PERMIT TO CONSTRUCT/SIGNIFICANT TV REVISION

COMPANY NAME

TESORO REFINING AND MARKETING CO

EQUIPMENT LOCATION

2101 E. PACIFIC COAST HIGHWAY

WILMINGTON, CA 90744

Facility ID#: 800436

Facility Type: NOx & SOx RECLAIM (Cycle 1), Title V

EQUIPMENT DESCRIPTION

Additions are shown as **bold underlined** and deletions are shown as ~~strikeouts.~~

Section H: Permit to Construct and Temporary Permit to Operate

APPLICATION NO. 526722:

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions * And Requirements	Conditions
Process 2: COKING AND RESIDUAL CONDITIONING					P13.1
System 10: VACUUM DISTILLATION					S13.4, S15.2, **S31.X**
~~TOWER, VACUUM, FC-104 (V-899), HEIGHT: 72 DIAMETER: 16~~ A/N: ~~469268~~ **526722**	~~D12~~				
TOWER, VACUUM, (V-3593), DIAMETER: 15 FT(TOP), 25FT (MIDDLE), 10FT(BTM). HEIGHT: 121 FT 6 INCH ; **A/N: 526722**	**DXXX1**				**H23.39, L341.4**
VESSEL, VACUUM JET HOT WELL, FC-132 (V-928), LENGTH: 20 FT ; DIAMETER: 4	D13				

FT A/N: ~~469268~~ 526722					
ABSORBER, AMINE, FC-160 (V-937), VACUUM VENT GAS, HEIGHT: 28 FT 6 IN; DIAMETER: 3 FT A/N: ~~469268~~ 526722	D14				
~~EJECTOR, E-1568 & E-1569 , 1ST STAGE CONDENSER,, TWO TOTAL A/N: 469268~~ 526722	~~D1558~~				
EJECTOR, ME0937, 1ST STAGE CONDENSER, E1977, A/N: 526722	**DXXX2**				**H23.30, L341.4**
~~EJECTOR, E-1017 & E-1018 , 2ND STAGE CONDENSER, TWO TOTAL~~ A/N: ~~469268~~ 526722	~~D1559~~				
EJECTOR, ME0938, 2ND STAGE CONDENSER, E 1978, A/N: 526722	**DXXX3**				**H23.30, L341.4**
~~EJECTOR, E-1019 & E-1020, 3RD STAGE CONDENSER, E1979, TWO TOTAL A/N: 469268~~ ~~526722~~	~~D1560~~				
EJECTOR, ME0929, 3RD STAGE CONDENSER, E1979, A/N: 526722	**DXXX4**				**H23.30, L341.4**
FUGITIVE EMISSIONS, MISCELLANEOUS A/N: ~~469268~~ 526722	D1557			**HAP**: (10) [**40CFR 63 Subpart CC, #5A, 6-23-2003**]	**H23.5, H23.39**

* (1) Denotes RECLAIM emission factor (2) Denotes RECLAIM emission rate
(3) Denotes RECLAIM concentration limit (4) Denotes BACT emission limit
(5)(5A)(5B) Denotes command and control emission limit (6) Denotes air toxic control rule limit
(7) Denotes NSR applicability limit (8)(8A)(8B) Denotes 40 CFR limit(e.g. NSPS, NESHAPS, etc.)
(9) See App B for Emission Limits (10) See Section J for NESHAP/MACT requirements

** Refer to Section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.

COMPLIANCE RECORD REVIEW

A two year printout of the facility's compliance history is shown in Attachment 1. All NOVs issued to this facility are listed as either in compliance or are closed. There are no open NOVs currently.

BACKGROUND

This application was received by the AQMD on September 6, 2011 from Tesoro Refining And Marketing Co. Tesoro is proposing to replace the existing Vacuum Tower V-899 (D12) in the Vacuum Distillation System (System 10, Process 2) with a functionally equivalent new Vacuum Tower V-3593 DXXX1. The existing Vacuum Tower (V-899) will be removed from service. In addition the existing first, second and third stage ejector/condenser will be replaced with functionally identical equipment as follows:

- Replace two of the 1st stage ejector/condenser pairs ME-369A/E-1568 and ME-369B/E-1569 (D1558), with one new 1st stage ejector/condenser pair ME-0937(injector) and E-1977(condenser)(DXXX2)
- Replace two of the 2nd stage ejector/condenser pairs ME-369C/E-1017 and ME-369D/E-1018 (D1559)with one new 2nd stage ejector/condenser pair, ME-0938(injector) and E-1978(condenser))(DXXX3).
- Replace two of the 3rd stage ejector/condenser pairs, ME-369E/E-1019 and ME-369F/E-1020 (D1560), with one new 3rd stage ejector/condenser pair, ME-0939(injector) and E-1979(condenser))(DXXX4).

In addition to the equipment listed on the permit, there will be the following changes to the fugitive components not listed on the permit as follows:

- Add a new wax pump P-3633
- Add new vacuum tower bottom (VTB) pumps P-3613 and P-3614
- Remove from Service, pumps P-3671 and P-1300

The table below lists all the permitted devices in the permit unit (new device is *underlined*, modified device is **bolded**, and deleted device is ~~*strikethrough.*~~ The third column shows the most recent application number associated with previous permit action. The last column shows the application number associated with this proposed modification.

Permit Unit	List of Permitted Devices in the Permit Unit (System)	Application No. Associated with Current Permit	Status of Permit Prior to this Proposed Modification	Application No. For This Proposed Modification
Vacuum Distillation Process 2, System 10	~~D12~~, D13, D14, D1267, D1268, D1269, D1557, ~~D1558~~, ~~D1559~~, ~~D1560~~, DXXX1, DXXX2, DXXX3, DXXX4	469268	Permit to Operate Issued	526722

FEE ANALYSIS

Table 2 lists permit processing fees and equipment information.

Table 2 – Summary of Permit Processing Fees

	Equipment Description	BCAT/ CCAT	Fee Schedule	Fee Type	Fee	XPP Fee	Total Fee
526722	DCU/ Vacuum Distillation Unit	294955	E	Modification	$5,330.66	$2,665.33	$7,995.99
526851	Permit Amendment	555009		Title V Significant Amendment	$1,747.19		$1,747.19
Total Permit Processing							**$9,743.18**

PROCESS DESCRIPTION

The general function of a vacuum tower is to vaporize, condense, separate, and recover usable gas-oil boiling range hydrocarbons from the bottoms (residuum) stream of an atmospheric main fractionator. The gas oil products from a vacuum tower are typically routed to a hydrotreating unit to remove sulfur and nitrogen, then to the FCCU where it is converted into gasoline. The vacuum tower bottoms (asphalt type hydrocarbons) are typically routed to the coker heater on the Delayed Coking Unit (DCU).

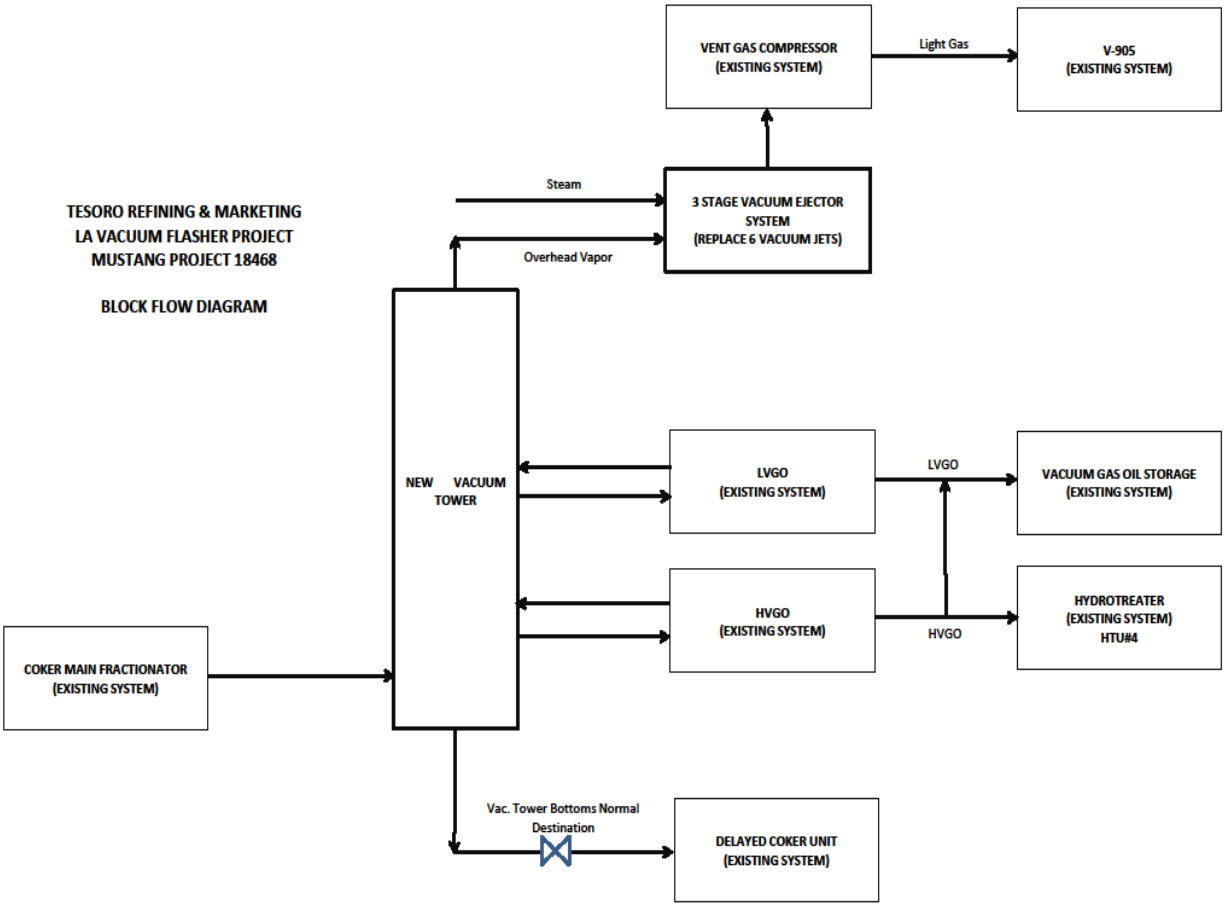
The vacuum tower operates at a deep vacuum pressure (20-50 mmHg) to promote vaporization of the feed and the clean separation of the hydrocarbon vapors and the un-vaporized liquid. The feed to the Tesoro Los Angeles Refinery's DCU Vacuum Tower is the hot bottoms stream from the DCU main fractionators. Products from the Vacuum Tower include vacuum overhead vapor, Vacuum Gas Oil (VGO) – includes both light vacuum gas oil (LVGO) and heavy vacuum gas oil (HVGO), and vacuum tower bottoms (charge to coker heater H-101). The proposed modification will not change the maximum daily input and output of the vacuum tower. However, it will allow for a more efficient recovery of VGO from the vacuum tower bottoms. Historically, the maximum feed rate to the vacuum tower from the main fractionator is 65,000 bbls/day. Currently the vacuum tower

bottom is again recycled within the DCU process by being sent back to the DCU through H-101 which unnecessarily consumes energy. Improve VGO recovery will reduce energy consumed processing recycled vacuum tower bottoms.

The proposed modification will upgrade the existing facilities by improving vacuum gas oil (VGO) recovery at the Vacuum Distillation Unit (System 10) of the Coking and Residual Conditioning Process (Process 2). Currently, the existing vacuum column at the vacuum distillation unit has limited VGO recovery efficiency. This constraint results in incomplete separation of VGO from heavy products. VGO entrained in the tower bottoms (heavy products) sent to the coker heater is thermally cracked and recycled within the DCU system resulted in unnecessary consumption of energy. A more complete separation of VGO from heavy products can be accomplished with the new Vacuum Tower replacement which can increase VGO recovery efficiency by 15-20% due to its larger diameter. The new larger diameter tower lowers the vapor velocity in the tower to reduce gas oil entrainment in heavy products. Pressure drop in the tower is lowered to improve gas oil separation. Gas oil separation is further enhanced by replacing the ejector/condensers in order to run the tower at a deeper vacuum. The current vacuum pressure in the vacuum column is at the range of 30-40mmHg and the new tower will run at a deeper vacuum at the range of 8-12 mmHg. There will be no increase in the charge rate to the Vacuum Tower and no increase to the total products leaving the Vacuum Tower. However, the distribution of products will change as more VGO is recovered from the vacuum bottoms.

Under emergency, releases from the existing Vacuum Tower (V-899) to the flare gas recovery system occurres through the pressure relief device (R-6159) The new Vacuum Tower (V-3593) will continue to utilize the existing pressure relief device (R-6159) currently used at the existing Vacuum Tower (V-899) for emergency relief to the flare gas recovery system. The PRV release setting is at 50PSIG, same setting for the existing and new tower. There will be no increase in the maximum vapor release capacity to the flare gas recovery system. The maximum vapor release capacity continues to be the same as the existing tower operation.

Process Flow Diagram



EMISSIONS CALCULATIONS

The replacement of the existing Vacuum Tower, the ejectors, the pumps and the associated fugitive components will result in ROG increase. The emissions increase will be offset by an ERC certificate according to Rule 1303. Summary of valves exempted from BACT requirements is attached in an exemption list in Attachment 2. For further details, please see the P&ID submitted with application.

Table 3-Fugitive Emission Calculations for Vacuum Tower Modification

New Source Unit with BACT		*Service*	Number of Sources	BACT Emission Factor (lb/yr)	Total Annual Emissions lbs/yr
Valves	**Sealed Bellows**	**Gas/Vapor and Light Liquid**	6	0.00	0.0
	SCAQMD Approved I & M Program	**Gas/Vapor**	26	4.55	118.3
			-22	4.55	-100.1
		Light Liquid	4	4.55	18.2
			-12	4.55	-54.6
		Heavy Liquid	117	4.55	532.4
			-61	4.55	-277.6
Pumps	**Sealless Type**	**Light Liquid**	0	0.00	0.0
	Double Mechanical Seals or Equivalent Seals	**Light Liquid**	0	46.83	0.0
	Single Mechanical Seal	**Heavy Liquid**	-2	46.83	-93.7
	DoubleMechanical Seals	**Heavy Liquid**	3	46.83	140.5
Compressors		**Gas/Vapor**	0	9.09	0.0
Flanges (ANSI B 16.5-1988)		**All**	193	6.99	1349.1
Removal of Existing Flanges			-152	6.99	-1062.5
Pressure Relief Valves		**All**	0 (Use existing PRV)	0.00	0.0
Process Drains with P-Trap or Seal Pot		**All**	3	9.09	27.3
			-2	9.09	-18.2
			Totals	lbs/year	579.1
				lbs/day	1.6

Note:
(1) All new source units are subject to SCAQMD BACT with monthly inspection and maintenance (I&M) and 500 ppm by OVA.
(2) The non-zero BACT emission factors are based on Correlation Equation Factor 500 ppm Screening Value (lb/yr).
(3) 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
(4) Heavy liquid: streams with a vapor pressure equal to or less than that of kerosene (0.1 psia @ 100F or 689 Pa @ 38C) based on the most volatile class present >20% by volume.

RULES EVALUATION:

PART 1 SCAQMD REGULATIONS

Regulation II Permits

Rule 212	***Standards for Approving Permits*** ***November 14, 1997***
	The proposed modifications meet all criteria in Rule 212 for permit approval. The equipment is designed so it can be expected to operate without emitting air contaminants in violation of sections 41700, 41701 and 44300 of the State Health and Safety Code or in violation of AQMD's rules and regulations. The proposed modifications do not constitute a significant project because 1) the modified permits units are not located within 1000 feet of a school. 2) The project will result in emissions increase of < 2 lb/day, which it does not exceed the daily maximum specified in subdivision (g) of Rule 212; and 3) The modified permit units do not have an increased cancer risk greater than, or equal to, one in a million (1x 10-6) during a lifetime of 70 years or pose a risk of nuisance.

Regulation IV Prohibitions

Rule 401	***Visible Emissions*** ***November 9, 2001***
	This rule specifies that a person shall not discharge emissions from a source for a period or periods aggregating more than three minutes in any one hour which are as dark or darker in shade as that designated No. 1 on the Ringelmann Chart or emissions of such opacity that it obscures an observers view to an equal or greater level. This is equivalent to opacity of 20%. Fugitive Components: Visible emissions are not expected from any of the new fugitive components installed under this project. Vacuum Tower: Visible emissions are not expected under normal operating conditions of the tower.

Rule 402	***Nuisance*** ***May 7, 1976***
	Nuisance complaints associated with the above project are not expected under normal operating conditions.

Rule 465	***Refinery Vacuum Producing System*** ***August 13, 1999***
	This rule requires exhaust gases from vacuum-producing devices or systems, including hot wells and accumulators, be continuously collected and added to a fuel gas system or combustion device that has been approved and issued a permit by the Executive Officer in accordance with all applicable District regulations. Vacuum producing devices or systems (devices or systems to maintain the pressure inside a vessel below 14.7 psia) employed at the refinery are subject to this rule. In accordance with the requirements of Rule 465(c)(2), the exhaust gases from vacuum-

	producing devices or systems shall be continuously collected and added to a fuel gas system (i.e., the vapor recovery system) or combustion device (i.e., flare). The vacuum ejectors (eductors) on the vacuum distillation column are subject to the requirements of this regulation. The vacuum ejector system is a closed system. The condensed exhaust stream is routed to the Vacuum jet sump V-928. Here, condensed water is pumped to the sour water treatment system and any non-condensable gases are routed to one of the existing fractionator overhead accumulator of the DCU unit V-905 (D15)V-905 With this system the majority of the hydrocarbons are recovered. This system complies with the requirements of this rule.

Regulation XI Source Specific Standards

Rule 1123	***Refinery Process Turnaround*** ***December 7, 1990***
b) Requirements	(1) During process turnarounds, the operator shall not depressurize any vessel containing organic materials unless the vapors released from the vessel are collected and contained for use as fuel or sent to a gas disposal system until the pressure in the vessel is below 5 psig, or is within 10 % above the minimum gauge pressure at which the vapors can be collected, whichever is lower.
	(2) If the refinery uses inert gas displacement or vacuum eduction for process turnaround, the refinery operator shall submit a Rule 1123 plan per Rule 1123(b)(2).
c) Recordkeeping	The operator is required to maintain a record of each refinery process unit turnaround containing, at a minimum, the date the unit was shut down, the approximate vessel hydrocarbon

	concentration when hydrocarbons were first discharged into the atmosphere, and the approximate amount of hydrocarbons emitted into the atmosphere.
	Each process unit with a vessel containing organic materials will contain a system condition (S13.4) that specifies that the devices in the systems are subject to Rule 1123. Compliance expected.

Rule 1173	***Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants*** ***December 6, 2002***
	The proposed modification will add valves, flanges, pumps, and drains that are subject to control of fugitive emissions. Tesoro has an approved Inspection and Maintenance (I&M) Program (A/N 477506). Tesoro will include the new components into Tesoro's I&M program.

Rule 1176	***Sumps and wastewater Separators*** ***September 13,1996***
	The purpose of this rule is to limit VOC emissions from waste water systems located at petroleum refineries, on shore oil production fields, off-shore oil production platforms, chemical plants and industrial facilities. The rule specifies requirements for wastewater sumps, separators, sewer lines, process drains, junction boxes and air pollution control equipment
(e)(1)	**Wastewater Systems** Emissions. This wastewater treatment is expected to continue to meet the 500 ppm limit in Rule1176. The modification will not increase the wastewater treatment capacity.
(e)(2)	**Sumps and wastewater Separators**. No new sumps or wastewater separators will be installed in the system.
(e)(3)	**Sewer Lines**. No new sewer lines will be installed in the system.
(e)(4)	

(e)(5) (e)(6) (e)(7)	**Process drains**. Three new process drains will be installed in the system and new process drains will be equipped with p-traps or seal pots and included in the approved I&M program. Tesoro complies with this section of the Rule. **Junction boxes**. No new junction boxes will be installed in the system. **APC Devices**. The vapor recovery system has 99.99% control efficiency. **Additional requirements for drain system components (DSCs)** at Petroleum refineries. Tesoro 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, closed vent system, and all DSCs according to the schedule outlined in the Table 2 of the rule. Tesoro submits quarterly reports to the District with the information required in (g)(2)(B).

Regulation XIII New Source Review

REG XIII	***New Source Review*** *(Amended December 6, 2002)*
	The modifications proposed in this project will result in an emission increase of 1.6 lb/day VOC. The emission increase due to this project is shown in Table 3. The following is a discussion of each requirement in NSR.
BACT Rule 1303(a)	BACT has been included in the design of the proposed project. BACT means the most stringent emission limitation or control technique which: (1) has been achieved in practice for such category or class of source; or (2) is contained in any State Implementation Plan (SIP) approved by the US EPA for such category or class of source. A specific limitation or control technique shall not apply if the owner or operator of the proposed source demonstrates to the satisfaction of the Executive Officer or designee that such limitations or control technique is not presently achievable; or (3) is any other emission limitation or control technique, found by the Executive Officer or designee to be technologically feasible for such class or category of sources or for a specific source, and cost effective as compared to measures as listed in the Air Quality Management Plan (AQMP) or rules adopted by the District Governing Board. ***Fugitive emissions***. BACT is required for fugitive emission control and is follows: • **Valves:** Bellow-sealed valves are required with the following exemptions which must be included in the approved I&M program, 1. Heavy liquid service (i.e., streams with a vapor pressure <0.1 psia @ 100 ^{o}F (kerosene) based on the most volatile class present > 20% by volume) 2. Control valve 3. Instrument tubing application 4. Applications requiring torsional valve stem motion 5. Applications where valve failure could pose safety hazard (e.g., drain valves with valve stem in horizontal position)

REG XIII	***New Source Review*** *(Amended December 6, 2002)*
	6. Retrofit/special applications with space limitation (special applications such as skid mounted standard packaged systems) 7. Valves not commercially available Valves installed where Bellow-sealed valves are not available will be subject to a leak rate of less than 500 ppmv by EPA Method 21 and an approved I&M program. • **Relief Valves:** All relief valves will be connected to a closed vent system or equipped with a rupture disc. • **Process Drain:** Process drains will be equipped with p-traps or seal pots and included in the approved I&M program. • **Pumps:** Pumps in light liquid service will be equipped with double or tandem seals vented to a closed system with a leak rate less than 1000 ppm by EPA Method 21 and included in an approved I&M program. • **Flanges:** All flanges must meet ANSI/API standards and included in an approved I&M program BACT is being applied for new fugitive components as follows: <u>Pumps in Heavy Liquid Service</u>: BACT for this equipment is Single Mechanical Seal with flush cooling. Tesoro will install double mechanical seal pumps which will achieve better control efficiency than BACT. <u>Valves in Gas/Liquid Service</u>: BACT for this equipment is leakless (bellow seal valves). All new valves installed for this project will utilize bellow seal except as exempted pursuant to Memorandum from Jay Chen dated April 2, 1999. <u>Process Drains</u>: BACT for this equipment is P-trap or seal pot. Tesoro will use P-trap or seal pot when installing process drain.
Modeling 1303(b)(1)	Modeling: The only emissions resulting from the proposed modification will be ROG. According to the screening requirements in Rule 1303 Appendix A, Table A-1, modeling is not required for ROG. Therefore, no air quality

REG XIII	***New Source Review*** *(Amended December 6, 2002)*
	modeling is required for the new installations.
OFFSET 1303(b)(2)	This modification will result in increase of VOC emissions of 1.6 lbs/day. Since the refinery is located in the South Coast Air Basin (SOCAB), an offset ratio of 1.2-to-1 is required. The resulting estimated offset of 1 (1.6 x1.2) lbs/day is rounded off to 2 lbs/day. Tesoro has an ERC Certificate AQ011399 of 15 lbs/day of ROG, which will be utilized to offset the 2 lbs of ROG increase. See **attachment 3** for a copy of ERC certificate.
1303(b)(3)	Sensitive Zone Requirements. Unless credits are obtained from the Priority Reserve, facilities located in the South Coast Air Basin are subject to the Sensitive Zone requirements specified in Health and Safety Code Section 40410.5. A facility in zone 1 may obtain Emission Reduction Credits originated in zone 1 only, and a facility in zone 2A may obtain Emission Reduction Credits from either zone 1 or zone 2A, or both, or demonstrate to the Executive Officer or designee a net air quality benefit in the area impacted by the emissions from the subject facility. Tesoro is in Zone 1 and the ERCs that will be utilized were originated in Zone 1. See attachment 3 for a copy of ERC certificate. Compliance is expected.
1303(b)(4)	Facility Compliance. Tesoro must comply with all applicable Rules and Regulations of the AQMD. According to the enforcement records, Tesoro is currently in compliance with all applicable rules and regulations of the District
1303(b)(5)	Major Polluting Facilities. This Project is a modification at a major polluting facility. Therefore, the facility shall comply with the following requirements.
	(A) *Alternative Analysis* – Applicant must conduct an analysis of alternative sites, sizes, production processes, and environmental control techniques for such proposed source and demonstrate that the benefits of the proposed project significantly outweigh the environmental and social costs associated imposed as a result of its location, construction, or modification (42 U.S.C. Section

REG XIII	***New Source Review*** *(Amended December 6, 2002)*
	7503(a)(5). Since this project is exempt from CEQA analysis, it will be exempt from this requirement per (b)(5)(D)(i)
	(B) Statewide Compliance. Demonstrate that all major sources in the state under control of the applicant are in compliance or on a schedule for compliance with all applicable federal emissions standards and all standards under the Clean Air Act be demonstrated for all facilities located within California for a major modification at a major polluting facility. Compliance must be demonstrated prior to the issuance of the Permit to Construct. A letter certified Statewide Compliance was provided by David Reed of Tesoro Refining dated September 12, 2011. The certification is provided in **Attachment 4.**
	(C) Protection of Visibility. Visibility modeling is not required because there is no increase in PM10 or NOx. (D) Compliance Through California Environmental Quality Act. CEQA requires that the environmental impacts of proposed projects be evaluated and that feasible methods to reduce, avoid or eliminate identified significant adverse impacts of these projects be considered. The CEQA Applicability Form (400-CEQA) indicates that the project does not have any impacts which trigger the preparation of a CEQA document. The expected impacts of the project on the environment are not significant since the net emission ROG increase does not trigger the thresholds ROG: 55 LBS/DAY of The District's CEQA Guidelines. Therefore a CEQA analysis is not required. Therefore, compliance of Rule 1303(b)(5) is expected.

Regulation XIV Toxics and Other Non-Criteria Pollutants

Rule 1401	***New Source Review of Toxic Air Contaminants*** *May 3, 2002*

Cumulative increase in MCIR, Chronic and Acute Hazardous Index is below the threshold specified in this rule. (Attachment 5). T-BACT which is the same as BACT for this project is also applied.

The results from the analysis are shown in the table below.

Results of Rule 1401 Analysis

Parameter	Results	Rule 1401 Requirements	Comply (Y/N)
MICR Residential MICRCommercial	5.33E-11 1.04E-11	<1.0EE-06 (no TBACT) <10EE-06 (w/TBACT)	Yes
HIA	1.64E-04	<1.0	Yes
HIC	4.86E-05	<1.0	Yes
Cancer Burden	N/A	Applicable only if MICR >1.0EE-06	N/A

Regulation XVII Prevention of Significant Deterioration (PSD)

Regulation XVII	***PREVENTION OF SIGNIFICANT DETERIORATION (PSD)*** ***(Adopted October 7, 1988)***

SCAQMD signed a new Partial PSD delegation agreement with EPA effective July 25, 2007. Therefore, effective July 25, 2007, SCAQMD have PSD responsibility for all new PSD sources and all modifications to existing PSD sources where the applicant is requesting to use our existing Regulation XVII to determine PSD applicability for a modification.

This rule requires an application for a permit to construct which has a significant emission increase of an attainment air contaminant to use BACT, do modeling, conduct one year continuous ambient air monitoring, among other requirements. In the South Coast Basin, the four attainment air contaminants are sulfur dioxide (SO2), nitrogen Oxide (NOx), Carbon monoxide (CO) and lead (Pb). Rule 1702(t) defines significant emission

	increase for NOx, SO2 as 40 tons /year and for CO 100 tons/year. Rule 1714 also regulates Green House Gas in accordance with 40 Code of Federal Regulations Part 52.21. Since this modification does not result in increase of air pollutants subject to PSD; therefore PSD applicability is not required.

Regulation XXX	**Title V Permits** **March 16, 2001**
	Rule 3001(a): Applicability (Amended November 14, 1997) The Tesoro Los Angeles Refinery has been designated as a Title V facility. The subject permit will be issued as a revision of the Title V permit. As defined in Rule 3000, a significant permit revision means any facility permit revision that is not eligible for administrative permit revision, minor permit revision, or de minimis significant permit revision procedures. Such revisions include any of the following: 1. relaxation of any monitoring, recordkeeping, or reporting requirement, term, or condition in the Title V permit; 2. the addition of equipment or modification to existing equipment or processes that result in an emission increase of non-RECLAIM pollutants or hazardous air pollutants (HAP) in excess of any of the emission threshold levels ; 3. any modification at a RECLAIM facility that results in an emission increase of RECLAIM pollutants over the facility's starting Allocation plus the nontradeable Allocations; 4. requests for a permit shield when such requests are made outside applications for initial permit or permit renewal issuance; 5. any revision that requires or changes 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; 6. any revision that results in a violation of regulatory requirements; 7. any revision that establishes or changes a permit condition that the facility assumes to avoid an applicable requirement; 8. installation of new equipment 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 Part 61 or 40 CFR Part 63; or, 9. modification or reconstruction of existing equipment, resulting in an emission increase subject to new or additional NSPS requirements pursuant to 40 CFR Part 60, or to new or additional NESHAP requirements pursuant to 40 CFR Part 61 or 40 CFR Part 63. Since the proposed changes for Vacuum Distillation is subject to new NSPS requirements pursuant to 40 CFR Part 60, this revision will be considered a ***significant revision*** to the existing Title V permit. For Significant revisions, AQMD needs to notify the public and the EPA prior to permit issuance. Therefore, the permit is subject to a 30 day public Notice and a 45 day EPA review and comment period. A final copy of the permit will be submitted to the EPA within 5 working days of its issuance.

PART 2 STATE REGULATIONS

California Environmental Quality Act (CEQA)	
	Based on the information on Form 400 CEQA, this project is exempt from CEQA requirement.

PART 3 FEDERAL REGULATIONS

40 CFR 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	Applicability and designation of affected facility. In accordance with §60.590(b), any affected facility (petroleum refinery) that commences construction or modification after November 7, 2006 is subject to the requirements of this subpart. According to the 40 CFR 60.590 (c), addition or replacement of equipment for the purpose of process improvement is allowed without triggering applicability under Subpart GGGa as long as the change does not constitute a "capital expenditure". 40 CFR 60.481a, which is incorporated by reference in Subpart GGGa, defines a "capital expenditure" by a set of calculations. Subpart GGGa is triggered when the cost of the project exceeds the term "P" in the equations below. $Y = 1 - 0.575 \log X$ Since the Vacuum Distillation Unit was constructed in 1968, Y = 0.09 $A = Y \times (B/100)$ Since B = 7, as per the definition in VVa, A = 0.00641 $P = R \times A$ Tesoro's engineers estimate the replacement cost (R) for the equipment in the DCU/VCU at approximately $500 million. Therefore, the maximum amount that can be spent without triggering Subpart GGGa is $3.2 million.

	The approximate cost for the project is greater than $4.00 million. In this case, the cost of this project will exceed the capital expenditure threshold of $3.2MM. Therefore, Subpart GGGa is applicable. (See the attached e-mail by Pang Mueller dated 9/20/2011regarding the cost which is $4.0 million). The new devices in the Vacuum distillation Unit will be subject to condition H23.39 that specifies that 40 CFR Part 60 Subpart GGGa applies. Compliance is expected.
§60.592a	Standards. a. The facility shall comply with the requirements of §§60.482-1a to 60.482-10a as soon as practicable, but no later than 180 days after initial startup. §§60.482-1a to 60.482-10a refers to Subpart VVa – Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemical Manufacturing Industry and sets standards for the following: • §60.482-1a Standards: General • §60.482-2a Standards: Pumps in light liquid service • §60.482-3a Standards: Compressors • §60.482-4a Standards: Pressure relief devices in gas/vapor service • §60.482-5a Standards: Sampling connection systems • §60.482-6a Standards: Open-ended valves or lines • §60.482-7a Standards: Valves in gas/vapor service and in light liquid service • §60.482-8a Standards: Pumps and valves in heavy liquid service, pressure relief devices in light or heavy liquid service, and connectors • §60.482-9a Standards: Delay of repair • §60.482-10a Standards: Closed vent systems and control devices. All new component in VOC service are expected to meet the equipment standards and monitoring requirements in Sections 60.482-1 60.482-10 for

	pumps, valves, pressure relief devices, closed vent system, etc. In general, the equipment leak inspection and monitoring requirements of Rule 1173 are more stringent than this regulation but pertinent requirements of this regulation have been incorporated into Tesoro's Inspection and Monitoring (I&M) Program for fugitive emissions. It is expected that Tesoro will comply with the inspection, maintenance, and record keeping requirements of this rule. A system condition (S31.X) will be tagged noting that all affected fugitive components are subject to 40CFR60, subpart GGGa. Compliance is expected.

40CFR Part 63 Subpart CC	**National Emission Standard for Hazardous Air Pollutants from Petroleum Refineries**
§63.648	This process unit is subject to the equipment leak standards, detection, and repair requirements of 40.CFR63 Subpart CC, Section 63.648. The equipment leak inspection and monitoring requirements of Rule 1173 are in general more stringent than that specified in Section 63.648. Therefore, compliance with the inspection, maintenance, and recordkeeping requirements of this rule are expected.

40CFR60Subpart QQQ	**Standards of Performance for VOC Sources from Petroleum Refinery Wastewater Systems** This regulation is applicable to a facility located in petroleum refineries for which construction, modification, or reconstruction commenced after May 4, 1987. The following are separate affected facilities under this regulation: ▪ An individual drain system (all process drains connected to the first common downstream junction box, together with their associated sewer lines and junction boxes, downstream to the receiving oil-water separator)

	▪ An oil-water separator ▪ An aggregate facility (individual drain system together with ancillary downstream sewer lines and oil-water separators) According to Tesoro, this project will include the installation three process drains; two process drains are replacing existing ones and one is new. Tesoro will use P-trap or seal pot when installing the three process drains. Compliance with this rule is expected

RECOMMENDATIONS

A permit to construct is recommended subject to the following conditions:

A/N 526722 Process 2 System 10 – Vacuum Distillation Unit

PROCESS CONDITION

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

[40CFR61 Subpart FF, 12-4-2003]

[Processes subject to this condition: 1, 2, 3, 4, 5, 6, 8, 9, 11, 12, 15]

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 , 3]

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

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

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.

[**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 , 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 , 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]

S31.X The following BACT requirements shall apply to VOC service fugitive components associated with the devices that are covered by application number(s) 526772:

All sampling connections shall be closed-purge, closed loop, or closed-vent systems.

All new valves in VOC service shall be leakless type, except those specifically exempted by Rule 1173 or approved by the District in the following applications: heavy liquid service, control valves, instrument piping/tubing, applications requiring torsional valve stem motion, applications where valve failure could pose safety hazard (e.g., drain valves with valve stems in horizontal position), retrofits/special applications with space limitations, and valves not commercially available.

For the purpose of this condition, leakless valve shall be defined as any valve equipped with sealed bellows or equivalent approved in writing by the District prior to installation.

All new components in VOC service as defined by Rule 1173, except valves and flanges shall be inspected quarterly using EPA Reference Method 21. All new valves and flanges in VOC service except those specifically exempted by Rule 1173 shall be inspected monthly using EPA Method 21. Components shall be defined as any valve, flange, fitting, pump, compressor, pressure relief device, diaphragm, hatch, sight-glass, and meter, which are not exempted by Rule 1173.

The following leaks shall be repaired within 7 calendar days -- all light liquid/gas/vapor components leaking at a rate of 500 to 10,000 ppm, heavy liquid

components leaking at a rate of 100 to 500 ppm and greater than 3 drops/minute, unless otherwise extended as allowed under Rule 1173.

The following leaks shall be repaired within 2 calendar days -- any leak between 10,000 to 25,000 ppm, any atmospheric PRD leaking at a rate of 200 to 25,000 ppm, unless otherwise extended as allowed under Rule 1173.

The following leaks shall be repaired within 1 calendar day -- any leak greater than 25,000 ppm, heavy liquid leak greater than 500 ppm, or light liquid leak greater than 3 drops per minute.

If 98.0 percent or greater of the new valve and the new flange population inspected is found to leak gaseous or liquid volatile organic compounds at a rate less than 500 ppmv for two consecutive months, then the operator may revert to a quarterly inspection program with the approval of the Executive Officer. This condition shall not apply to leakless valves.

The operator shall revert from quarterly to monthly inspection program if less than 98.0 percent of the new valves and the new flange population inspected are found to leak gaseous or liquid volatile organic compounds at a rate less than 500 ppmv. This condition shall not apply to leakless valves.

All new process drains are subject to District Rule 1176 and 40 CFR Subpart QQQ

The operator shall keep records of the monthly inspection (quarterly where applicable), subsequent repair, and reinspection, in a manner approved by the District.

The operator shall provide to the District, prior to initial startup, a list of all non-leakless type valves that were installed. The list shall include the tag numbers for the valves and reasons why leakless valves were not used. The operator shall not startup the equipment prior to the Districts approval for the use of all non-leakless valves

The operator shall provide to the District, no later than 90 days after initial startup, a recalculation of the fugitive emissions based on actual components installed and removed from service. The operator shall also submit a complete, as built, piping and instrumentation diagram(s) and copies of requisition data sheets or field inspection surveys for all non-leakless type valves with a listing of tag numbers and reasons why leakless valves were not used.

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

[Systems subject to this condition: Process 2, System 10]

DEVICE CONDITIONS:

H23.5 This equipment is subject to the applicable requirements of the following rules or regulations:

Contaminant	Rule	Rule/Subpart
VOC	District Rule	1173

[Rule 1173, 5-13-1994; Rule 1173, 12-6-2002]

[Devices subject to this condition: D1354, D1355, D1356, D1357, D1359, D1361, D1362, D1363, D1364, D1366, D1367, D1378, D1399, D1408, D1409, D1416, D1419, D1423, D1424, D1425, D1426, D1427, D1428, D1429, D1430, D1431, D1432, D1433, D1434, D1435, D1436, D1437, D1443, D1444, D1451, D1454, D1459, D1460, D1461, D1465, D1466, D1467, D1469, D1470, D1471, D1472, D1473, D1477, D1553, D1556, D1557, D1561]

H23.30 This equipment is subject to the applicable requirements of the following rules or regulations:

Contaminant	Rule	Rule/Subpart
VOC	DISTRICT RULE	RULE 465

[**RULE 465, 8-13-1999]**

[Devices subject to this condition: ~~D1558~~ **DXXX2**, ~~D1559~~ **DXXX3**, ~~D1560~~ **DXXX4**]

H23.39 This equipment is subject to the applicable requirements of the following rules or regulations:

Contaminant	Rule	Rule/Subpart
VOC	DISTRICT RULE	RULE 1173
VOC	40 CFR60, SUBPART	GGGa

[**RULE 1173, 5-13-1994;** RULE 1173, 2-6-2009, **40CFR60 Subpart GGGa, 6-2-2008**]

[Device subject to this condition: D1600, D1601, D1602, D1603, D1604, D1608,**D1557**]

L341.4 Within 90 days after start-up of this equipment, the following device(s) shall be removed from operations:

Vacuum Tower (V-899) identified by Device No. D12

First Stage Ejectors/Condensers identified by Device No. D 1558

Second Stage Ejectors/Condensers identified by Device No. 1559

Third Stage Ejectors/Condensers identified by Device No. 1560

[Rule 1306(b)(2) offset, 12-6,2002; **Rule 1313 (d), 12-7-1995]**

[Device subject to this condition: DXXX1, DXXX2, DXXX3, DXXX4)

Attachments

1.	NOV's and NC's Issued
2.	Summary of valves exempted from BACT requirements
3	copy of ERC certificate
4.	Certification of Statewide Compliance
5.	AQMD Toxic Analysis