



SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

STATIONARY SOURCE COMPLIANCE DIVISION

APPLICATION PROCESSING AND CALCULATIONS

PAGES
27 + Attachments

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APPL. NO.
469915

DATE
02/05/10

PROCESSED BY
Hanea Cox

CHECKED BY

**PERMIT-TO-OPERATE
NO PERMIT TO CONSTRUCT**

APPLICANT'S NAME: TESORO REFINING & MARKETING CO.

MAILING ADDRESS: P.O. BOX 817
WILMINGTON, CA 90748

EQUIPMENT ADDRESS: 2101 E. PACIFIC COAST HWY
WILMINGTON, CA 90748
FACILITY ID: 800370

EQUIPMENT DESCRIPTION:

Additions to the equipment description are **bold** and **underlined**. Deletions are ~~struckthrough~~.

Section D of Facility Permit, ID # 800436

Description	ID No.	Connected To	RECLAIM Source Type	Emissions* And Requirements	Conditions
Process 4: HYDROTREATING					P13.1
SYSTEM 5: HYDROTREATING UNIT NO. 3					S13.4, S15.2, S15.3, S15.13
VESSEL, SEPARATOR, HIGH, PRESSURE, V-767, HEIGHT: 71 FT; DIAMETER: 6 FT 6 IN A/N: 346366 <u>469915</u>	D147				
DRUM, V-773, SOUR WATER, LENGTH: 26 FT 6 IN; DIAMETER: 4 FT 6 IN A/N: 346366 <u>469915</u>	D159				
DRUM, SURGE, V-774, CONDENSATE, HEIGHT: 9 FT 6 IN; DIAMETER: 3 FT 6 IN A/N: 346366 <u>469915</u>	D148				



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Description	ID No.	Connected To	RECLAIM Source Type	Emissions* And Requirements	Conditions
REACTOR, V-768/769, 2 TOTAL, HEIGHT: 28 FT; DIAMETER: 7 FT A/N: 346366 <u>469915</u>	D1189				
VESSEL, SEPARATOR, LOW PRESSURE, V-770, HEIGHT: 25 FT 6 IN; DIAMETER: 4 FT 6 IN A/N: 346366 <u>469915</u>	D149				
<u>VESEL, FILTER, AVJET, V-1507, HEIGHT: 15 FT; DIAMETER: 12 FT</u> A/N: <u>469915</u>	<u>DXX</u> <u>X</u>				
<u>VESEL, SEPARATOR, AVJET, V-1508/1509, 2 TOTAL, HEIGHT: 6 FT 9 IN; DIAMETER: 12 FT 3/4 IN</u> A/N: <u>469915</u>	<u>DXX</u> <u>X</u>				
ACCUMULATOR, V-771, H2S STRIPPER OVERHEAD, LENGTH: 26 FT 6 IN; DIAMETER: 2 FT 6 IN A/N: 346366 <u>469915</u>	D1191				
DRUM, CHARGE, V-1471, DIESEL, HEIGHT: 17 FT 6 IN; DIAMETER: 8 FT 6 IN A/N: 346366 <u>469915</u>	D153				
COLUMN, STRIPPER, V-1475, H2S, HEIGHT: 86 FT 6 IN; DIAMETER: 7 FT A/N: 346366 <u>469915</u>	D155				
COMPRESSOR, C-86, RECYCLE GAS A/N: 346366 <u>469915</u>	D1194				H23.4
COMPRESSOR, C-77, RECYCLE GAS A/N: 346366 <u>469915</u>	D156				H23.4
FUGITIVE EMISSIONS, MISCELLANEOUS A/N: 346366 <u>469915</u>	D1448			HAP: (10) [40CFR 63 SUBPART CC, #5A, 5-25-2001]	H23.16

- * (1) Denotes RECLAIM emission factor
 (3) Denotes RECLAIM concentration limit
 (5)(5A)(5B) Denotes command and control emission limit
 (7) Denotes NSR applicability limit
 (9) See App B for Emission Limits

- (2) Denotes RECLAIM emission rate
 (4) Denotes BACT emission limit
 (6) Denotes air toxic control rule limit
 (8)(8A)(8B) Denotes 40 CFR limit (e.g. NSPS, NESHAPS, etc.)
 (10) See Section J for NESHAP/MACT requirements

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CONDITIONS

PROCESS CONDITIONS

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

Contaminant	Rule	Rule/Subpart
Benzene	40CFR61, SUBPART	FF

[40CFR 61, SUBPART FF, 12-4-2003]

SYSTEM CONDITIONS

S13.4 All devices under this system are subject to the applicable requirements of the following rules or regulations:

Contaminant	Rule	Rule/Subpart
VOC	District Rule	1123

[RULE 1123, 12-7-1990]

[Systems subject to this condition: Process 1, System 1, 2; Process 2, System 1, 3, 4, 6, 7, 10; Process 3, System 1, 2, 4, 5; Process 4, System 1, 3, 5, 7, 9; Process 5, System 1, 3, 5; Process 6, System 1, 3; Process 8, System 1; Process 9, System 1, 2, 3, 4; Process 12, System 5, 8; Process 19, System 3; Process 21, System 1, 2, 3, 4]

S15.2 The vent gases from all affected devices of this process/system shall be vented as follows:

This process/system shall not be operated unless the blowdown flare system is in full use and has a valid permit to receive vent gases from this system.

All emergency vent gases shall be directed to the refinery flares (process 21, system 1) or flare gas recovery system (process 21, system 4) which may also include DCU Blowdown Compressor C-137 (device D68) except Devices IDs D898, D20, D910, D1268, D1269, D1280, D93, D94, D96, D1283, D1284, D1288, D1292, D219, D226,

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D1212, D275, D1256, D375, D928, D1267 & D916 that vent to the atmosphere.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(b)(2)-Offset, 5-10-1996]

[Systems subject to this condition: Process 1, System 1, 2; Process 2, System 1, 3, 4, 6, 10; Process 3, System 1, 2, 5; Process 4, System 1, 3, 5, 7, 9; Process 5, System 1, 3, 5; Process 6, System 1, 3; Process 8, System 1; Process 9, System 1, 2, 3; Process 12, System 8; Process 19, System 3; Process 21, System 4]

S15.3 The vent gases from all affected devices of this process/system shall be vented as follows:

All vent gases under normal operating conditions shall be directed to a vapor recovery system (process 21, System 3) consisting of compressors, D641, D642, D643, and/or D644, which can be operated independently to maintain a system vacuum that efficiently collects all vented gases or the flare gas recovery system (Process 21, System 4).

This process/system shall not be operated unless the vapor recovery system (process 21, system 3) or flare gas recovery system (process 21, system 4) is in full use and has a valid permit to receive vent gases from this system.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(b)(2)-Offset, 5-10-1996]

[Systems subject to this condition: Process 1, System 2; Process 2, System 3, 4, 6; Process 3, System 2, 4; Process 4, System 1, 3, 5, 7; Process 5, System 1, 3, 5; Process 6, System 1; Process 8, System 1; Process 9, System 2; Process 21, System 4]

S15.13 The vent gases from all affected devices of this process/system shall be vented as follows:

All sour gases under normal operating conditions shall be directed to the fuel gas treating system (Process 4, System 9) or to the scrubber located in Process 8, System 1.

This process/system shall not be operated unless the fuel gas treating system or the scrubber is in full use and has a valid permit to receive vent gases from this system.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(b)(2)-Offset, 5-10-1996]

[Systems subject to this condition: Process 4, System 1, 3, 5]

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DEVICE CONDITIONS

H23.4 This equipment is subject to the applicable requirements of the following rules or regulations:

Contaminant	Rule	Rule/Subpart
VOC	40CFR60, SUBPART	GGG

[40CFR 60 Subpart GGG, 6-2-2008]

[Devices subject to this condition: D68, D140, D156, D176, D333, D377, D642, D901, D918, D1082, D1194, D1338]

H23.16 This equipment is subject to the applicable requirements of the following rules or regulations:

Contaminant	Rule	Rule/Subpart
VOC	District Rule	1173
VOC	40CFR60, SUBPART	GGG

[RULE 1173, 5-13-1994; RULE 1173, 2-6-2009; 40CFR 60 Subpart GGG, 6-2-2008]

[Devices subject to this condition: D1365, D1380, D1381, D1384, D1392, D1446, D1447, D1448, D1449, D1453, D1455, D1456, D1458, D1562]

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BACKGROUND:

Equilon Enterprise, LLC Shell Oil Products (Company, ID # 800370) operated a petroleum refining facility in the Los Angeles area. On May 10, 2007, Tesoro Refining and Marketing Company purchased Equilon Enterprises, LLC Shell Oil Products US. As a result of the purchase, Tesoro submitted several change of operator applications in order to operate under its new Facility Identification # 800436. These change of operator applications were processed and a new Facility Permit was issued to Tesoro on April 22, 2009. This issued Facility Permit to Tesoro replaced the Equilon Facility Permit. Therefore, Equilon will be referred to as Tesoro. The facility is designated as a RECLAIM and Title V facility. The initial Title V permit for this facility was issued effective on November 23, 2009.

Application number 449120 was submitted to the District on September 23, 2005. Equilon submitted this application in order to add an existing Avjet clay filter (V-1507) and Avjet separator vessels (V-1508/1509) to their current Facility Permit under the Hydrotreating Unit No. 3 (HTU No. 3). These pieces of equipment were NOT previously listed in Equilon's command and control permit (permit No. 37927, A/N 157830) or any other previous permits as part of the HTU No. 3. The facility could not supply supporting documentation to prove that these pieces of equipment existed on or before the Permit to Construct dated 10/22/87 was issued for AN 157830. Therefore, this application was processed as a Permit to Operate (no Permit to Construct) Alteration with a higher fee assessed for failing to obtain a Permit.

However, AN 449120 initially submitted by Equilon will be canceled and all fees retained. All contents of AN 449120 will be consolidated with Tesoro Change of Operator application number 469915. The modifications described above will be made to Tesoro's facility permit under Change of Operator application number 469915.

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PERMIT HISTORY:

Table 1 lists the permit history submitted. The history of this heater shows it is to be considered pre-NSR.

Table 1: Application List

<u>AP Number</u>	<u>Date Received</u>	<u>A/N Type</u>	<u>A/N Status</u>	<u>Equipment ID</u>	<u>Previous AP Number</u>	<u>Previous AP Status</u>	<u>Description</u>
469915	05/15/07	40	21	HTU No. 3	449120	Active	Change of Operator
449120	09/23/05	50	21	HTU No. 3	346643	Active	Add Avjet Filter (V-1507, Avjet Separator Vessels (V-1508/1508) to HTU No. 3
346366	08/21/98	40	31	HTU No. 3	157830	Active	Change of Operator from Texaco to Equilon
157830	06/18/87	20	31	HTU NO.3	136729	Inactive	Modification of Hydrotreating Unit No. 3 to improve operating efficiency by updating heat exchangers and fractionation; replacement of pumps and compressors, and installation of surge drum. (V-767, V-773, V-744, V-768, V769, V770, V-771, V-779, V781, V783, V1471, V1472, and V-1473)
136729	08/30/85	40	31	HTU No. 3	A71484	Inactive	Change of Ownership
A71484	12/31/99	0	31	HTU No.3		Inactive	Permit to Construct

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COMPLIANCE RECORD REVIEW:

In the District’s Compliance Tracking System, the following were found during the two year period from January 1, 2008 through January 30, 2010.

NOVs/ NCs

There were no open NOVs/NCs issued against the HTU No. 3 in the District compliance/enforcement database. Please refer to Attachment I for a print out of NOV and NC results.

Complaints

There were no complaints logged involving the HTU No. 3 or its components in the District compliance/ enforcement database.

FEE EVALUATION:

The following fee was submitted for AN 449120 by Equilon Per Rule 301 (July 1, 2005); For AN 469915 Rule 301 FY 2006-2007:

A/N	Equipment	Type	Fee Schedule	Fee Required, \$	Plus Penalty, \$ (50%)	Total Fee Required, \$	Total Fees Paid, \$
449120	Hydrotreating Unit No. 3	50	E	\$3,868.47	\$1,934.24	\$5,802.71	\$5,802.71
469915	Hydrotreating Unit No. 3	40	E	\$290.30	\$0.00	\$290.32	\$290.32

PROCESS DESCRIPTION:

The function of the HTU No. 3 at Tesoro is to 1) remove sulfur from distillates, 2) pre-treating certain feeds in order to remove catalyst poison, 3) saturate double bonds, and 4) conversion of feed to lighter products.

Tesoro states that the Avjet Clay Filter’s (V-1507) role in the HTU No. 3 is to remove the polar compounds that attract water droplets which allow the water to separate from the fuel easily. Avjet Separators (V-1508/1509) are filters that are used to test for particulates in the product fuel. Refer to Applicant Submitted Material for P& ID for the filters.

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Emissions Calculations:

Emissions from the above filters will result from fugitive components. Tesoro provided the following fugitive component counts represented below in Table 2 and Table 3 on the following page:

Table 2- Fugitive Emissions Calculations V-1507

New Source Unit with BACT		Service	Number of Sources	Refinery Emission Factor ¹ (lb/yr)	Hourly Emissions (lbs/hr)	Annual Emissions lbs/yr
Valves	Sealed Bellows	Gas/Vapor and Light Liquid	5	0	0	0.0
	SCAQMD Approved I & M Program	Gas/Vapor	0	23	0	0.0
		Light Liquid ³	0	19	0	0
		Heavy Liquid ²	28	3	0.009589	84
Pumps	Sealless Type	Light Liquid	0	0	0	0.0
	Double Mechanical Seals or Equivalent Seals	Light Liquid	0	104	0.0	0.0
	Single Mechanical Seal	Heavy Liquid	0	80	0.0	0.0
Compressors		Gas/Vapor	0	514	0.0	0.0
Flanges (ANSI B 16.5-1988)		All	1	1.5	0.00017123	1.5
Pressure Relief Valves (routed to flare)		All	3	0.00	0.0	0.0
Process Drains with P-Trap or Seal Pot		All	0	80	0	0
Totals					0.00822	85.5

- Note:
- (1) District's Default Emission Factor, 500 ppm monthly I & M with BACT
 - (2) Heavy Liquid components are defined as components with liquid streams that contain less than or equal to 10 percent by volume of volatile organic compounds (VOC).
 - (3) Light liquid components are defined as components with liquid streams that contain more than 10 percent of VOC by volume.

Per Equilon, there are no Pressure Relief Valves (PRVs) that vent to the atmosphere. All PRVs for V-1507 and V-1508/1509 (on the following page) are routed to the flare. Refer to email dated 1/27/2010 from Royann Winchester and Equilon's HT3's P& ID Avjet Filers for more details.

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Table 3- Fugitive Emissions Calculations V-1508 and V-1509

New Source Unit with BACT		Service	Number of Sources	Refinery Emission Factor ¹ (lb/yr)	Hourly Emissions	Annual Emissions lbs/yr
Valves	Sealed Bellows	Gas/Vapor and Light Liquid	5	0	0	0.0
	SCAQMD Approved I & M Program	Gas/Vapor	0	23	0	0.0
		Light Liquid ³	0	19	0	0.0
		Heavy Liquid ²	10	3	0.00342	30
Pumps	Sealless Type	Light Liquid	0	0	0	0.0
	Double Mechanical Seals or Equivalent Seals	Light Liquid	0	104	0.0	0.0
	Single Mechanical Seal	Heavy Liquid	0	80	0.0	0.0
Compressors		Gas/Vapor	0	514	0.0	0.0
Flanges (ANSI B 16.5-1988)		All	28	1.5	0.00479	42
Pressure Relief Valves (routed to flare)		All	0	0	0.0	0.0
Process Drains with P-Trap or Seal Pot		All	0	80	0	0
			Totals		0.00976	72

- Note:
- (1) District's Default Emission Factor, 500 ppm monthly I & M with BACT
 - (2) Heavy Liquid components are defined as components with liquid streams that contain less than or equal to 10 percent by volume of volatile organic compounds (VOC).
 - (3) Light liquid components are defined as components with liquid streams that contain more than 10 percent of VOC by volume.

The two filters are subject to NSR since Tesoro could not provide proof or supporting documentation that these filters existed on or before the Permit to Construct dated 10/22/87 for AN 157830, thus, this permit unit is subject to NSR. For New Source Review (NSR) purposes, the net emissions increase is calculated pursuant to Rule 1306(b).

It is estimated that the VOC emissions increase is 0.43 lbs/day. Thus BACT, is not applicable since the emission increase does not exceed the 1.0 lb/day BACT applicability set forth in SCAQMD Guidelines. See Regulation XIII discussion below for a BACT analysis.

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Rule 1401 Analysis

Based on the Fugitive counts provided, VOC emissions from Filter V-1507 and V-1508/1509 were calculated to be 85.5 lbs/yr and 72 lbs/yr VOC respectively. For the Toxic Analysis, the cumulative Maximum Individual Cancer Risk (MICR), cancer burden, chronic health index (HI), and acute health index (HIA) are calculated in order to determine whether these vessels comply with the risk limits specified in Rule 1401. Since these units belong to the same permit unit, each risk is cumulative.

For Carcinogenic and/or chronic compounds:

The toxic components of the materials processed by the Avjet Filters were specified in a Rule 1401 Risk Assessment provided by Tesoro. See Attachment III for Tesoro’s Tier 1 Screening Emission Levels. The Pollutant Screening Index for each pollutant (PSI_p) is calculated using the equation below,

$$PSI_p = Qyr_p / PSL_p$$

The Qyr is calculated from the annual emissions, taken from Appendices A & B, Fugitive Emissions Calculations for each device, for each Toxic Air Contaminant (TAC). For Tier 1, both device’s TAC emissions are compared to the Pollutant Screening Levels (PSL) for each contaminate in Table 1 A of **Assessment Procedures for Rule 1401 and 212, Version 7.0 (Latest Version)** Procedures, Equations, and Assumption on or after July 1, 2005. Since Equilon states that the nearest offsite receptor is 450 meters from the source, a distance of 100 meters were used for PSLs. Refer to Appendix A and Appendix B for Tier 1 Chronic Screening Levels for each device.

The Application Screening Index (ASI) is the sum of each individual Pollutant Screening Indices (PSI_p) for all chronic and carcinogenic pollutants. In order to PASS Tier 1, the Cumulative ASI cannot exceed one (1).

$$ASI_{\text{cancer and/or chronic}} = \sum PSI_p$$

Since the Cumulative ASI for V-1507 and V-1508/1509 does not exceed 1, this permit unit **PASSES** Tier 1 for Chronic compounds; therefore, Tier 2 Assessment is not required.

For Acute Compounds

The Pollutant Screening Index (PSI_s) is calculated for each acute compound below. For this calculation, Qhr is based upon maximum hourly emissions (lb/hr). The equation used for this calculation is

$$PSI_p = Qhr / PSL_p$$

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The calculations for both devices are displayed in Appendices C and D respectively.

The summation of each individual PSI_p is equal to the Application Screening Index (ASI) for all acute pollutants. In order to pass Tier I, the cumulative ASI cannot exceed one (1). The cumulative Acute ASI for both devices does not exceed one; therefore, they both **PASS** Tier 1 Assessment and a Tier 2 Assessment **is not** required. Also, since the emission rates for both devices are below the screening level, it can be assumed that the cancer risk is less than one in one million and no further screening is necessary.

RULE EVALUATION

Part 1 SCAQMD REGULATIONS/RULES

Rule 212- Standards for Approving Permits and Issuing Public Notice, Nov.14, 1997

This permit unit does not constitute a significant project because (1) the unit will not be located within 1000 feet of a school; (2) the emissions increase of +0.43 lbs/day does not exceed the daily maximum specified in subdivision (g) of this rule (30 lbs/day); and (3) the modified permit unit does not have an increased cancer risk greater than, or equal to one in one million (1×10^{-6}) during a lifetime of 70 years or pose a risk of nuisance. Compliance with this rule has been demonstrated.

Rule 401 – Visible Emissions, Amended Nov. 9, 2001

Visible emissions are not expected under normal operating conditions. Compliance is expected.

Rule 402 – Nuisance, Adopted May 7, 1976

Odors or nuisance complaints are not expected under normal operating conditions. Compliance with this rule is expected.

Rule 404- Particulate Matter-Concentration, Feb. 7, 1986

This rule requires particulate matter discharged into the atmosphere to be less than the standard listed in Table 404(a) of this rule. The two vessels will not emit any Particulate Matter; therefore, this rule is not applicable.

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Rule 405 – Particulate Matter- Weight, Feb. 7, 1986

This rule requires that no person is to discharge any solid particulate matter into the atmosphere from any source in excess of the rate show in Table 405(a) of this rule. The two vessels will not increase mass Particulate Matter emissions; therefore, this rule is not applicable.

Rule 1123- Refinery Process Turnarounds, Amended Dec. 7, 1990

Rule 1123 sets forth requirements for vessels during refinery process turnarounds. The vapors released from any depressurized vessel should be collected and contained to be used for fuel or sent to a gas disposal system until the pressure in the vessel is below 5 psig, or within 10% above minimum gauge pressure at which the vapors can be collected, whichever is lower. This rule also requires submittal of a displacement gas plan descriptions and recordkeeping requirements.

The additions of the two aforementioned vessels are subject to Rule 1123 requirements. The two Avjet filters will be subject to the requirements set forth in this rule during process turnaround and shall be included in Equilon/Tesoro’s displacement gas plan descriptions and recordkeeping requirements. These two vessels fall under System Condition S13.4 which requires compliance with this rule. Continued compliance is expected.

Rule 1173 – Fugitive Emissions of Volatile Organic Compounds, Amended Dec. 6, 2002

Rule 1173 categorizes leak types and stipulates maintenance & reporting requirements for fugitive components at refineries, chemical plants, oil and gas production fields, natural gas process plants and pipeline transfer stations. Fugitive components are defined as valves, pumps, compressors, pressure relief valves, and other components from which fugitive VOC emissions may emanate.

The addition of the two vessels will introduce many new fugitive components that are subject to Rule 1173. The fugitive components will be subject to the leak, identification, operator inspection, maintenance, and recordkeeping and reporting requirements. Tesoro shall include new components into their inspection & repair/maintenance (I&M) program. Thus, continued compliance is expected.

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REGULATION XIII – *New Source Review, Dec. 6, 2002*

The Hydrotreating Unit No. 3 is a post-NSR unit since it was constructed after 1976. The addition of the two filters will cause an estimated emission increase of +0.43 lb/day. Therefore, the requirements of this regulation do not apply.

Rule 1303(a) The proposed project is exempt from Best Available Control Technology (BACT) fugitive components. BACT is not required since the total VOC emissions are less than 1 lb/day.

Rule 1303(b) Rule 1303(b) specifies that a Permit to Construct for any new or modified source which results in a net emissions increase of any nonattainment air contaminant at a facility shall be denied unless the requirements specified in 1303(b)(1) through (b)(5) are met:

(b)(1) Modeling There will be no increase in NO_x, CO, and PM₁₀; therefore, modeling is not required. Although there is an increase in VOC, modeling for VOC is not required.

(b)(2) Emissions Offsets Offsets are not required for this project since the emissions increase does not exceed 0.50 lbs/day.

(b)(3) Sensitive Zone Requirements Tesoro is located in Zone 1 but is not required to obtain ERCs. Therefore, the requirement of this subpart does not apply.

(b)(4) Facility Compliance As of 1/30/2010, Tesoro has no outstanding NOV_s/NC_s. The facility is expected to comply with all applicable Rules and Regulations of the AQMD.

(b)(5) Major Polluting Facilities A major polluting facility or a major modification at an existing major polluting facility shall comply with the requirements of this paragraph. This refinery is not a new major polluting facility, and this project is not considered a major modification. Rule 1302(r) defines (in part) a major modification as any modification at an existing major polluting facility that will cause;

(1) an increase of one pound per day or more, of the facility’s potential to emit NO_x or VOCs. There is an emissions increase of + 0.43 lb/day of VOC; therefore, the requirements in this subpart do not apply.

- (A) Since a CEQA analysis is not required, this project is exempt from requiring an Alternative Analysis per Rule 1303(b)(5)(D)(i).
- (B) The facility is not required to provide a Statewide Compliance Letter.
- (C) This project does not have a net emission increase of 15 tons/yr of

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PM₁₀ or 40 tpy of NO_x. Therefore, this requirement does not apply.

- (D) The expected impacts of the project on the environment are not significant; therefore, a CEQA analysis is not required.

As a result, the facility has satisfied the requirements of this regulation and is expected to comply.

REGULATION XIV- *New Source Review of Toxic Air Contaminants, March 7, 2008*

This rule requires permit applicants to assess the cancer risk due to the cumulative emission impacts of new/modified sources in their facility.

Requirements- Rule 1401 contains the following requirements:

MICR, without T-BACT:	≤ 1 in one million (1.0 x 10 ⁻⁶)
MICR, with T-BACT:	≤ 10 in 1 million (1.0 x 10 ⁻⁵)
Cancer Burden:	≤ 0.5
Maximum Chronic Hazard Index:	≤ 1.0
Maximum Acute Hazard Index:	≤ 1.0

The emission increases from this project contain toxic compounds, which are subject to Rule 1401. Upon analysis of each toxic component, the emission rates pass Rule 1401's screening levels; therefore, this permit unit is expected to comply with the allowable risk of toxic emission. For a more details, please refer to Rule 1401 Analysis on page 11.

- (d)(1)(A) Since the emission rates from this project are below the screening levels, the MICR values are less than one in one million.
- (d)(1)(B) Not applicable.
- (d)(1)(C) Since the MICR is not greater than one in one million, the cancer burden is not greater than 0.5.
- (d)(2) Since the emission rates from this project are below the screening levels, the Chronic Hazard Index is less than 1.0.
- (d)(3) Since the emission rates from this project are below the screening levels, the Acute Hazard Index is less than 1.
- (d)(4) Since the residential MICR value is below one in one million, the risk per year is less than 1/70th of this value.
- (d)(5) Not applicable since the permit conditions are not pursuant to Rule 1401.
- (d)(6) Pursuant to Section 112(g) of the Federal Clean Air Act (CAA), no person shall begin construction or reconstruction of a major stationary source emitting hazardous air pollutants listed in Section 112(b) of the CAA, unless the source is constructed with T-BACT and complies with all other applicable requirements,

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including definitions and public noticing. The modification to the Hydrotreating Unit is not considered construction or reconstruction of a major stationary source. Therefore, the requirements of Federal New Source Review for Toxics will not apply.

Therefore, the facility has satisfied the requirements of this regulation and is expected to comply.

REGULATION XVII- *Prevention of Significant Deterioration (PSD)*

As of July 25, 2007, the USEPA signed a new Limited PSD Delegation agreement with the SCAQMD. SCAQMD now has the PSD responsibility for all new PSD sources and all modifications to existing PSD sources where the applicant is requesting to use SCAQMD’s existing Regulation XVII to determine PSD applicability for a modification (and not the recent calculation methodology adopted by EPA as part of the NSR Reform).

A PSD is not applicable for this proposed project since the District is not in attainment for Ozone of which VOC is a reactant and a pollutant from this modification.

REGULATION XX- *Reclaim, May 6, 2005*

Tesoro is a RECLAIM facility. Therefore, it is subject to Reg XX. Since this permit action will not result in an emission increase in RECLAIM pollutants, there are no RECLAIM requirements applicable to this modification.

REGULATION XXX- *Title V*

Rule 3001 – Applicability

3001(a): Having emissions greater than that specified in the table in the rule, Tesoro is considered a Title V facility. On November 23, 2009, Tesoro’s initial Title V permit became effective.

Rule 3000 – General

3000(b)(6) This project is considered a “De Minimis Significant Permit Revision” because the installation of this equipment results in an emissions of increase is 0.43 lbs/day. However, the modification of this permit unit does not trigger any new or additional requirements to NSPS or NESHAP. This revision is a permit to operate for an existing permit unit previously subject to NSPS and NESHAP. This permit unit also meets the requirements set forth in 3000(b)(12)(A)(i)-3000(b)(12)(A)(ix) of this rule for “Minor Permit Revision”.

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Also, the cumulative emission increase is not greater than the following thresholds:

<u>Air Contaminant</u>	<u>Daily Maximum in Pounds Per Day</u>
HAP	30
VOC	30
NO _x	40
PM ₁₀	30
SO _x	60
CO	220

Facility *De Minimus* Emissions Accumulation
(as of Initial Title V Issuance, November 23, 2009)

Air Contaminant	Existing	Additional due to this project	Total
VOC	0 lb/day	0.43 lb/day	0.43lb day

Rule 3003- EPA Review

3003(j): This revision requires a 45-Day EPA review, but not public participation. SCAQMD will submit this application to the EPA Administrator

Rule 3005-Permit Revisions

3005(e): The modification of this permit unit results in an emissions increase of 0.43 lb/day of VOC. According to the permit revisions described in paragraph (b)(6) of Rule 3000, this permit revision is a De Minimis Significant Permit Revision. As a result, this application will be submitted to EPA for review.

Therefore, the requirements of this regulation have been met and Tesoro is expected to continue to comply.

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Part 2 STATE REGULATIONS

California Environmental Quality Act (CEQA)

CEQA requires that the environmental impacts of proposed projects be evaluated and that feasible methods to reduce, avoid, or eliminate identified significant adverse impacts of these projects are considered. The CEQA Applicability Form (400-CEQA) indicates that the project does not have any impacts which trigger the preparation of a CEQA document.

A significant project^a is one associated with the emissions levels listed below, during the operation phase of the project:

CO 550 lbs/day
VOC 55 lbs/day
NOx 55 lbs/day
SOx 150 lbs/day
PM₁₀ 150 lbs/day

This application is to place two vessels into service with minor fugitive emission increases and the expected impacts of the project on the environment are not significant: therefore, a CEQA analysis is not required.

Part 3 FEDERAL REGULATIONS

40CFR Part 60 - NEW SOURCE PERFORMANCE STANDARDS (NSPS)

The Hydrotreating Unit is already an “affected facility” and is modified as defined in NSPS. According to 40CFR Part 60 Subpart A- General Provisions: §60.2 Definitions, *modification* is defined as “any physical change in, or change in the method of operation of, an existing facility which increases the amount of any pollutant (to which a standard applies) emitted into the atmosphere by that facility or which results in the emission of any air pollutant (to which a standard applies) into the atmosphere not previously emitted.”

Therefore, NSPS’ standards apply.

^aSource: SCAQMD CEQA Handbook (SCAQMD, 1993)

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40CFR Part 60 Subpart GGG-*Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries for which Construction, Reconstruction, of Modification Commenced After January 4, 1983, and on or Before November 7, 2006*

§60.590 Applicability and designation of affected facility. In accordance with §60.590(b), any affected facility (petroleum refinery) that commences construction or modification after January 4, 1983 and on or before November 7, 2006 is subject to the requirements of this subpart.

Since the Hydrotreating Unit has been subject to Subpart GGG, it will continue to be subject to this regulation.

§60.592 Standards.

(a) The facility shall comply with the requirements of §§60.482-1 to §60.482-10 as soon as practicable, but no later than 180 days after initial startup. §§60.482-1 to §60.482-10 refers to Subpart VV- Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry and sets standards for the following:

- §60.482-1 Standards: General
- §60.482-2 Standards: Pumps in light liquid service
- §60.482-3 Standards: Compressors
- §60.482-4 Standards: Pressure relief devices in gas/vapor service
- §60.482-5 Standards: Sampling connection systems
- §60.482-6 Standards: Open-ended valves or lines
- §60.482-7 Standards: Valves in gas/vapor service and in light liquid service
- §60.482-8 Standards: Pumps and valves in heavy liquid service, pressure relief devices in light liquid or heavy liquid service or connectors.
- §60.482-9 Standards: Delay of repair
- §60.482-10 Standards: Closed vent systems and control devices

All new fugitive components in VOC service are expected to meet the equipment standards and monitoring requirements in §§60.482-1 to §60.482-10. In general, the equipment leak inspection and monitoring requirements of this regulation have been incorporated into Tesoro's Inspection and Monitoring Program for fugitive emissions. All new piping components associated with the equipment will be monitored on a monthly and quarterly basis by refinery personnel. It is expected that Tesoro will

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continue to comply with the inspection, maintenance, and recordkeeping requirements of this rule.

(b) The facility may elect to comply with the requirements of §60.483- to §§60.483-2.

- §60.483-1 Alternative standards for valves—allowable percentage of valves leaking.
- §60.483-2 Alternative standards for vales – skip period leak detection and repair.

Therefore, Tesoro may choose between two alternative monitoring plans for valves: allowable percentage of valves leaking or skip period leak detection and repair. Tesoro shall notify the EPA before implementing one of these alternative work practices.

(c) The facility may apply to EPA for a determination of equivalency for any means of emission limitation that achieves a reduction in emissions of VOC at least equivalent to the reduction in emissions of VOC achieved by the controls required in this subpart. In doing so, Tesoro shall comply with the requirements of §60.484 (Equivalence of means of emissions limitation).

(d) The facility shall comply with the provisions of §60.485 (Test methods and procedures) except as provided in §60.593 (Exemptions found in Subpart GGG). Tesoro shall conduct all monitoring using EPA Method 21 as stated in §60.485(b)(1).

(e) The facility is required to comply with the provisions of §60.486 (Recordkeeping requirements) and §60.487 (Reporting requirements). The refinery will be required to submit semiannual reports to the EPA beginning six months from initial startup with the information identified in §60.487(b) for the initial report and §60.487(c) for the subsequent semiannual reports.

Permit condition H23.16 has been previously tagged to the Fugitive Emissions device D1448 noting that all affected fugitive components are subject to 40CFR60, Subpart GGG. The facility is expected to continue to comply with this Subpart.

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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*

The Hydrotreating Unit is exempt from Subpart GGGa since the modifications commenced before November 7, 2006.

40CFR Part 63 Subpart CC-NATIONAL EMISSIONS STANDARDS FOR HAZARDOUS AIR POLLUTANTS (NESHAPS)

National Emissions Standards for Hazardous Air Pollutants for Petroleum Refineries Applicability: Tesoro Refining and Marketing Company meets both criteria of subparagraph (a)(1) and (a)(2) of this regulation. Basically, this refinery emits 25 tons or more of hazardous air pollutants (HAP) and is considered a major source as defined in section 112(a) of the Clean Air Act. Secondly, this refinery emits HAPs listed in Table 1 of this regulation.

This regulation refers to 40CFR 60 Subpart VV, which has been evaluated above in Subpart GGG. §63.640(q) allows SCAQMD to consolidate monitoring, recordkeeping, reporting requirements of this subpart. SCAQMD's Rule 1173 overlaps the monitoring, recordkeeping, and reporting requirements and the facility is expected to comply. Fugitive emissions device D1448 has been previously tagged with 40CFR 63 Subpart CC and the facility is expected to comply with this subpart.

RECOMMENDATION:

It is recommended that AN 449120 be canceled and Permit to Operate be issued under Change of Operator application number 469915 with the conditions listed in the Conditions Section of this evaluation.

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APPENDICES:

- A. Tier 1 Chronic Screening Emissions Level Assessment for V-1507 @ 100m
- B. Tier 1 Chronic Screening Emissions Level Assessment for V-1508/1509 @ 100m
- C. Tier 1 Acute Screening Emissions Level Assessment for V-1507 @ 100m
- D. Tier 1 Acute Screening Emissions Level Assessment for V-1508/1509 @ 100m

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Appendix A- Tier 1 Chronic Screening Emissions Level Assessment for V-1507 @ 100m

Toxic Air Contaminant (TAC)	Maximum Emissions Rate Qyr (lb/yr)	PSL _p (lb/yr)	PSI _p
1,3-Butadiene	0.03987	1.49	0.0267
Ammonia	0.0274	51,700	5.3E-07
Benzene	0.0027	8.92	3.02E-04
Ethylbenzene	0.0119	415,000	2.87E-08
Ethylene	0.09052	*	*
Hexane (-n)	0.0594	1,810,000	3.28E-08
Hydrogen Sulfide	0.2186	2,580	8.47E-05
Naphthalene	0.07625	7.44	0.0010
Phenol	0.000263	51,700	5.08E-09
Propylene	0.10712	775,000	1.38E-07
Toluene	0.0145	77,500	1.87E-07
Xylene	0.0521	181,000	2.88E-07
Xylene (-m)	0.0174	181,000	9.61E-08
Xylene (-o)	0.0173	181,000	9.61E-08
Xylene (-p)	0.0174	181,000	9.61E-08
		Σ =	1.09E-03

** According to Table 1A of the Assessment Procedures for Rule 1401 and 212, the proposed Risk Values for ethylene will be added to the list once they are approved.*

$$\begin{aligned}
 \text{Cumulative Chronic PSI}_p &= \text{PSI}_p \text{ from V-1507} + \text{PSI}_p \text{ from V-1508/1509} \\
 &= 1.09\text{E-}03 + 0.7638 \\
 &= 0.765
 \end{aligned}$$

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**Appendix B- Tier 1 Chronic Screening Emissions Level Assessment for V-1508/1509
@ 100m**

Toxic Air Contaminate (TAC)	Maximum Emissions Rate Qyr (lb/yr)	PSL _p (lb/yr)	PSI _p
1,3-Butadiene	1.1164	1.49	0.74926
Ammonia	0.7682	51,700	1.485E-05
Benzene	0.0583	8.92	0.006526
Ethylbenzene	0.0433	415,000	1.04E-07
Ethylene	2.5345	*	*
Hexane (-n)	1.6628	1,810,000	9.19E-07
Hydrogen Sulfide	6.1214	2,580	0.00237
Naphthalene	0.0418	7.44	0.00562
Phenol	0.0005	51,700	1.0E-08
Propylene	2.9992	775,000	3.87E-06
Toluene	0.1579	77,500	2.03E-06
Xylene	0.0964	181,000	5.33E-07
Xylene (-m)	0.0337	181,000	1.86E-07
Xylene (-o)	0.0290	181,000	1.6E-07
Xylene (-p)	0.0337	181,000	1.86E-07
		Σ =	0.7638

**According to Table 1A of the Assessment Procedures for Rule 1401 and 212, the proposed Risk Values for ethylene will be added to the list once they are approved.*

$$\begin{aligned}
 \text{Cumulative Chronic PSI}_p &= \text{PSI}_p \text{ from V-1507} + \text{PSI}_p \text{ from V-1508/1509} \\
 &= 1.09\text{E-}03 + 0.7638 \\
 &= 0.765
 \end{aligned}$$

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Appendix C- Tier 1 Acute Screening Emissions Level Assessment for V-1507 @ 100m

Toxic Air Contaminate (TAC)	Maximum Emissions Rate Qyr (lb/hr)	PSL _p (lb/hr)	PSI _p
1,3-Butadiene	0.0001	N/A	N/A
Ammonia	0.0026	8.57	0.000303
Benzene	0.00019	3.96	0.00004798
Ethylbenzene	0.000126	N/A	N/A
Ethylene	0.000002	*	*
Hexane (-n)	0.0032	N/A	N/A
Hydrogen Sulfide	0.0004	0.0112	0.03571
Naphthalene	0.0000005	N/A	N/A
Phenol	0.0000012	15.5	7.7E-08
Propylene	0.00002	N/A	N/A
Toluene	0.00051	99.1	5.145E-06
Xylene	0.00023	58.9	3.905E-06
Xylene (-m)	0.000083	58.9	1.409E-06
Xylene (-o)	0.000067	58.9	1.138E-05
Xylene (-p)	0.000083	58.9	1.409E-06
		Σ =	0.0347

** According to Table 1A of the Assessment Procedures for Rule 1401 and 212, the proposed Risk Values for ethylene will be added to the list once they are approved.*

$$\begin{aligned}
 \text{Cumulative Acute PSI}_p &= \text{PSI}_p \text{ from V-1507} + \text{PSI}_p \text{ from V-1508/1509} \\
 &= 0.0347 + 0.0625 \\
 &= 0.0972
 \end{aligned}$$

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Appendix D- Acute Screening Emissions Level Assessment for V-1508/1509 @ 100m

Toxic Air Contaminate (TAC)	Maximum Emissions Rate Qyr (lb/hr)	PSL _p (lb/hr)	PSI _p
1,3-Butadiene	0.0001	N/A	N/A
Ammonia	0.0001	8.57	0.00001167
Benzene	0.0001	3.96	2.565E-05
Ethylbenzene	0.000005	N/A	N/A
Ethylene	0.0003	*	*
Hexane (-n)	0.0002	N/A	N/A
Hydrogen Sulfide	0.0007	0.0112	0.0625
Naphthalene	0.000005	N/A	N/A
Phenol	0.000001	15.5	6.5E-08
Propylene	0.0003	N/A	N/A
Toluene	0.00002	99.1	2.02E-07
Xylene	0.00001	58.9	3.905E-06
Xylene (-m)	0.000004	58.9	6.8E-08
Xylene (-o)	0.000003	58.9	5.1E-08
Xylene (-p)	0.000004	58.9	6.8E-08
		Σ =	0.0625

** According to Table 1A of the Assessment Procedures for Rule 1401 and 212, the proposed Risk Values for ethylene will be added to the list once they are approved.*

$$\begin{aligned}
 \text{Cumulative Acute PSI}_p &= \text{PSI}_p \text{ from V-1507} + \text{PSI}_p \text{ from V-1508/1509} \\
 &= 0.0347 + 0.0625 \\
 &= 0.0972
 \end{aligned}$$

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ATTACHMENTS

List of Attachments:

- I. South Coast AQMD NOV and NC Report
- II. Copy of Equilon's Command and Control Permit No. 254764
- III. Tesoro's Fugitive Counts and Rule 1401 Risk Assessments