

<b>SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT</b>  <b>ENGINEERING &amp; COMPLIANCE</b>  APPLICATION PROCESSING AND CALCULATIONS	PAGES 15	PAGE 1
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	PROCESSED By Thomas Lee	CHECKED By

**PERMIT TO OPERATE**

**COMPANY NAME:** Tesoro Refining and Marketing Company,  
Los Angeles Refinery, ID 800436

**MAILING ADDRESS:** P.O. Box 817  
Wilmington, CA 90748

**EQUIPMENT LOCATION:** 2101 E. Pacific Coast Highway  
Wilmington, CA 90744

**CONTACT PERSON:** Royann Winchester  
Environmental Specialist  
(310) 522-6125

**EQUIPMENT DESCRIPTION:**

Additions to the equipment description are noted in underlines. Deletions are noted in ~~strikeouts~~.

**Section D of Facility Permit, ID# 800436**

(The following equipment under Process 5, System 4 will be moved from Section H to Section D in the Title V permit.)

Description	ID No.	Connected To	RECLAIM Source Type/Monitoring Unit	Emissions And Requirements	Conditions
<b>Process 5: CATALYTIC REFORMING</b>					PI3.1
<b>System 4: CATALYTIC REFORMING UNIT NO. 2 HEATERS</b>					
HEATER, H-501A, REFINERY GAS, WITH LOW NOX BURNER, AIR PREHEATING, 31.4 MMBTU/HR WITH  A/N: 470285  BURNER, SIX BURNERS, JOHN ZINK MODEL NO. LM-116, REFINERY GAS, WITH LOW NOX BURNER, 31.4 MMBTU/HR	D216	C773 S990 D1333 D1343	NOX: MAJOR SOURCE; SOX: MAJOR SOURCE	CO: 400 PPMV (5A) [RULE 1146, 11-17-2000; RULE 1146, 9-5-2008]; CO: 2000 PPMV (5) [RULE 407, 4-2-1982; PM: (9) [RULE 404, 2-7-1986]  PM: 0.1 GRAINS/SCF (5) [RULE 409, 8-7-1981]	A63.4, B61.1, <del>D28.11</del> , D90.7, D328.2, <del>E54.2</del> , <del>E54.12</del> , <del>E448.x</del> , H23.3

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HEATER, H-501B, REFINERY GAS, WITH LOW NOX BURNER, AIR PREHEATING, 31.4 MMBTU/HR WITH A/N: 470286  BURNER, SIX BURNERS, JOHN ZINK MODEL NO. LM-116, REFINERY GAS, WITH LOW NOX BURNER, 31.4 MMBTU/HR	D217	C773 S990 D1333 D1343	NOX: MAJOR SOURCE; SOX: MAJOR SOURCE	CO: 400 PPMV (5A) [RULE 1146, 11-17-2000; RULE 1146, 9-5-2008]; CO: 2000 PPMV (5) [RULE 407, 4-2-1982; PM: (9) [RULE 404, 2-7-1986]  PM: 0.1 GRAINS/SCF (5) [RULE 409, 8-7-1981]	A63.4, B61.1, <del>D28.11</del> , D90.7, D328.2, <del>E54.2</del> , <del>E54.12</del> , <u>E448.x</u> , H23.3
STACK A/N: 469966	S990	D214 D215 D216 D217 C773			

**Section D of Facility Permit, ID# 800436**

(Changes to the following equipment under Process 5, System 4 in Section D have also been made as a result of this evaluation.)

Description	ID No.	Connected To	RECLAIMSource Type/Monitoring Unit	Emissions And Requirements	Conditions
<b>Process 5: CATALYTIC REFORMING</b>					PI3.1
<b>System 4: CATALYTIC REFORMING UNIT NO. 2 HEATERS</b>					
HEATER, H-502, REFINERY GAS, WITH LOW NOX BURNER, AIR PREHEATING, 55.8 MMBTU/HR WITH A/N: 469962  BURNER, REFINERY GAS, WITH LOW NOX BURNER, 55.8 MMBTU/HR	D214	C773 S990	NOX: MAJOR SOURCE; SOX: MAJOR SOURCE	CO: 2000 PPMV (5) [RULE 407, 4-2-1982]; PM: (9) [RULE 404, 2-7-1986]; PM: 0.1 GRAINS/SCF (5) [RULE 409, 8-7-1981]	A63.4, B61.1, D90.7, D328.1, <del>E54.2</del> , <del>E54.12</del> , <u>E448.x</u> , H23.3
HEATER, H-503/504, REFINERY GAS, WITH LOW NOX BURNER, AIR PREHEATING, 36.1 MMBTU/HR WITH A/N: 469964  BURNER, REFINERY GAS, WITH LOW NOX BURNER, 36.1 MMBTU/HR	D215	C773 S990	NOX: MAJOR SOURCE; SOX: MAJOR SOURCE	CO: 400 PPMV (5A) [RULE 1146, 11-17-2000; RULE 1146, 9-5-2008]; CO: 2000 PPMV (5) [RULE 407, 4-2-1982; PM: (9) [RULE 404, 2-7-1986]  PM: 0.1 GRAINS/SCF (5) [RULE 409, 8-7-1981]	A63.4, B61.1, D90.7, D328.2, <del>E54.2</del> , <del>E54.12</del> , <u>E448.x</u> , H23.3

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## CONDITIONS

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

Contaminant	Rule	Rule/Subpart
Benzene	40CFR61, SUBPART	FF

### [40CFR 61 Subpart FF, 12-4-2003]

A63.4 The operator shall limit emissions from this equipment as follows:

CONTAMINANT	EMISSIONS LIMIT
NOX	Less than or equal to 583 TONS IN ANY ONE YEAR
SOX	Less than or equal to 430 TONS IN ANY ONE YEAR

For the purposes of this condition, the limit(s) shall be based on the total combined emissions from equipment D112, D120, D146, D214, D215, D216, D217, D218, D722, D723, D724, D725, D770, D810, D812 & D1122.

The operator shall calculate the emission limit(s) of NO<sub>x</sub> and SO<sub>x</sub> based on the certified continuous monitor, 365-day period, to demonstrate exemption from PSD requirements. This condition applies only after Clean Fuel Phase 3 fuels are in production.

### [RULE 1703 – PSD Analysis, 10-7-1988]

[Devices subject to this condition: D112, D120, D146, D214, D215, D216, D217, D218, D722, D723, D724, D725, D770, D810, D812 & D1122]

B61.1 The operator shall not use fuel gas containing the following specified compounds:

Compound	ppm by volume
H <sub>2</sub> S greater than	160

The H<sub>2</sub>S concentration limit shall be based on a rolling 3-hour averaging period

### [40CFR 60 Subpart J, 6-24-2008; CONSENT DECREE, 3-21-2001]

[Devices subject to this condition: D9, D32, D33, D89, D90, D91, D92, D112, D120, D146, D157, D158, D194, D196, D214, D215, D216, D217, D218, D247, D248,

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D249, D250, D251, D384, D385, DD386, D387, D388, D722, D723, D724, D725, D770, D777, D1122]

~~D28.11 The operator shall conduct source test(s) in accordance with the following specifications:~~

~~The test shall be conducted within 60 days after achieving maximum production rate, but no later than 180 days after initial start up.~~

~~Source test shall be conducted when this equipment is operating at 80 percent or greater of the permitted maximum rated capacity.~~

~~The test shall be conducted to determine and report the mass emission rate in pound per hour for NO<sub>x</sub>, SO<sub>x</sub>, ROG and CO.~~

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

~~[RULE 1303(a)(1) BACT, 5-10-1996; RULE 1303(b)(2) Offset, 5-10-1996; RULE 3004(a)(4) Periodic Monitoring, 12-12-1997]~~

*Note the source tests conducted on 8-18-09 and 10-8-09 (approved by District on 3-17-10) satisfied this PC condition.*

D90.7 The operator shall continuously monitor the H<sub>2</sub>S concentration in the fuel gases before being burned in this device according to the following specifications:

The operator shall use Gas Chromatograph meeting the requirements of 40CFR60 Subpart J to monitor the parameter.

The operator shall also install and maintain a device to continuously record the parameter being monitored.

The operator may monitor the H<sub>2</sub>S concentration at a single location for fuel combustion devices, if monitoring at this location accurately represents the concentration of H<sub>2</sub>S in the fuel gas being burned in this device.

**[40CFR 60 Subpart J, 6-24-2008]**

[Devices subject to this condition: D9, D32, D33, D89, D90, D91, D92, D112, D120, D146, D157, D158, D194, D196, D214, D215, D216, D217, D218, D247, D248, D249, D250, D251, D384, D385, D386, D387, D388, D722, D723, D724, D725, D770, D777, D1122]

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D328.1 The operator shall determine compliance with the CO emission limit(s) either: (a) conducting a source test at least once every five years using AQMD Method 100.1 or 10.1; or (b) conducting a test at least annually using a portable analyzer and AQMD-approved test method. The test shall be conducted when the equipment is operating under normal conditions to demonstrate compliance with CO emission limit(s). The operator shall comply with all general testing, reporting, and recordkeeping requirements in Sections E and K of this permit.

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

[Devices subject to this condition: D9, D32, D33, D89, D90, D91, D112, D120, D146, D157, D158, D194, D196, D214, D218, D247, D248, D251, D384, D386, D387, D388, D722, D723, D724, D725, D770, D777, D810, D812, D1122]

D328.2 The operator shall determine compliance with the CO emission limit(s) either: (a) conducting a source test at least once every five years using AQMD Method 100.1 or 10.1; or (b) conducting a test at least annually using a portable analyzer and AQMD-approved test method. The test shall be conducted when the equipment is operating under normal conditions to demonstrate compliance with CO emission limit(s). The operator shall comply with all general testing, reporting, and recordkeeping requirements in Sections E and K of this permit.

**[RULE 1146, 11-17-2000; RULE 1146, 9-5-2008; RULE 3004(a)(4)-Periodic Monitoring, 12-12-1997; RULE 407, 4-2-1982]**

[Devices subject to this condition: D92, D215, D216, D217, D249, D250, D385]

~~E54.2 The operator is not required to vent this equipment to the following equipment if any of the requirements listed below are met:~~

~~Device ID: C773 [SELECTIVE CATALYTIC REDUCTION SYSTEM]~~

~~Requirement number 1: The heater is in either start-up or shutdown mode.~~

~~Requirement number 2: The SCR inlet temperature is less than 550 Deg F.~~

**[~~RULE 1303(a)(1)-BACT, 5-10-1996]~~**

~~[Devices subject to this condition: D214, D215, D216, D217]~~

~~E54.12 The operator is not required to vent this equipment to the following equipment if all of the requirements listed below are met:~~

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Device ID: C773 [SELECTIVE CATALYTIC REDUCTION]

~~Requirement number 1: Bypass is allowed for activities directly related to repair, maintenance, and the resetting of the damper following a stack damper trip~~

~~Requirement number 2: The CEMS shall be fully operational and certified to the levels of emissions with and without bypass~~

~~Requirement number 3: Total periods of bypass do not exceed 240 hours per year~~

~~Requirement number 4: The operator shall submit an annual report to the District with a summary of the number of hours the SCR was bypassed, and the description of the reason for each bypass. The annual report is due March 1 of each year~~

[RULE 2012, 5-6-2005]

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

The operator shall maintain the SCR bypass stack dampers for heaters D214, D215, D216 and D217 at a fully closed position such that no emissions will be exhausted through the bypass stacks whenever fuel is supplied to the heaters.

The operator shall install and maintain damper limit switches or other equivalent device to accurately indicate the fully closed position of the SCR bypass stack dampers.

The operator shall record the position of the dampers at least once every 15 minutes and any time the damper position changes.

The operator shall install and maintain an automatic fuel shutoff system to cut off the fuel supply to this device whenever any of the bypass stack dampers is not in the fully closed position.

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

[**RULE 2012, 5-6-2005**]

[Devices subject to this condition: D214, D215, D216, D217]

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H23.3 This equipment is subject to the applicable requirements of the following rules or regulations:

Contaminant	Rule	Rule/Subpart
H2S	40CFR60, SUBPART	J

**[40CFR 60 Subpart J, 6-24-2008; CONSENT DECREE, 3-21-2001]**

[Devices subject to this condition: D9, D32, D33, D89, D90, D91, D92, D112, D120, D146, D157, D158, D194, D196, D214, D215, D216, D217, D218, D247, D248, D249, D250, D251, D384, D385, D386, D387, D388, D722, D723, D724, D725, D770, D777]

**COMPLIANCE RECORD REVIEW**

The facility's compliance history for the past 2 years indicates one NOV (P52842) is still pending (see Attachment 1). P52842 was issued to Tesoro on 4-27-10 for multiple violations of Rule 1189(c)(3). An emergency hearing was conducted at the AQMD Hearing Board on 4-28-10 and the facility was denied a variance. Tesoro is expected to be placed under an abatement order by the District to have this compliance issue resolved. Note that the HGU-2 unit has been shutdown since 4-6-10 and is not expected to operate until a variance or order of abatement is granted. See Attachment 2 for details of this NOV.

The source test requirement pursuant to permit condition D28.11 for the subject heaters has been satisfied and the report is contained in the application file for reference.

**BACKGROUND**

The Tesoro Los Angeles Refinery (previously owned and operated by Equilon LLC) performed refinery-wide modifications to comply with state and federal reformulated gasoline (RFG 3) requirements in the early 2000s. The primary objective of these modifications was to change the oxygenate used in the manufacture of gasoline from MTBE to ethanol and produce more alkylate (octane barrel) which is required to meet the RFG 3 Reid Vapor Pressure standard, as well as the benzene and sulfur standards.

As part of the overall RFG 3 project, Permit to Construct A/N 401921 and 401924 were issued on 9-6-02 for modification of the Catalytic Reforming Unit #2 (CRU-2) charge heaters H-501A and H-501B to enable them to operate at their permitted duty of 31.4 MMBTU/hr. The modification consisted of replacing the 6 low NOx burner tips (that were undersized and only allowed a firing duty of 19.32 MMBTU/hr) with John Zink low NOx burner tips, model no. LM-116. In addition, the piping connections between H-501A, H-501B, H-502, Reactor 1 and Reactor 2 were reconfigured to eliminate over-firing conditions and flame impingement on the tubes of H-502 (see Attachment 3). These changes provided the additional heat load imposed on the charge heaters for increased product throughput at the CRU-2 to meet RFG 3 requirements.

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According to Tesoro, the burner modification of H-501A and H-501B was completed as planned and post modification source test was conducted pursuant to permit condition D28.11. Due to on-going issues with test protocols and/or test results, the tests conducted on 8-18-09 and 10-8-09 were finally deemed 'Conditionally Acceptable' by District STE on 3-17-10.

On 5-11-07, Tesoro Refining & Marketing Company filed change of ownership (C/O) applications (A/N 470285, 470286) for these two heaters after completing the purchase of the Los Angeles Refinery from Equilon/Shell. The C/O PCs were issued on 2-25-09. Therefore, this PO evaluation, along with changes made in permit conditions to curtail the use of the SCR bypass stacks without CEMS in CRU-2 (see discussion below on SCR Bypass Operations), will be issued under the C/O A/Ns 470285 and 470286, and A/Ns 401921 and 401924 will be cancelled.

The following tables summarize the fees/applications submitted by Equilon and Tesoro under this evaluation:

**Table 1 – Fee Summary**

A/N	Fee Schedule	Fee Required	Expedited Fee	Total Fees Paid
401921	D	\$2,625.98	0	\$2,625.98
401924	D	\$1,312.99 <sup>1</sup>	0	\$1,312.99
470285	Multiple appls (>34)	\$290.32	0	\$290.32
470286	Multiple appls (>34)	\$290.32	0	\$290.32

<sup>1</sup>50% for identical equipment.

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**Table 2 – AQMD Applications Submitted**

A/N	Equipment	Device ID	Type	Status	Deem Complete Date	Requested Action	PC Issue Date
401921	CRU-2 Heater H-501B	D217	50	26	6-23-02	Replace burner with Low NOx burner	9-6-02
401924	CRU-2 Heater H-501A	D216	50	26	6-23-02	Replace burner with Low NOx burner	9-6-02
470285	CRU-2 Heater H-501A	D216	40	26	6-14-07	Change of ownership	2-25-09
470286	CRU-2 Heater H-501B	D217	40	26	6-14-07	Change of ownership	2-25-09

**SCR BYPASS OPERATIONS**

The CRU-2 platformer charge heater consists of four cabin type heaters that were constructed in the early 70s. The heaters were built as natural draft furnaces with a common radiant and convection section that shared two common flue gas stacks to atmosphere. In the early 80s, modification was made to preheat the combustion air with the installation of a force draft fan, an induced draft fan, heat exchangers and associated ductwork under A/Ns 138193-6. As part of the modification, the two flue gas stacks were blinded off with stack dampers and the flue gas was rerouted through the preheat exchangers and out to atmosphere through a new common stack (S990). SCR control was later installed between the 1<sup>st</sup> stage and 2<sup>nd</sup> stage preheat exchangers to reduce NOx to meet the requirements of Rule 1109 (which was subsequently superseded by Reg XX). As major NOx/SOx sources, the new common stack for the heaters was equipped with CEMS for compliance with Rule 2012 in the early 90s. The old stacks remained in place and operate as “bypass” stacks during emergencies and upset conditions to avert catastrophic explosions when fuel rich conditions arise (oxygen to fuel gas ratio becomes too low). Under bypass operations, the bypass stack dampers open to allow air to quickly enter into the fire box and the flue gas from the heaters exits through the bypass stacks without control (SCR bypassed). In addition, the bypass stacks were used during planned startups and shutdowns within the normal operating cycle of the units. Permit conditions E54.2 and E54.12 subjected the heaters to specific requirements and limitations for bypass operations.

Until recently, it was believed that the bypass stacks were configured such that emissions during SCR bypasses were captured by the CEMS on the new common stack. Requirement no. 2 of permit condition E54.12, which states “The CEMS shall be fully operational and certified to the

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levels of emissions with and without bypass”, was based on this notion. However, it has been determined by District Compliance staff that the existing configuration of the stacks does not enable emissions to be captured by the common stack CEMS whenever the dampers on the bypass stacks are tripped and the SCR is bypassed. Therefore, the heaters are in violation of Rule 2012 for failure to continuously monitor and record NOx emissions every time flue gas is vented through the bypass stacks. Such an incident occurred on 5-20-07 and a Notice of Violation (NOV) P45636 was issued to the facility on 2-5-08 after the discovery.

In lieu of installing CEMS on the bypass stacks, the facility has agreed in a settlement agreement with the District to install an automatic fuel shutoff system to immediately cut off the supply of fuel to the heaters immediately upon opening of the bypass stack dampers (see Attachment 4). The District agreed that the change in permit conditions to reflect this new requirement would be incorporated in the existing heater permits when the H-501A and H-501B PCs (A/N 470285 and 470286) are converted to POs, without the need to submit applications by Tesoro. Hence, these changes have now been incorporated in the permit by the tagging of condition E448.x and the removal of conditions E54.2 and E54.12 from the CRU-2 charge heaters.

### **PROCESS DESCRIPTION**

The CRU-2 upgrades low octane naphthas to high octane blend stocks. H-501A and H-501B are two of the four cabin-type platformer charge heaters (H-501A, H-501B, H-502 and H-503/504) that heat the process stream of hydrocarbons and hydrogen to 960°F before going on to the platforming reactors. Since reforming reactions are endothermic, heat is consumed as hydrogen is removed from the feed and the temperature drops in the reactor. Therefore, in order for the reactions to resume, the feed must be reheated successively between reactors.

Prior to the modification, the product stream was first heated in series through H-501A and H-501B and proceeds to Reactor 1 (V-735). From Reactor 1, the product flows to H-502 for additional heating, after which it proceeds to Reactor 2 (V-736) and then to H-503/504 for additional heating prior to proceeding to final Reactors 3 and 4 (V-737 and V-738).

Post modification, the connection between H-501A and H-501B has been eliminated, sending the product directly from H-501A to Reactor 1. From Reactor 1, the product flows to H-502 where it is heated and sent back to H-501B for additional heating. The discharge of H-502 now goes to the inlet of H-501B rather than to Reactor 2. The discharge of H-501B, which was routed to Reactor 1, now goes to Reactor 2. A schematic of the pre and post modification piping configuration of the reformer heaters is contained in Attachment 3. Reconfiguration of the piping connection between reactors eliminated flame impingement and overfiring conditions for H-502.

### **EMISSIONS**

The maximum firing rate of H-501A and H-501B did not change from this modification. Both heaters remained at a maximum rating of 31.4 MMBTU/hr calculated at an HHV of 1150 BTU/scf. Since the heaters were only firing at a rate of 19.32 MMBTU/hr (due to burner tip orifice size constraints) prior to the modification, the actual fuel flow and thus the actual

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emissions were well below what would be realized if the heaters were firing at its full maximum rating. Hence, the modification to replace the six burner tips with John Zink low NOx burner tips, such that they are capable of firing at the maximum rating of 5.23 MMBTU/hr each (total 31.4 MMBTU/hr), did not affect the maximum potential emissions of the units. Please see PC evaluation for detailed calculations on the emissions impact for the low NOx burner replacement for this project. The emissions are summarized in the table below.

**Table 3 - Emissions Summary**

Air Contaminant	Pre-Modification (31.4 MMBTU/hr)  (lb/day)	Post Modification (31.4 MMBTU/hr at 1150 BTU/scf)			Emissions Change
		E.F (lb/mmscf)	Emissions (NSR 30 day avg)	AEIS	
NOx Controlled	37.7	57.63 <sup>2</sup>	37.7	37.7	0
NOx Uncontrolled	105.6		105.6	105.6	
ROG	4.6	5.5 <sup>3</sup>	3.6	3.6	-1
CO	2.6	5 ppm <sup>4</sup>	2.78	2.78	+0.2
PM	4.92	7.5 <sup>5</sup>	4.92	4.92	0
SOx	17.7	27.01 <sup>6</sup>	17.7	17.7	0

<sup>1</sup>CO, PM & ROG are based on NSR emission factors on form R-2 (see details in Emissions Calcs, Appendix A of PC)

<sup>2</sup>NOx; Based on 2 yrs of CEMS data

<sup>3</sup>ROG; Based on AP-42, 2/98

<sup>4</sup>CO; Facility proposed concentration @3% O<sub>2</sub>

<sup>5</sup>PM; AER default emission factor

<sup>6</sup>SOx; Based on 160ppm H<sub>2</sub>S limit in fuel gas (Subpart J)

Note that there is no impact on emissions from the change in permit conditions to prohibit the use of the SCR bypass stacks without CEMS and reconfiguration of the heater piping to minimize flame impingement on H-502.

## **EVALUATION AND RULE REVIEW**

### ***Part 1 SCAQMD REGULATIONS***

#### **Rule 212 Standards for Approving Permits**

There is no increase in any of the criteria air pollutants listed in subpart (g) of this rule, no increase in toxic air contaminants and the project is not within 1000 feet of a school. Hence, public notice was not required during the PC stage and is not required now for PO issuance under Rule 212.

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**Rule 401 Visible Emissions**

Visible emissions are not expected under normal operating conditions and compliance is expected.

**Rule 402 Nuisance**

Odor problems and nuisance complaints are not expected under normal operating conditions and compliance is expected.

**Rule 404 Particulate Matter – Concentration**

Continued compliance is expected.

**Rule 407 Liquid and Gaseous Air Contaminants**

This rule limits CO emissions to 2000 ppmv, averaged over 15 consecutive minutes. Condition D328.1 or D328.2 is tagged to the heaters and source tests have demonstrated compliance with this limit. Continued compliance with this rule is expected

**Rule 409 Combustion Contaminants**

This rule limits particulate matter emissions to 0.1 gr/cf of gas, averaged over a minimum of 15 consecutive minutes. Source tests have demonstrated compliance with this limit. Continued compliance with this rule is expected.

**Reg IX NSPS**

**Subpart J Standards of Performance for Petroleum Refineries**

The heaters are subject to this regulation as indicated in the Consent Decree issued to Equilon on March 21, 2001. As such, it is required to comply with the 160 ppmv H<sub>2</sub>S limit. Conditions B61.1, D90.7 and H23.3 have been imposed on the heaters to address these requirements. Continued compliance is expected.

**Reg XI**

**Rule 1109 Emissions of Oxides of Nitrogen from Boilers and Process Heaters in Petroleum Refineries**

This facility is not subject to this rule because it is subject to Reg XX as a RECLAIM facility.

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**Rule 1146 Emissions of Oxides of Nitrogen from Industrial, Institutional, and Commercial Boilers, Steam Generators and Process Heaters**

This facility is not subject to this rule because it is subject to Reg XX as a RECLAIM facility.

**Reg XIII NSR**

This rule requires the Executive Officer to deny a Permit to Construct for any new, modified or relocated source which results in an emission increase of any nonattainment air contaminant, any ozone depleting compound, or ammonia, unless BACT is used. This rule also requires modeling and offset (among other requirements) if there is a net increase in any nonattainment air contaminants for any new or modified source. The definition of "Source" in Rule 1302(ao) is "any permitted individual unit, piece of equipment, article, machine, process, contrivance, or combination thereof, which may emit or control an air contaminant. This includes any permit unit at any non-RECLAIM facility and any device at a RECLAIM facility.

Since the heater modification resulted in no increase in nonattainment air contaminants, the requirements under Rule 1303 for BACT, Modeling and Offset are not applicable.

**Rule 1306 Emissions Calculation**

This rule is used as a basis for calculating applicability of Reg XIII as stated in Rule 1301(b) and Rule 1303 as well as offset requirements and ERCs. There is no change in combustion emissions as the heater duty remained the same. Combustion emission calculations in Appendix A of the PC evaluation are only intended to update NSR and AEIS database. The NSR emission was calculated based on the HHV of 1150 BTU/scf. CO, ROG and PM were calculated using R2 factors. SOx emissions were recalculated based on NSPS Subpart J requirement of 160 ppm maximum H2S in the fuel gas. NOx emissions factor is based on Rule 1146 limit.

**Rule 1401 NSR of Toxic Air Contaminants**

The requirements of this rule do not apply since there was no increase in toxic air contaminants.

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**Reg XVII      Prevention of Significant Deterioration (PSD)**

This project did not result in an increase of emissions of any attainment pollutants. However, to ensure compliance with this rule limits, condition A63.4 has been imposed to limit all the sources not to exceed the significant threshold of NOx and SOx emissions. A PSD analysis is not required.

**Reg XX            RECLAIM**  
**Rule 2005        NSR for RECLAIM**

This project did not result in an increase of emissions of RECLAIM pollutants. Therefore, the requirements pursuant to Rule 2005 do not apply. Note the facility currently uses a SCR system to control NOx from the reformer heaters and is considered BACT.

**Rule 2012**      The Tesoro Los Angeles Refinery is a NOx/SOx RECLAIM facility and the subject heaters are major NOx/SOx sources subject to the requirements of RECLAIM. Except during SCR bypass operations when the dampers in the bypass stack are tripped (as previously discussed in this evaluation), the facility complies with the monitoring, recordkeeping and reporting requirements pursuant to Section F and G of the Title V permit. Pursuant to the settlement of NOV P45636, permit condition E448.x has been tagged to all affected CRU-2 heaters in P5/S4 to prohibit the use of the SCR bypass stacks without CEMS by shutting off the fuel supply to the heaters whenever the bypass stack dampers are tripped.

**Reg XXX            TITLE V PERMITS**  
**Rule 3002        Requirements**

The Tesoro Los Angeles Refinery has been designated as a Title V facility. The initial Title V permit was issued on November 23, 2009. Per AQMD guidelines for Title V permits, converting from PC to PO with no impact on emissions is considered an ‘Administrative’ revision. However, the addition of permit condition E448.x and removal of conditions E54.2 and E54.12 (to merely clarify the intent of E54.2 and E54.12 without relaxing any monitoring terms or conditions) elevate this to a ‘Minor’ Title V revision. Pursuant to Rule 3006(b), public notice is not required for a minor Title V revision but the proposed permit and evaluation will be submitted to the EPA for a 45 day review in accordance with REG XXX.

**Rule 3003**      This rule requires the District to deny the issuance of any Title V permit revisions to a facility that is non-compliant with all regulatory requirements unless a valid variance, order of abatement or AOC has been granted by the District Hearing Board.

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As previously discussed in the Compliance Record Review section of this evaluation, Tesoro is expected to be placed under an order of abatement for violation of Rule 1189(c)(3) at the HGU-2. Since this unit is currently shutdown and is not expected to operate until a variance or order of abatement is granted, the facility is considered to be in compliance with all regulatory and permit requirements. Therefore, the issuance of Title V permit revisions for the subject POs is not prohibited by this rule.

**Part 2**

**STATE REGULATIONS**

***California Environmental Quality Act (CEQA)***

As discussed in the Background section of this evaluation, the modification of the H-501A and H-501B heaters was part of the overall RFG 3 project. A CEQA analysis was performed because of the project's potential adverse impact to the environment. In accordance with CEQA, the facility went through the various stages of CEQA requirements including Initial Study, Environmental Impact Report (EIR), public review, and comment periods. The facility complied with all the applicable mitigation measures stipulated in the Statement of Findings, Statement of Overriding Consideration, and Mitigation Monitoring Plan in the final EIR report (certified by AQMD on 10-15-01).

**DISCUSSIONS AND CONCLUSIONS:**

Based on the foregoing evaluation, the operation of heaters H-501A and H-501B (with the change in permit conditions discussed above for the bypass stacks) will comply with all applicable AQMD, State and Federal Rules and Regulations. It is recommended that a Permit to Operate be issued for H-501A and H-501B in Section D of the Title V Permit, subject to the conditions listed in the 'CONDITIONS' section of this evaluation.

The following is a summary of the permit actions under this evaluation:

A/N	Permit Unit	Device ID	Recommended Action
401921	CRU-2 Heater, H-501B	D217	Cancel PC
401924	CRU-2 Heater, H-501A	D216	Cancel PC
470285	CRU-2 Heater, H-501A	D216	Approve PO, incorporate change of conditions for bypass stacks
470286	CRU-2 Heater, H-501B	D217	Approve PO, incorporate change of conditions for bypass stacks