

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT <i>ENGINEERING & COMPLIANCE</i> APPLICATION PROCESSING AND CALCULATIONS	PAGES 21	PAGE 1
	APPL. NO. 529463	DATE March 1, 2012
	PROCESSED BY: Connie Yee	CHECKED BY

PERMIT TO CONSTRUCT EVALUATION

COMPANY NAME, LOCATION ADDRESS:

Ultramar Inc, SCAQMD ID # 800026
2402 E. Anaheim Street
Wilmington CA 90744

EQUIPMENT DESCRIPTION:

The following equipment is new to the facility. Additions to the equipment description are underlined.

Section H of Ultramar’s Facility Permit, ID# 800026

Equipment	ID No.	Connected To	Source Type/ Monitoring Unit	Emissions And Requirements	Conditions
Process 10 : TREATING/STRIPPING					P13.1
System 15: SELENIUM FILTERING UNIT					
<u>FILTER, ACTIVATED CARBON, DIAMETER: 6 FEET; HEIGHT: 9 FEET</u> A/N: 529463	<u>Dx</u>				<u>E448.x</u>
<u>FILTER, CARTRIDGE, DIAMETER: 2 FT; HEIGHT: 6 FEET 7 INCHES</u> A/N: 529463	<u>Dxx</u>				<u>E448.x</u>
<u>CARBON ADSORBER, ACTIVATED CARBON, ONE CANISTER, 5800 LBS, DIAMETER: 6 FEET; HEIGHT: 9 FEET</u> A/N: 529463	<u>Cx</u>				<u>E448.xx</u>
<u>FUGITIVE EMISSIONS, MISCELLANEOUS</u>	<u>Dxxx</u>			<u>HAP: (10) [40CFR 63 Subpart CC, #2, 12-19-2005]</u>	<u>E207.x</u> <u>H23.17</u>

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CONDITIONS:

The following permit conditions shall apply to this process unit in order to comply with all applicable District, State, and Federal standards.

PROCESS CONDITIONS

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

Contaminant	Rule	Rule/Subpart
Benzene	40CFR61, SUBPART	FF

[Processes subject to this condition: P1, P2, P3, P4, P5, P7, P8, P9, P10, P11, P12, P14]

[**40CFR 61 Subpart FF, 12/04/03**]

DEVICE CONDITIONS:

E. Equipment Operation/Construction Requirements

E207.1 The operator shall operate valves and flanges according to the following specifications:

For all new valves and flanges in VOC service, a leak greater than 200 ppm measured as methane above background by EPA Method 21 shall be repaired within 7 days of detection.

[**Rule 1303(b)(2)-Offset, 5-10-1996; Rule 1303(b)(2)-Offset, 12-6-2002**]

[Devices subject to this condition: Dxxx]

E448.x The operator shall comply with the following requirements:

The operator shall inspect/replace the filters no more than twice a week.

The operator shall completely shut the flow of stripped water to the filter vessel before opening the filter vessel.

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Prior to opening the filter vessel, the operator shall drain the remaining liquid in the filter vessel to the wastewater system. In addition, the operator shall flush the drain system component with water while discharging the liquid to the wastewater system.

The operator shall keep all spent filters in a tightly covered container which shall remain closed at all times until removed and disposed.

The operator shall maintain records in a manner approved by the District to demonstrate compliance with the requirements specified under this condition.

[Rule 1303(b)(2)-Offset, 5-10-1996; Rule 1303(b)(2)-Offset, 12-6-2002]

[Devices subject to this condition: Dx, Dxx]

E448.xx The operator shall comply with the following requirements:

The operator shall inspect/replace the carbon no more than once per month.

The operator shall completely shut the flow of stripped water to the carbon vessel before opening the carbon vessel.

Prior to opening the carbon vessel, the operator shall drain the remaining liquid in the vessel to the wastewater system. In addition, the operator shall flush the drain system component with water while discharging the liquid to the wastewater system.

The operator shall keep all spent carbon in a tightly covered container which shall remain closed at all times until removed and disposed.

The operator shall maintain records in a manner approved by the District to demonstrate compliance with the requirements specified under this condition.

[Rule 1303(b)(2)-Offset, 5-10-1996; Rule 1303(b)(2)-Offset, 12-6-2002]

[Devices subject to this condition: Cx]

H. Applicable Rules

H23.17 This equipment is subject to the applicable requirements of the following rules or regulations:

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<u>Contaminant</u>	<u>Rule</u>	<u>Rule/Subpart</u>
VOC	District Rule	1173

[RULE 1173, 5-13-1994; RULE 1173, 2-6-2009]

[Devices subject to this condition: Dxxx]

COMPLIANCE RECORD REVIEW:

A check of the AQMD Compliance Database shows that the facility has received three (3) Notices to Comply and 16 Notices of Violation since January 1, 2010. All but two (2) of the NCs have been closed according to the Compliance database. None of the NCs or NOVs issued since January 1, 2010 apply to the stripped sour water tank or existing selenium removal system.

BACKGROUND:

Ultramar, Inc. is a refinery in the city of Wilmington. The facility is a NOx and SOx RECLAIM, Title V facility. Ultramar submitted the applications listed in Table 1 to:

Table 1 – AQMD Applications Submitted

A/N	Date Submitted	Equipment	Device ID	Requested Action	Previous A/N
529463	11/29/2011	Selenium Filtering Unit	Various	Construct new selenium filtering unit	n/a
529460	11/29/2011	Title V De Minimis Permit Revision	n/a	n/a	n/a

FEE EVALUATION:

The fees paid for the applications submitted are as follows:

Table 2 – Application Fees Submitted

A/N	Equipment	BCAT	Type	Status	Fee Schedule	Fees Required, \$	Fees Paid, \$
529463	Selenium Filtering Unit	022200	10	20	C	\$3,359.43	\$5,039.15*
529460	Title V Minor Permit Revision	555009	85	21	n/a	\$1,747.19	\$1,747.19
Total						\$5,106.62	\$6,786.34

* Expedited fee

PERMIT HISTORY:

The proposed selenium filtering unit is a new unit. Therefore, there is no permit history.

PROCESS DESCRIPTION:

The Ultramar (Valero Wilmington) Refinery operates a wastewater system. Selenium, a gray, nonmetallic chemical element of the sulfur group, naturally occurs in crude oil and accumulates in wastewater streams during the refining process. Selenium accumulates in the effluent water from the refinery's three sour water strippers. Before 2006, the wastewater system discharged approximately 5 to 7 pounds per day of selenium in its effluent water to the Los Angeles County Sanitation District (LACSD).

LACSD has identified selenium as a contaminant to its sludge composting operations. In 2004, LACSD established an effluent discharge limit of 2 pounds per day of selenium to be effective on July 1, 2006. To meet this limit, Ultramar installed a new Stripped Sour Water Selenium Concentration Unit 52 in 2006 (A/N 441204, PC issued on 02/22/2006). This system is known as the reverse osmosis and Vibrator Shear Enhanced Processing (VSEP) system. This selenium removal system is used to only treat stripped sour water and is a separate system from the primary refinery wastewater system. Please refer to A/N 441204 on the details of this process. A simple block flow diagram of the process is found below:



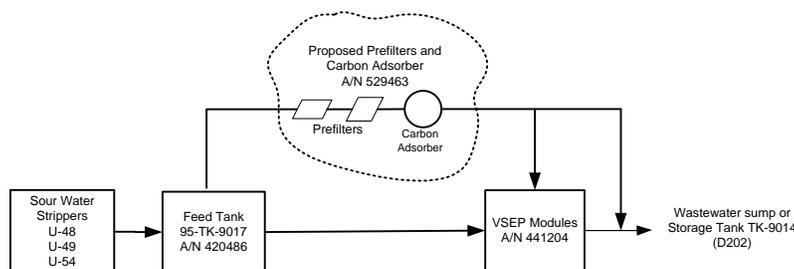
Figure 1. Current Process Flow Diagram

Since the installation of this VSEP unit in 2006, Ultramar has experienced problems in obtaining the desired reduction using only the VSEP system. The VSEP technology has not been very

effective in removing the selenium and extremely costly to operate and maintain. Ultramar has found the best way to control the selenium is to use crude oil with low selenium levels. In 2008, LACSD changed the selenium limit to 3 lbs/day on a monthly basis. For the last six months, the daily average ranged between 2 and 3 lbs/day without running the VSEP.

To comply with the selenium removal rate on a more consistent basis and not be troubled about the type of crude processed, Ultramar is proposing to install a small carbon adsorber system with two prefilters. This proprietary carbon technology was purchased from a nearby refinery that has found success with this system. This new carbon adsorber with two prefilter system can be used in conjunction in with the VSEP unit or as a standalone unit. Ultramar would like to completely do away with the VSEP system since it has proven to be ineffective and costly.

The proposed equipment consisting of two pre-filters and one vessel filled with approximately 5,800 lbs of propriety activated carbon will be located after existing storage tank 95-TK-9017 (A/N 420486). Currently, the stripped sour water stored in tank 95-TK-9017 goes directly to the VSEP system. With the proposed prefilters and carbon adsorber system, the stripped sour water will go from 95-TK-9017, through the proposed prefilters, and then to the carbon adsorber. The proposed process flow diagram is shown in Figure 2. The pre-filters will remove any particles and salts in the stream to minimize fouling of the carbon bed. The recovered water from the carbon adsorber system will either be sent to the VSEP modules and/or existing Tank 95-TK-9014 (D202), which is part of the VSEP unit. If there is an issue with the prefilters and carbon adsorber system, the prefilter and carbon adsorber system will be bypassed and the stripped sour water will go directly from tank 95-TK-9017 to the VSEP unit. The recovered water from tank 95-TK-9014 (D202) is primarily distributed for re-use in various refinery units (e.g., Naphtha Hydrotreating Unit 60, Gas Oil Unibon Hydrotreating Unit 80, Gas Oil Hydrodesulfurization Unit 58, and others). Any remaining water is discharged to the LACSD in which the selenium in the effluent water is expected to be less than 2 pounds per day.



New

Figure 2. Proposed Process Flow Diagram

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The selenium filtering system is a closed system with no vapor space once in operation. The carbon adsorber system will not be operated at all times and the slip stream to the unit can be shutdown. The refinery expects the concentration of the VOC in the stream to be minimal. Therefore, minimal volatile organic compounds or toxic materials are expected to be emitted from the system.

The new prefilter and activated carbon system is estimated for replacement after six (6) months. The refinery is only planning to run this small carbon system for only six (6) months at which time a decision will be made if the unit is economically feasible. If this small carbon system is viable and performs as expected, a larger system will be built to replace the existing VSEP unit.

EMISSIONS:

The proposed prefilters and carbon adsorber system is a closed system with no emission points to atmosphere. Adding this filtration unit and carbon system will not change the emission from feed tank 95-TK-9017 since there is no change in process rate or constituents in the stream.

VOC emissions, however, could possibly be expected from the regular replacement of prefilters, carbon adsorber cartridge and from fugitive components. Ultramar proposes to install two prefilters before the carbon adsorber to remove any particles and salts in the stream to minimize fouling of the carbon bed. The prefilters may or may not be required. Ultramar plans to initially install the prefilters and check the prefilters twice a week to see if they are viable. The nearby refinery using this technology has informed Ultramar that the filters are needed to help keep the main carbon clean and extend the life of the carbon bed. As noted above, the refinery only plans to operate this prefilter and carbon adsorber system for six months. Nevertheless, the prefilters and carbon adsorber while in self-contained vessels may cause issuance of air contaminants during its operation and maintenance.

Emissions from Replacement of Prefilters and Carbon Adsorber

Emissions from Opening the Filter Housing Vessels

The housing of the first prefilter is approximately 6 feet Dia x 9 feet H, while the housing of the cartridge prefilter is approximately 2 feet Dia x 6 feet 7 inches H. The gas inside the vessel is assumed to be saturated in equilibrium with the effluent wastewater at ambient temperature. Both the filter housing vessel and carbon adsorber system will be considered as similar to a drain-dry tank where there is no remaining liquid in the vessel housing after the liquid is drained from the housing. From EPA's AP42, Chapter 7: Liquid Storage Tanks, the emissions from a drain-dry tank can be calculated according to Equation 2-26:

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$$E = \frac{PV}{RT} M_v S$$

where,

E = Emissions, lb

P = Vapor pressure of the liquid within the tank, psia = 0.45 psia (based on sample taken of the contents of sour water)

V = Volume of the vapor space (assumed to be total volume of the filter housing), ft³

R = Ideal gas constant = 10.73 psia-ft³/lb-mol °R

T = Average temperature, °R = 530 °R

M_v = Vapor molecular weight for crude oil, RVP5 = 50 lb/lb-mol [From Tanks 4.0.9d]

S = Saturation factor, dimensionless = 0.15 for drain-dry tank

First Prefilter:

$$\text{Total Volume for Prefilter} = \frac{(6 \text{ feet})^2 \times \Pi}{4} \times 9 \text{ feet} = 254.47 \text{ ft}^3$$

$$\text{Emissions of VOC Per Prefilter} = \frac{(0.45 \text{ psia} \times 254.47 \text{ ft}^3) \times 50 \text{ lb/lb-mol} \times 0.15}{10.73 \text{ psia-ft}^3 \times 530 \text{ }^\circ\text{R}}$$

$$= 0.151 \text{ lb}$$

Second Prefilter (Cartridge):

$$\text{Total Volume for Cartridge Filter} = \frac{(2 \text{ feet})^2 \times \Pi}{4} \times 6.58 \text{ feet} = 20.67 \text{ ft}^3$$

$$\text{Emissions of VOC Per Prefilter} = \frac{(0.45 \text{ psia} \times 20.67 \text{ ft}^3) \times 50 \text{ lb/lb-mol} \times 0.15}{10.73 \text{ psia-ft}^3 \times 530 \text{ }^\circ\text{R}}$$

$$= 0.012 \text{ lb}$$

$$\text{Total Mass of VOC} = 0.151 \text{ lb} + 0.012 \text{ lbs} = 0.163 \text{ lb}$$

The total mass of VOC emitted to the atmosphere for each time both prefilter vessels are opened is 0.163 lb.

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Emissions from Opening the Carbon Adsorber

The housing of the carbon adsorber is approximately 6 feet Dia x 9 feet H. The gas inside the vessel is assumed to be saturated in equilibrium with the effluent wastewater at ambient temperature. Again, the carbon adsorber system will be considered as similar to a drain-dry tank where there is no remaining liquid in the vessel housing after the liquid is drained from the housing.

Carbon adsorber:

$$\text{Total Volume for Carbon Adsorber} = \frac{(6 \text{ feet})^2 \times \Pi}{4} \times 9 \text{ feet} = 254.5 \text{ ft}^3$$

$$\begin{aligned} \text{Emissions of VOC for C/A} &= \frac{(0.45 \text{ psia} \times 254.47 \text{ ft}^3)}{10.73 \text{ psia-ft}^3} \times 50 \text{ lb/lb-mol} \times 0.15 \\ &\quad \frac{\text{lb-mol } ^\circ\text{R}}{530 \text{ } ^\circ\text{R}} \\ &= 0.151 \text{ lb} \end{aligned}$$

The total mass of VOC emitted to the atmosphere for each time the carbon adsorber vessel is opened is 0.151 lb.

30-Day Daily Average Emissions

Since this proposed prefilter system is experimental, Ultramar anticipates opening the vessels to check the condition of the filters twice a week for sampling. They do not anticipate doing changeouts each time they open the vessel but only to check the condition of the filters. Ultramar estimates each filter will be replaced every 3 months, but based on the first 3 months results this could change. Ultramar wants the ability to closely monitor the condition of the filters during the first six months to see if this system is a viable. This is in preparation for the installation of a new second unit in the future. The refinery heard from any facility (with a similar system) that they monitor their vessels once or twice a week.

As noted above, the intent of this small unit is to test this new proprietary carbon and then build a full size version if it proves successful. There is very little VOC in the stream if any at all, and the pre-filters are to remove any salts and particles. As a worse case, the frequency of filter change is assumed to be twice per week and carbon to be once per month. The 30-day average emissions are:

**Table 3: Fugitive Components Count and Emissions
Selenium Filtering Unit, A/N 529463**

Source Unit		Service	No of Existing Components (1)	No of Components to be Removed (2)	No. of New Components to be Installed (3)	Correlation Equation Factor, 200 ppm Screening Value (lbs/year)	Pre-Mod Emissions (lbs/year)	Post-Mod Emissions (lbs/year)
Valves	Sealed Bellows	All	-				-	
	SCAQMD Approved I & M Program	Gas / Vapor	-				-	
		Light Liquid (4)	-		8	2.29	-	18.34
		Heavy Liquid (5)	-				-	
Pumps	Sealless Type	Light Liquid (4)	-				-	
	Double Mechanical Seals or Equivalent Seals	Light Liquid (4)	-				-	
Single Mechanical Seals		Heavy Liquid (5)	2	2		26.48	-	-52.97
Compressors		Gas / Vapor	-				-	
Flanges (ANSI 16.5-1988)		All	-		45	3.66	-	164.72
Connectors		All	-				-	
Pressure Relief Valves		All	-				-	
Process Drains with P-Trap or Seal Pot		All	-				-	
Other (including fittings, hatches, sight-glasses, and meters)		All	-				-	
Total Emissions (lbs/year)			-				-	130.10
Total Emissions (lbs/day)			-				-	0.36

- (1) Any component existing prior to installation.
- (2) Any component removed due to installation
- (3) Any new component proposed to be installed due to the modification; this also includes new components to be installed to replace existing components.
- (4) Light liquid and gas/liquid streams: Liquid or gas/liquid stream with a vapor pressure greater than that of kerosene (>0.1 psia @ 100°F or 689 Pa @ 38°C), based on the most volatile class present at 20% by volume.
- (5) Heavy liquid: streams with a vapor pressure equal to or less than that of kerosene (<0.1 psia @ 100°F or 689 Pa @ 38°C), based on the most volatile class present at 20% by volume.

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The emissions from this project are due to the fugitive components of 0.36 lb/day and opening of the filter vessels and carbon adsorber is of 0.052 lb/day for a total of 0.41 lbs/day. Note that the emissions should actually be less since Ultramar only plans to operate this unit for 6 months and the VOC content of the stripped water is very low. This amount of emissions will be categorized as a de minimis increase.

Total Emissions

Table 4. Total Emissions

Activity	Emissions, lbs/day
Opening the Filter Housing Vessels and Carbon Adsorber	0.052
Fugitives	0.36
Total Emissions	0.41

RULES EVALUATION:

PART 1 SCAQMD REGULATIONS

Rule 212	Standards for Approving Permits	November 14, 1997
	<p>This proposed modification meets all criteria in Rule 212 for permit approval. The modifications are designed so it can be expected to operate without emitting air contaminants in violation of Division 26 of the State Health and Safety Code or in violation of AQMD's rules and regulations.</p> <p>The addition of the selenium filtration system does not constitute a significant project because (1) the permit unit is not located within 1000 feet of a school; (2) the emissions increase does not exceed the daily maximum specified in subdivision (g) of this rule (30 lbs/day); and (3) the permit unit does not have an increased cancer risk greater than, or equal to, one in a million (1×10^{-6}) during a lifetime of 70 years or pose a risk of nuisance.</p>	
Rule 402	Nuisance	May 7, 1976
	<p>Nuisance complaints associated with the above project are not expected under normal operating conditions.</p>	

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Rule 1173	Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants	June 1, 2007
	<p>The miscellaneous fugitive components in this project are subject to Rule 1173 per Condition H23.17. The fugitive components will be subject to the leak, identification, operator inspection, maintenance and recordkeeping and reporting requirements. Ultramar shall include the new components into their Inspection and Maintenance (I &M) program for monitoring and repairing fugitive components. Compliance with this rule is expected.</p>	

Rule 1176	Sumps and Wastewater Separators	September 13, 1996
(e)(1)	<p>Wastewater System Emissions. This Selenium Concentration Unit does not have a significant impact on the refinery's oily wastewater system and is expected to meet the 500 ppm limit in Rule 1176. It is a separate system from the refinery's primary wastewater treatment system and does not treat oily wastewater. This unit removes selenium from the stripped sour water before the water is recycled to other units within the refinery or sent to LA County Sanitation District. It is in the interest of the refinery to maintain the stripped sour water oil free since the majority of the water is reused in the refinery, while the remainder is discharged to LA County Sanitation District and subject to discharge standards for Oil and Grease. Laboratory test results performed on May 20, 2004 from sampling conducted on Tank 95-TK-9017 (feed tank to the 1st stage of the VSEP system) indicated a very low oil and grease concentration of 1.5 mg/l.</p>	
(e)(2)	<p>Sumps and Wastewater Separators. No new sumps and wastewater separators will be installed in this new unit.</p>	
(e)(3)	<p>Sewer Lines. No new sewer lines will be installed in this new unit.</p>	
(e)(4)	<p>Process Drains. The unit will not employ any new process drains.</p>	
(e)(5)	<p>Junction Boxes. No new junction boxes will be installed in this new unit.</p>	
(e)(6)	<p>APC Devices. No new APC devices will be installed in this new unit.</p>	
(e)(7)	<p>Additional Requirements for drain system components (DSCs) at Petroleum Refineries. Ultramar complies with the control requirements of this paragraph according to subparagraphs (e)(7)(A): Control of Repeat Emitting DSCs. The refinery is required to inspect, monitor, and maintain the wastewater system.</p>	

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Rule 1176	Sumps and Wastewater Separators	September 13, 1996
	closed vent system, and all DSCs according to the schedule outlined in the Table 2 of the rule. Ultramar submits quarterly reports to the District with the information required in (g)(2)(B).	

REG XIII	New Source Review (NSR)	December 6, 2002
	Application Deem Complete Year: 2011	
	This project is subject to New Source Review since it is a new construction. There is an emission increase for this project is less than 0.5 lbs/day. As shown in Table 4, there is a 0.41 lb/day increase in VOC emissions from this project.	
1303(a)	Best Available Control Technology (BACT). BACT is required when there is an emission increase of 1 lb/day. Compliance with Rule 1173 is BACT for fugitive components. As discussed in the Emissions Calculation Section of this evaluation, the increase in emissions is less than 1.0 lb/day. Therefore, BACT is not required; nevertheless, Ultramar will continue to comply with the requirements of Rule 1173. Compliance is expected.	
1303(b)	Modeling. Air quality modeling for VOC is not required.	
1303(b)(2)	Emission Offsets. Offsets are required according to District policy if the project emission increases are more than 0.5 lb/day for all non-attainment air contaminant and their precursors (excluding CO). To keep the emission increase below 0.5 lbs/day, any fugitive components associated with this system with leaks greater than 200 ppm will be repaired, replaced or removed within 7 days of detection. Condition H207.x has been added to require all new valves and flanges in VOC service with a leak greater than 200 ppm measured as methane above background by EPA Method 21 shall be repaired within 7 days of detection. As a result of this limit, no offsets are required.	
1303(b)(3)	Sensitive Zone Requirements. Since no ERCs are required, the sensitive zone requirement does not apply.	
1303(b)(4)	Facility Compliance. This facility complies with all applicable District rules and regulations.	
1303(b)(5)	Major Polluting Facilities. A new major polluting facility or major modification at an existing major polluting facility shall comply with the requirements of this paragraph. This refinery is an existing major polluting facility and the project is a major modification. Rule 1302(r) defines (in part) a major modification as any modification "... at an existing major polluting facility that will cause; <ol style="list-style-type: none"> 1) an increase of <u>one</u> pound per day or more, of the facility's potential to 	

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REG XIII	New Source Review (NSR)	December 6, 2002
		Application Deem Complete Year: 2011
	<p>emit oxides of nitrogen (NOx) or volatile organic compounds (VOCs), provided the facility is located in the South Coast Air Basin (SOCAB) , ...”</p> <p>The emission increase of VOC is less than 1 lb/day. Therefore, the requirements in this paragraph do not apply.</p>	

Rule 1401	New Source Review of Toxic Air Contaminants	March 4, 2005
	<p>In accordance with Rule 1401(f)(3), to determine the maximum individual cancer risk (MICR), cancer burden and <i>chronic</i> health index (HIC) due to a modified permit unit, the <u>increase</u> in emissions from the modified permit unit shall be calculated based on the difference between the total permitted emissions after the modification, calculated pursuant to the criteria established in subparagraphs:</p> <p>(f)(1)(A), the maximum rated capacity; (f)(1)(B), the maximum possible annual hours of operation; (f)(1)(C), the maximum annual emissions; and (f)(1)(D), the physical characteristics of the materials processed,</p> <p>and the total permitted emissions prior to the modification as stated in the permit condition [Subparagraph (f)(3)(A)].</p> <p>In accordance with Rule 1401(f)(4), to determine the <i>acute</i> health index (HIA) due to a modified permit unit, the <u>total</u> emissions from the permit unit shall be calculated on a based on permit conditions which directly limit the emissions.</p> <p>As a result, the Tier 2 risk assessment calculations were conservatively conducted to estimate the health risks associated using the <u>total</u> emissions from the permit unit based on a sample taken from the storage tank storing the sour water before treatment in the proposed filter and carbon system.</p> <p>Selenium and selenium compounds is only identified as a chronic health hazard. The MICR and HIA were not applicable for selenium and selenium compounds Therefore, the HIC for both off-site worker and residential receptors are shown below in Table 9. The calculated HIC for The Tier 2 Screening Risk Assessments is shown in Appendix A. The calculated HIC for the each target organ were below the Rule 1401 risk thresholds. Therefore, the proposed project complies with Rule 1401.</p>	

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Rule 1401	New Source Review of Toxic Air Contaminants	March 4, 2005	
Table 9 - Rule 1401 Emissions and Summary			
Air Toxic Emissions			
Toxic Air Contaminant	Post Modification Emissions, lbs/day		
Selenium	1.35		
Risk Summary			
Scenario	MICR	HI _{Acute} , HIA	HI _{Chronic} , HIC
Worker	n/a	n/a	9.50x10 ⁻²
Residential	n/a	n/a	1.47x10 ⁻³
Maximum Risk	n/a	n/a	9.50x10 ⁻²
Rule 1401 Risk Thresholds	1 x10 ⁻⁶	1	1
	Pass	Pass	Pass
<p>Federal NSR for toxics does not apply since this is not considered a reconstruction per 40CFR63, Subpart A, §63.2.</p>			

Regulation XX	Regional Clean Air Incentives Market (RECLAIM)
	<p>Ultramar is a Cycle 1 NOx and SOx RECLAIM facility and therefore is subject to RECLAIM requirements. However, the subject equipment does not emit NOx or SOx and therefore RECLAIM requirements do not apply to this project.</p>

Regulation XXX	Title V	March 16, 2001
	<p>Ultramar is a designated as a Title V facility. The Title V permit was issued on May 29, 2009. Therefore, the facility is now subject to the requirements of Reg XXX.</p> <p>There is an emission increase of VOC associated with this project. These applications are subject to the requirements of a De Minimis Significant Permit Revision [Rule 3000(b)(7)], which is any Title V permit revision where the cumulative emission increases of non-RECLAIM pollutants or hazardous air pollutants (HAP) from these permit revisions during the term of the permit are not greater than any of the emission threshold levels listed below:</p> <p style="text-align: center;">De Minimis Emission Threshold Level</p>	

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Connie Yee

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Regulation XXX	Title V	March 16, 2001																													
	<p style="text-align: center;">DE MINIMIS Daily Maximum <u>in Pounds Per Day</u></p> <table style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: center;"><u>Air Contaminant</u></td> <td></td> </tr> <tr> <td style="text-align: center;">HAP</td> <td style="text-align: center;">30</td> </tr> <tr> <td style="text-align: center;">VOC</td> <td style="text-align: center;">30</td> </tr> <tr> <td style="text-align: center;">NO_x</td> <td style="text-align: center;">40</td> </tr> <tr> <td style="text-align: center;">PM-10</td> <td style="text-align: center;">30</td> </tr> <tr> <td style="text-align: center;">SO_x</td> <td style="text-align: center;">60</td> </tr> <tr> <td style="text-align: center;">CO</td> <td style="text-align: center;">220</td> </tr> </table> <p>The cumulative emission increase since December 16, 2011 is as follows:</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: center;">Air Contaminant</th> <th style="text-align: center;">Prior revisions, lbs/day</th> <th style="text-align: center;">This revision, lbs/day</th> <th style="text-align: center;">Total, lbs/day</th> <th style="text-align: center;">Threshold level, lbs/day</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">VOC</td> <td style="text-align: center;">3.508</td> <td style="text-align: center;">0.41</td> <td style="text-align: center;">3.918</td> <td style="text-align: center;">30</td> </tr> <tr> <td style="text-align: center;">CO</td> <td style="text-align: center;">48</td> <td style="text-align: center;">0</td> <td style="text-align: center;">48</td> <td style="text-align: center;">220</td> </tr> </tbody> </table> <p>A De Minimis Significant Permit Revision shall also meet the requirements of clauses (b)(15)(A)(i), (ii), (iii), (iv), (vii), (viii) and (ix) of Rule 3000.</p>	<u>Air Contaminant</u>		HAP	30	VOC	30	NO _x	40	PM-10	30	SO _x	60	CO	220	Air Contaminant	Prior revisions, lbs/day	This revision, lbs/day	Total, lbs/day	Threshold level, lbs/day	VOC	3.508	0.41	3.918	30	CO	48	0	48	220	
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3000 (b)(15)(A)(i)	This revision does not require or change a case-by-case evaluation of: reasonably available control technology (RACT) pursuant to Title I of the federal Clean Air Act; or maximum achievable control technology (MACT) pursuant to 40 CFR Part 63, Subpart B.																														
(b)(15)(A)(ii)	This revision does not violate a regulatory requirement.																														
(b)(15)(A)(iii)	This revision does not require any significant change in monitoring terms or conditions in the permit.																														
(b)(15)(A)(iv)	This revision does not require relaxation of any recordkeeping, or reporting requirement, or term, or condition in the permit.																														
(b)(15)(A)(vii)	This revision does not result in an increase of GHG emissions of > 75,000 tpy CO ₂ e.																														
(b)(15)(A)(viii)	This revision does not establish or change a permit condition that the facility has assumed to avoid an applicable requirement.																														
(b)(15)(A)(ix)	This revision is not an installation of a new permit unit subject to a New Source Performance Standard (NSPS) pursuant to 40 CFR Part 60, or a National Emission Standard for Hazardous Air Pollutants (NESHAP) pursuant to 40 CFR																														

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Regulation XXX	Title V	March 16, 2001
	Part 61 or 40 CFR Part 63.	
A De Minimis Significant Permit Revision is subject to a 45-day EPA review, Rule 3003(j), and not subject to public participation requirements, Rule 3006(b).		

PART 2 STATE REGULATIONS

California Environmental Quality Act (CEQA)	
	This proposed modification is not a significant project.

PART 3 FEDERAL REGULATIONS

40CFR Part 60 Subpart GGGa	Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006
§60.590a	<p><u>Applicability and designation of affected facility</u></p> <p>This regulation is applicable to affected facilities in refineries that begin construction after November 7, 2006. The following are affected facilities under this subpart:</p> <ul style="list-style-type: none"> • Compressors • The group of all equipment within a process unit <p>Owners and operators are not required to comply with the definition of “process unit” in §60.591a of this subpart until the EPA takes final action to require compliance and publishes a document in the Federal Register. As of November 1, 2011, the definition of “process unit” in §60.591a is stayed, thus the definition in §60.591a(e) is used. Process unit is defined as components assembled to produce intermediate or final products from petroleum, unfinished petroleum derivatives, or other intermediates; a process unit can operate independently if supplied with sufficient feed or raw materials and sufficient storage facilities for the product.</p> <p>The new fugitive components being installed in the filters or carbon adsorber are not subject to the requirements of this regulation, since the filters and carbon adsorber are not considered a process unit as defined in this section.</p>

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40 CFR Part 60 Subpart QQQ	Standards of Performance for VOC Emissions from Petroleum Refinery Wastewater Systems
§60.690	The selenium project will not install any new area drains for the collection of storm water and process water spills or any new oil water separators.

40CFR Part 61 Subpart FF	National Emission Standard for Benzene Waste Operations				
§61.340	<p>Since Ultramar is a petroleum refinery, the facility is subject to the requirements of Subpart FF. Ultramar's total annual benzene quantity for the year 2010 was reported to EPA as follows:</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: center;">Year</th> <th style="text-align: center;">Total Annual Benzene Quantity (Mg/yr)</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">2010</td> <td style="text-align: center;">42.8</td> </tr> </tbody> </table>	Year	Total Annual Benzene Quantity (Mg/yr)	2010	42.8
Year	Total Annual Benzene Quantity (Mg/yr)				
2010	42.8				
§61.342	<p>To comply with the general standards (§61.342), Subpart FF contains several different options that a facility may use to manage and treat the facility waste if the total annual benzene quantity from the facility waste is greater than or equal to 10 Mg/yr. The options are:</p> <ul style="list-style-type: none"> • 61.342(c): waste management and treatment requirements for facilities at which the total annual benzene quantity from the facility waste is equal to or greater than 10 Mg/yr. • 61.342(d): an alternative to requirements under §61.342(c) • 61.342(e):an alternative to the requirements under §61.342(c) and (d) • 61.342(f): off-site treatment option as an alternative to §61.242(c)(1)(i); this option is not available to facilities complying under §61.342(e). <p>Ultramar elected to comply with the alternative compliance option §61.342(e), which is also known as the 6BQ compliance option. §61.342(e)(2) requires all wastes with a water content of 10% or greater (aqueous waste) to comply with the wastewater provisions in the subsequent paragraphs. In §61.342(e)(2)(i), the sum of all benzene quantity of aqueous waste must be equal to or less than 6.0 Mg/yr. Therefore, the 6BQ compliance option requires Ultramar to manage the benzene quantity for all aqueous waste to less than 6.0 Mg/yr. In checking the Subpart FF annual reports submitted to EPA, we found the benzene quantity for the aqueous</p>				

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40CFR Part 61 Subpart FF	National Emission Standard for Benzene Waste Operations				
	waste to be as follows: <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: center;">Year</th> <th style="text-align: center;">Total Annual Benzene Quantity from Aqueous Waste (Mg/yr)</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">2010</td> <td style="text-align: center;">2.5</td> </tr> </tbody> </table> <p>Therefore, Ultramar complies with the general requirements of Subpart FF. The total annual benzene quantification and information required to document compliance with the alternative requirements of §61.342(e) are submitted to EPA annually in accordance with the reporting requirements of §61.357.</p>	Year	Total Annual Benzene Quantity from Aqueous Waste (Mg/yr)	2010	2.5
Year	Total Annual Benzene Quantity from Aqueous Waste (Mg/yr)				
2010	2.5				

40CFR Part 63 Subpart CC	National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries
	This process unit is subject to the inspection, maintenance, and recordkeeping requirements of Subpart CC. Any new fugitive components installed contain less than 5 weight % organic hazardous air pollutants (HAPs). The refinery complies with the wastewater provisions of this subpart by complying with 40 CFR 61 Subpart FF.

CONCLUSION:

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

A/N	Recommendation
529463	Issue Permit to Construct
529460	Approve Title V Permit Revision Application

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Appendix A.
Rule 1401 Tier 2 Screening Risk Assessment Report