F-620, Isocracker Feed Furnace, Isomax
S-4166	F-610, Isocracker Feed Furnace, Isomax
S-4167	F-710, TKC Fractionator, Isomax
S-4330	F-1610, HNHF Reactor RLOP 16 Plant
S-4331	F-1310, LNHF Reactor RLOP
S-4333	F-1750, TKC Vacuum Furnace
S-4335	F-1250, Furnace LNC Vacuum RLOP 12 Plant
S-4336	F-1410, HNC Reactor RLOP
S-4337	F-1500, HNC Atmospheric RLOP
S-4339	F-1110, LNC Reactor RLOP
S-4349	F-1650, Furnace HNC Distillation Section RLOP (BO 2000)
S-4351	Heat Recovery Steam Generator for Cogen Gas Turbine
S-4353	Heat Recovery Steam Generator for Cogen Gas Turbine

Conditions

See condition #'s 11066, 19063, and 22923. (attached)

by _____ date _____
Gregory Solomon
Senior Air Quality Engineer

**ENGINEERING EVALUATION
CHEVRON USA, INC.; PLANT 10
APPLICATION NUMBER 14096**

BACKGROUND

Chevron has applied for a Permit to Operate for the following existing equipment, which was previously exempt from permits:

S-4940 Tank D-4940, Chemical Additives Tank, approximately 1450 gallon capacity

Chevron currently injects the NALCO chemical TRI-ACT 1803 from tank D-4940 into its steam system in order to control the pH of the condensate system. The vapor pressure of this additive is 0.39 psia at 100F. It contains none of the toxic chemicals listed in Rule 2-5. The tank is a plastic, prefabricated unit approximately 1450 gallon capacity. The unit was exempt from permitting since the chemical's vapor pressure is less than 0.5 psia.

Chevron intends to switch to NALCO's TRI-ACT 1800, vapor pressure 0.73 psia. This changeover triggers permitting because Rule 2-1 was subsequently revised and the new chemical has a vapor pressure > 0.5 psia. The tank is already equipped with a submerged fill line as specified by Rule 8-5. It is vented to the atmosphere.

EMISSIONS

Emissions at proposed conditions were estimated using the EPA TANKS 4.0 program. The program was run based on 7027.23 gal/yr TRI-ACT 1800 throughput. For calculation and emission details see attached Tanks program reports. The reports indicate that the annual emissions of POC will increase 90.5 lb/yr = 0.045 TPY.

PLANT CUMULATIVE INCREASE

The plant cumulative increase is:

New, TPY	Offsets, TPY	Total, TPY
0.045	0.052	0.000

TOXIC RISK SCREENING ANALYSIS

None of the compounds listed in the MSDS for NALCO's TRI-ACT 1800 are listed on the list of toxic air contaminants in Rule 2-5. Therefore, a toxic risk screen is not required.

BACT/OFFSETS

The emissions from this source do not exceed 10 lb/highest day. Therefore, BACT is not triggered. Offsets are required at a 1.15 to 1.0 ratio since permitted emissions fall between 10 tons and 35 tons per year at this facility. The total offsets required will be 0.052 tons per year POC, which includes the 1.15 to 1.0 offset ratio. The offsets will be provided by Chevron's Richmond Refinery (Plant No. 10). The credits will be taken from Banking Certificate #777, which is already in the District's possession.

STATEMENT OF COMPLIANCE

S-4940 is subject to and complies with Rule 8-5. It is equipped with a submerged fill line, which complies with Rule 8-5-301 and is expected to meet 8-5-302 as well. Also, the monitoring and records requirements of subsection 8-5-501.1 will be met.

This facility is over 1,000 feet from the nearest school and therefore is not subject to the public notification requirements of Regulation 2-1-412.

This application is considered ministerial under the District's proposed CEQA guidelines (Regulation 2-1-311) and therefore is not subject to CEQA review. The engineering review for this project requires only the application of standard permit conditions and standard emission factors in accordance with Permit Handbook Chapter 4.1.

PSD, NSPS and NESHAPS are not triggered.

This permit application is a minor revision to the Title V Permit. The tank is a new source that falls in Cluster 02 of the tank tables, i.e., Tables IV.F.1.3 and VII.F.1.3. The appropriate Title V forms are included in Attachment 3 and will be turned into a separate Title V permit application to handle the revision.

PERMIT CONDITIONS**APPLICATION 14096; Chevron; PLANT 10
CONDITIONS FOR S-4940**

The owner/operator of S-4940 shall not exceed 7,028 gallons of NALCO TRI-ACT 1800 throughput during any twelve-month period. The owner operator may store materials other than NALCO TRI-ACT 1800 provided that the owner/operator demonstrates by submitting to the District a Data Form X, an MSDS, and a demonstration that there is no increase in emissions and the toxic emissions will not exceed the respective toxic trigger levels in Rule 2-5 (Basis: cumulative increase, Rule 2-5)

2. The owner/operator shall only store materials with a vapor pressure that shall not exceed 0.73 psia. (Basis: cumulative increase)
3. The owner/operator of S-4940 shall maintain records of storage tank throughput, type, storage vapor pressure and all inspection records. These records shall be summarized on a monthly basis, and may be in the form of computer-generated data, which is available to District personnel on short notice (rather than actual paper copies of throughput data). These records shall be kept on file for a minimum of 5 years. (Basis: Cumulative Increase, Rule 2-5)

RECOMMENDATION

Waive the Authority to Construct and Issue a Permit to Operate to Chevron for the following equipment:

S-4940 Tank D-4940, Chemical Additives Tank, approximately 1450 gallon capacity

By: Barry G. Young
Barry G. Young
Supervising Air Quality Engineer

Date: 4/13/06

EVALUATION REPORT
Chevron Products Company
Application #14565 - Plant #10 (Site #A0010)
841 Chevron Way
Richmond, CA 94802

I. BACKGROUND

Chevron Products Company is applying for an Authority to Construct/Permit to Operate for the following:

S-3127 External Floating Roof Tank

This is an existing tank used to collect waste oil throughout the refinery. Based on experience from other tanks about twice per year, an emulsion layer is created separating the tank's contents. This layer makes the tank difficult to use and therefore must be broken down in order for the tank to be useful. The facility has proposed to heat the tank to break down the emulsion layer up to 3 times per year.

II. EMISSION CALCULATIONS

Using EPA Tanks 4.0, emissions were compared from storing jet fuel (2-3 psia vapor pressure as a baseline) and other material. See attached program results. The emissions from the heating events were extrapolated to estimate emissions at 11 psia. Based on the tank properties, the Tanks 4.0 gives the following emissions:

	Lb/yr	Lb/day	Tons/yr
Baseline (old)	1467	4	0.73
Normal (260 days)	1045		
Heating (105 days)	3129	30	
Total (new)	4174		2.09
Difference	2707		1.35

Tank heating will be limited to 21 days. It is assumed that the contents will cool to ambient temperature in 14 days. Conservatively, emissions are assumed to be at the highest rate for the 35 days per event (105 days total for 3 events). The net increase of annual organic emissions are estimated to be 2707 pounds (1.35 tons).

Based on 0.38% weight of benzene concentration allowed, the concentration of benzene at 11 psia is about 200 ppm (40 mmHg* 0.0038/760 mmHg). Assuming the molecular weight of benzene and the other material is roughly the same, the estimated maximum potential benzene emissions that will increase from this modification are 1.1 pounds per year (200 * 5543/1E6).

III. PLANT CUMULATIVE INCREASE (since 4/5/91)

The cumulative increase from this modification is 1.35 tons of POC annually.

IV. TOXIC SCREENING ANALYSIS

A toxic risk screen was not required because net benzene emissions are less than 6.7 pounds per year.

V. BEST AVAILABLE CONTROL TECHNOLOGY

The highest net POC emissions per day are 26 pounds. In accordance with Regulation 2-2-301, because the organic emissions of these sources are estimated to exceed 10 pounds per day, a Best Available Control Technology (BACT) review is required. According to the EPA's Con-Co\$t (2nd edition) spreadsheets for thermal oxidizers, it would cost approximately \$82,870 per year for a basic system. A system needed for a storage tank would be more expensive. The cost to dome the tank to capture the emissions is approximately \$27,000 per year. See attachment "Cost Effectiveness of Covering EFRTs at Bay Area Refineries with Aluminum Dome Roofs" using distillate storage with diameter less than 100 feet. Approximately 2.05 tons (98% of 2.09 tons) of POC emissions per year would need to be controlled, which equates to \$40,500 per ton of POC reduced for the thermal oxidizer only. This is greater than the BACT cost-effectiveness level of \$17,500 per ton for POC. Hence, BACT1 is not cost-effective. The owner/operator is expected to meet BACT 2 by complying with the roof, seal and fittings requirements of Regulation 8, Rule 5, Section 304 (External Floating Roofs).

VI. OFFSETS

This application requires offsets since facility emissions are greater than 35 tons per year. The net annual increase of POC emissions from this modification is 1.35 tons. Using an offset ratio of 1.15, 1.56 tons of POC emissions would need to be offset. Chevron has submitted Banking Certificate #917 for the offsets.

VII. STATEMENT OF COMPLIANCE

The owner/operator is expected to meet the requirements of Regulation 8, Rule 5. The owner/operator is expected to comply with Permit Condition #23262 (outlined in Section VIII).

The engineering review is consistent with similar projects. Standard permit conditions were applied and standard emission factors were used in accordance with Permit Handbook, Chapter 4. This project is considered to be ministerial and therefore is not subject to CEQA review.

This project is over 1,000 feet from the nearest public school and is therefore not subject to the public notification requirements of Regulation 2-1-412. PSD, NSPS, and NESHAPS are not triggered.

VIII. CONDITIONS

Condition #20361 will be replaced with Condition #23262 below.

In addition to requirements of Regulation 8, Rule 5, the owner/operator shall comply with the following permit conditions for Source 3127 (S-3127, Tank 3127, External Floating Roof Tank).

1. The owner/operator shall not exceed a throughput of 223,000 barrels of recovered oil in any consecutive 12-month period. [Cumulative Increase]
2. Unless this tank is operated under Part 5 below, the owner/operator shall only store materials with a maximum vapor pressure of 2.5 psia. [Cumulative Increase]
3. The owner/operator shall not allow the total benzene concentration content of the material stored to exceed 0.38% by weight. [Regulation 2, Rule 5]
4. To demonstrate compliance with Part 2 and 3, the owner/operator shall analyze material stored on a quarterly basis for vapor pressure and benzene content. [Cumulative Increase]
5. The owner/operator is allowed to heat the contents of the tank under the following conditions:
 - a. The number of heating events shall not exceed three (3) in any rolling 12-month period,
 - b. The maximum temperature of the contents in the tank shall not exceed 150 degrees Fahrenheit,
 - c. The temperature of the tank shall be monitored while the tank is heated, and
 - d. The time allowed for heating the contents of the tank shall not exceed 21 consecutive days from the event start date.An event is counted when heat is applied to the tank. [Cumulative Increase]
6. The owner/operator shall maintain the following records:
 - a. Monthly throughput of all material,
 - b. The total throughput of all material for each 12-month period,
 - c. All vapor pressure and benzene analyses results including the date the analyses were made,
 - d. The start date and stop date when the tank contents are heated, and
 - e. The peak temperature when the contents of the tank are heated.

Records shall be kept on site for at least 5 years from the date of entry and made available to District staff upon request. [Recordkeeping]

IX. RECOMMENDATION

I recommend the Authority to Construct be waived and a Permit to Operate be issued to Chevron Products Company for:

S-3127 External Floating Roof Tank

Condition #20361 will be replaced with Condition #23262.

1.56 tons of POC offsets were surrendered with Certificate #917.

Fred Tanaka
Air Quality Engineer II
Engineering Division

Date: _____