Bay Area Air Quality Management District
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Permit Evaluation and Statement of Basis for Revision 5

to the

MAJOR FACILITY REVIEW PERMIT

for

Valero Refining Co. - California
Facility #B2626
Application #24261

Facility Address:
3400 East Second Street
Benicia, CA 94510-1097

Mailing Address:
3400 East Second Street
Benicia, CA 94510-1097

Application Engineer: Thu Bui
Site Engineer: Thu Bui

April 2013

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Title V Statement of Basis

A. Background

This facility is subject to the Operating Permit requirements of Title V of the federal Clean Air Act, Part 70 of Title 40 of the Code of Federal Regulations (CFR), and BAAQMD Regulation 2, Rule 6, Major Facility Review because it is a major facility as defined by BAAQMD Regulation 2-6-212. It is a major facility because it has the "potential to emit," as defined by BAAQMD Regulation 2-6-218, of more than 100 tons per year of a regulated air pollutant, than 10 tons per year of a hazardous air pollutant or more than 25 tons per year of a combination of hazardous air pollutants.

Major Facility Operating permits (Title V permits) must meet specifications contained in 40 CFR Part 70 as contained in BAAQMD Regulation 2, Rule 6. The permits must contain all applicable requirements (as defined in BAAQMD Regulation 2-6-202), monitoring requirements, recordkeeping requirements, and reporting requirements. The permit holders must submit reports of all monitoring at least every six months and compliance certifications at least every year.

In the Bay Area, state and District requirements are also applicable requirements and are included in the permit. These requirements can be federally enforceable or non-federally enforceable. All applicable requirements are contained in Sections I through VI of the permit.

Each facility in the Bay Area is assigned a facility identifier that consists of a letter and a 4-digit number. This identifier is also considered to be the identifier for the permit. The identifier for this facility is B2626.

This facility received its last Title V permit on December 1, 2003. The permit has been reopened several times, as outlined below.

Revision 1: On December 16, 2004, the District issued Revision 1 of the permit, which amended flare and BAAQMD Regulation 9, Rule 10 requirements, added new permitted sources, and corrected typographical and other inadvertent errors ("Revision 1 Permit"). EPA objected to the Revision 1 permit on one issue: the permit's failure to include monitoring or a design review for certain thermal oxidizers.

Revision 2: In the same October 8, 2004 letter in which it objected to the Revision 1 permit and required that it be reopened, EPA sent comments identifying a number of issues to be resolved for the District's refinery Title V permits. (Note that EPA commented on five refineries in this letter. Not all comments concern this facility.) On April 15, 2005, the District proposed Revision 2 of the permit. The primary purpose of the Revision 2 proposal was to address various issues identified in EPA's October 8, 2004 letter regarding the Revision 1 proposal. The public comment period for the Revision 2 proposal ended May 24, 2005.

Revision 3: On December 7, 2004, EPA received a petition from Our Children's Earth Foundation (OCE) requesting that the administrator object to the issuance of the Title V permit (the Revision 1 Permit). On March 15, 2005, shortly before the Revision 2 reopening was proposed, EPA issued an Order directing the District to reopen the permit to address possible deficiencies that EPA had identified based on the OCE petition. On August 15, 2005, the District proposed Revision 3 of the permit, primarily to address the issues listed in the EPA March 15, 2005 Order.

The TV permit with combined Revision 2 and Revision 3 was issued on March 2, 2007. The Revision 3 Permit is the current permit for the facility, and the phrases "Revision 3 Permit" and "current permit" are used interchangeably in this document.

Revision 4: On May 7, 2008, the District issued Revision 4 of the permit. This revision updated Regulations and incorporated changes made through New Source Review applications. The changes involved in Revision 4 are documented in the accompanying Statement of Basis.

2008 Renewal: On December 10, 2010 the District issued the Renewal version of the permit. This revision updated Regulations and incorporated changes made through New Source Review applications and included review of Compliance Assurance Monitoring (CAM) requirements. The changes involved in the Renewal are documented in the accompanying Statement of Basis.

The Revision 5 permit application incorporates the following recent Title V permit applications into the permit:

Application Number(s) (Title V/New Source Review (NSR)	**Description**
16708/16707	S-43, S-44, and S-46 source test frequency corrected in Condition 24198, Part 11
20383/20558	S-23 NOx SU/SD low firing condition
21655/21350	S-252 Emergency Diesel H2O Pump replaced S-240
22052/20690	A-68 Thermal Oxidizer at WWTP
22054/21573	Dump Stack for FCCU/Coker P-69
22603/22602	NOx Box Condition 21233, source test submittal dates
22711/22710	S-1059, S-1060 Consent Decree 3-year RATA allowance – this application was consolidated with Application 24273/24379
22712/21490	S-1010 Hydrogen Plant De-aerator N+S Vents Testing Intervals
22726/22082	S-1063 Alkylation Guard Beds, fugitive equipment
23842/23841	S-129 Condition 1709 Revisions
24106/24094	S-34, S-35, S-40, S-41 Intermittently Operated Furnace Requirements
24261/22080	BAP connection to S-1003 HCU
24261/22081	S-23 Ultra Low NOx Burner Replacement
24261/22574	S-16 Acid Gas Flare, tip replacement

Application Number(s) (Title V/New Source Review (NSR)	Description
24261/22998	S-165, EVR PTO and annual throughput increase
24261/23701	S-22 Ultra Low NOx Burner Replacement
24273/24379	Consolidation of Consent Decree References
24334/24329	VIP Amendments Cleanup, Condition 20820
24413/24386	Update Fugitive Conditions
24460/24450	Reduction of Source Test Frequency (S-1030, S-1031, S-1059, S-1060)
24828/24644	S-21Ultra Low NOx Burner Replacement
24791/24656	Consolidation of Low Pressure Fuel Gas Conditions
24955/24944	S-101, TK-1791 Throughput Limit

All of the above applications are minor modifications and administrative changes that correct and reflect Valero operations such as changing tank service, removal of inapplicable requirements, and adding requirements per consent decree. None of the above applications resulted in emissions increases with the exception of Applications NSR 13009/TV 13244 where Valero provided offsets by banking credit for combustion emission of S-247 and S-248 furnaces.

- TV 16708/NSR 16707 for S-43, S-44, and S-46 source test frequency corrected in Condition 24198, Part 11. Minor TV permit modification.
- TV 20383/NSR 20558 is for allowance and NOx limits during startup, shutdown, low firing and curtailed operations for S-23/F-401. There is no NOx emission increase from this application. Minor TV permit modification.
- TV 21655/NSR 21350 for S-252 (600 HP) Emergency Diesel H2O Pump replaced S-240 (550 HP). Minor TV permit modification.
- TV 22052/NSR 20690 is for A-68 Thermal Oxidizer at WWTP. superseded by revisions for Consent Decree Condition Consolidation application TV 24273/NSR 24379. Minor TV permit modification.
- TV 22054/NSR 21573 for Dump Stack water seal monitoring and opacity limitation for FCCU/Coker P-69. No emission increase. Minor TV permit modification.
- TV 22603/NSR 22602 NOx Box Condition 21233, source test submittal dates. This project does not result in an increase in emissions and no relaxation of monitoring requirements. Minor TV permit modification.
- TV 22711/NSR 22710 for the addition of the Consent Decree SO2 CEMS monitoring requirement and federal CEMS requirements with the 3-year RATA allowance for S-1059, S-1060. No emission increase. Minor TV permit modification. NOTE: This application has been superseded by revisions for Consent Decree Condition Consolidation application TV 24273/NSR 24379.
- TV 22712/NSR 24190 for S-1010, Hydrogen plant North and South vent source test frequency and specify RACT/Regulation 8-2-301 limit. Minor TV permit modification.
- TV 22726/NSR 22082 for S-1063 Alkylation Guard Beds, fugitive equipment. This was a minor modification with emissions increase from new fugitive components.

- TV 23842/NSR 23841 for Condition 1709 revisions for S-129 marine loading dock condition. No emissions increase. Minor TV permit modification.
- TV 24106/NSR 24094 definition of Reg 9-10-301 emission calculation methodology for intermittently operated furnaces S-34, S-35, S-40, S-41. Minor TV permit modification.
- TV 24261/NSR 22080 is for BAP connection to S-1003 HCU, consolidated with TV 24413/NSR 24386 for updates to fugitive conditions. Minor TV permit modification.
- TV 24261/NSR 22081 for S-23 Ultra Low NOx Burner Replacement. No emission increase. Minor TV permit modification.
- TV 24261/NSR 22574 for S-16 Acid Gas Flare, tip replacement. No emission increase. This minor permit revision is included in Title V Revision A/N 24261.
- TV 24261/NSR 22998 for increase gasoline dispensing throughput for S-165. ERCs provided for emissions increase. Minor TV permit modification.
- TV 24261/NSR 23701 for S-22 Ultra Low NOx Burner Replacement. No emission increase. Minor TV permit modification. The burner replacement will be staged over a multi-year period.
- TV 24273/NSR 24379 removes Consent Decree references from multiple permit conditions and consolidates them into a single permit condition (Condition 24245). Minor TV permit modification.
- TV 24334/NSR 24329 for VIP Amendments Cleanup, Condition 20820. Removal of sources that have been taken out of service and superseded permit conditions and updated Condition 20820. Minor TV permit modification
- TV 22460/NSR 24450 for Reduction of Source Test Frequency (S-1030, S-1031, S-1059, S-1060). No emission increase. Minor TV permit modification since the original condition allows source test reduction if the variability is low.
- TV 24413/NSR 24386 for Fugitive Condition Cleanup. Administrative Permit Amendment.
- TV 24828/NSR 24644 for S-21 Ultra Low NOx Burner Replacement. No emission increase. Minor TV permit modification. The burner replacement will be staged over a multi-year period.
- TV 24791/NSR 24656 for consolidation of low pressure fuel gas H2S and TRS conditions. No emission increase. Minor TV permit modification.
- TV 24955/NSR 24944 for alteration of TK-1791 with addition of throughput limit for change in status from grandfathered to New Source Review. Minor TV permit modification

B. Facility Description

The facility description can be found in the statement of basis that was prepared for the current permit (Revision 1 Permit) that was issued December 16, 2004. It is available upon request.

The Facility Contact was changed from Todd Lopez to Don Cuffel effective November 1, 2011 per written request from Valero on December 14, 2011.

C. Permit Content

The legal and factual basis for the changes being made in this Revision 5 follows. Changes to each permit section are described in the order presented in the permit.

I. Standard Conditions

This section of the permit contains administrative requirements and conditions that apply to all facilities. If the Title IV (Acid Rain) requirements for certain fossil-fuel fired electrical generating facilities or the accidental release (40 CFR § 68) programs apply, the section will contain a standard condition pertaining to these programs. Many of these conditions derive from 40 CFR § 70.6, Permit Content, which dictates certain standard conditions that must be placed in the permit. The language that the District has developed for many of these requirements has been adopted into the BAAQMD Manual of Procedures, Volume II, Part 3, Section 4, and therefore must appear in the permit.

The standard conditions also contain references to BAAQMD Regulation 1 and Regulation 2. These are the District's General Provisions and Permitting rules.

Changes to permit:

- Condition I.A – Regulation effective dates were updated.

Condition I.B.1 – Conditions to Implement Regulation 2, Rule 6, Major Facility Review. The dates of adoption and subsequent renewal application dates have been adjusted for the issuance of the renewal permit.

II. Equipment

This section of the permit lists all permitted or significant sources. Each source is identified by an S and a number (e.g., S24).

Permitted sources are those sources that require a BAAQMD operating permit pursuant to BAAQMD Rule 2-1-302.

Significant sources are those sources that have a potential to emit of more than 2 tons of a "regulated air pollutant," as defined in BAAQMD Rule 2-6-222, per year or 400 pounds of a "hazardous air pollutant," as defined in BAAQMD Rule 2-6-210, per year.

All abatement (control) devices that control permitted or significant sources are listed. Each abatement device whose primary function is to reduce emissions is identified by an A and a number (e.g., A-24). If a source is also an abatement device, such as when an engine controls VOC emissions, it will be listed in the abatement device table but will have an "S" number. An abatement device may also be a source (such as a thermal oxidizer that burns fuel) of secondary emissions. If the primary function of a device is to control emissions, it is considered an abatement (or "A") device. If the primary function of a device is a non-control function, the device is considered to be a source (or "S").

The equipment section is considered to be part of the facility description. It contains information that is necessary for applicability determinations, such as fuel types, contents or sizes of tanks, etc. This information is part of the factual basis of the permit.

Each of the permitted sources has previously been issued a permit to operate pursuant to the requirements of BAAQMD Regulation 2, Permits. These permits are issued in accordance with state law and the District's regulations. The capacities in the permitted sources table are the maximum allowable capacities for each source, pursuant to Standard Condition I.J and Regulation 2-1-403.

Unpermitted sources are exempt from normal District permits pursuant to an exemption in BAAQMD Regulation 2, Rule 1. They may, however, be specifically described in a Title V permit if they are considered significant sources pursuant to the definition in BAAQMD Rule 2-6-239.

Following are explanations of the differences in the equipment list between the Renewal and Revision 5:

<u>Changes to Permit:</u>

- Table IIA Permitted Sources:
  - S-1, revised capacity and throughput per NSR VIP A/N 5846 and VIP Cleanup NSR A/N 24329
  - S-2, revised capacity and throughput per NSR VIP A/N 5846 and VIP Cleanup NSR A/N 24329
  - S-3, removal of source that was replaced by S-1059/S-1060 NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
  - S-4, removal of source that was replaced by S-1059/S-1060 NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
  - S-5, revised capacity and throughput per NSR VIP A/N 5846 and VIP Cleanup NSR A/N 24329
  - S-8, revised throughput per NSR VIP A/N 5846 and VIP Cleanup NSR A/N 24329
  - S-9, revised capacity and throughput per NSR VIP A/N 5846 and VIP Cleanup NSR A/N 24329
  - S-10, removal of source that was taken out of service in 2005, cleanup
  - S-12, removal of source that was taken out of service in 2005, cleanup
  - S-16, revised model, capacity, and throughput per NSR A/N 22574
  - S-21, added description for current and replacement ultra low NOx burners for staged project implementation per NSR A/N 24644
  - S-22, added description for current and replacement ultra low NOx burners for staged project implementation per NSR A/N 23701
  - S-23, added description for replacement ultra low NOx burners per NSR A/N 22081
  - S-38, removal of source that was taken out of service, cleanup
  - S-39, removal of source that was taken out of service, cleanup
  - S-42, removal of source that was taken out of service per NSR A/N 24261
  - S-45, editorial description to throughput per VIP Cleanup NSR A/N 24329

- S-51, revised capacity and throughput per NSR VIP A/N 5846 and VIP Cleanup NSR A/N 24329
- S-52, revised capacity and throughput per NSR VIP A/N 5846 and VIP Cleanup NSR A/N 24329
- S-101, revised description and changed status to New Source Review per NSR A/N 24944
- S-129, added Condition 1709, Part 1b to description of throughput NSR A/N 23842/TV 23841
- S-157, revised capacity and throughput per NSR VIP A/N 5846 and VIP Cleanup NSR A/N 24329
- S-165, increased GDF throughput per NSR A/N 22998
- S-170, removal of source that was taken out of service, cleanup
- S-171, removal of source that was taken out of service, cleanup
- S-232, removal of source from service Dec 2010 per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
- S-233, removal of source from service Dec 2010 per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
- S-236, revised capacity and throughput per NSR VIP A/N 5846 and VIP Cleanup NSR A/N 24329
- S-240, Removed (replaced by S-252)
- S-252, added per NSR A/N 21350
- S-1003, revised capacity and throughput per NSR VIP A/N 5846 and VIP Cleanup NSR A/N 24329
- S-1004, revised capacity and throughput per NSR VIP A/N 5846 and VIP Cleanup NSR A/N 24329
- S-1006, revised capacity and throughput per NSR VIP A/N 5846 and VIP Cleanup NSR A/N 24329
- S-1012, revised capacity and throughput per NSR VIP A/N 5846 and VIP Cleanup NSR A/N 24329
- S-1034, revised capacity and throughput based on source description on ATC/PTO, limit is not a NSR Review based condition
- S-1035, revised capacity and throughput based on source description on ATC/PTO, limit is not a NSR Review based condition
- S-1036, revised capacity per ULSD NSR A/N 13244 and and VIP Cleanup NSR A/N 24329
- S-1049, revised capacity and throughput based on source description on ATC/PTO, limit is not a NSR Review based condition
- S-1050, revised capacity and throughput based on source description on ATC/PTO, limit is not a NSR Review based condition
- S-1051, revised capacity per ULSD NSR A/N 13244 and and VIP Cleanup NSR A/N 24329
- S-1052, revised capacity per ULSD NSR A/N 13244 and and VIP Cleanup NSR A/N 24329
- S-1063, added equipment per NSR A/N 22082

- Table IIB Exempt Sources:
  - No changes

- Table IIC Abatement Devices:

- A-1 through A-5, removal of abatement devices from service Dec 2010 per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
- A-13, Condition 19466 superceded by Condition 24198 per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
- A-26, Condition 19466 superceded by Condition 24198 per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
- A-36, Split requirements to have one row for each regulation. Added Condition 11880[16] per A/N 20690 (consolidation with A/N 24379 results in replacement of 11880 with Condition 24245)
- A-37, Split requirements to have one row for each regulation. Added Condition 11879[18] per A/N 20690 (consolidation with A/N 24379 results in replacement of 11880 with Condition 24245)
- A-52 and A-53, removal of abatement devices from service Dec 2010 per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
- A-54 and A-55, removal of abatement devices from service Dec 2010 per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
- A-57, Split requirement to have one row for each regulation. Corrected Operating Parameter and Limit or Efficiency columns. Added Condition 11879[12] per A/N 20690.
- A-65, Split requirement to have one row for each regulation. Corrected Operating Parameter and Limit or Efficiency columns. Added Condition 11880[3] per A/N 20690.
- A-68, Added new abatement device per A/N 20690
- S-40, Replaced Condition 15512, Part 1 with Condition 15512, Part 2 per NSR A/N 21490
- S-41, Replaced Condition 15512, Part 1 with Condition 15512, Part 2 per NSR A/N 21490

III. Generally Applicable Requirements

This section of the permit lists requirements that generally apply to all sources at a facility including insignificant sources and portable equipment that may not require a District permit. If a generally applicable requirement applies specifically to a source that is permitted or significant, the standard will also appear in Section IV and the monitoring for that requirement will appear in Sections IV and VII of the permit. Parts of this section apply to all facilities (e.g., particulate, architectural coating, odorous substance, and sandblasting standards). In addition, standards that apply to insignificant or unpermitted sources at a facility (e.g., refrigeration units that use more than 50 pounds of an ozone-depleting compound) are placed in this section.

Changes to permit:

Language has been added to Section III to clarify that this section contains requirements that may apply to temporary sources. This provision allows contractors that have "portable" equipment permits that require them to comply with all applicable requirements to work at the facility on a temporary basis, even if the permit does not specifically list the temporary source. Examples are temporary sand-blasting or soil-vapor extraction equipment.

The dates of adoption or approval of the rules and their "federal enforceability" status in Table III have also been updated:

- BAAQMD and SIP Regulation 1
- BAAQMD Regulation 2, Rule 1
- BAAQMD Regulation 10-1 (NSPS Subpart A, General Provisions)

IV. Source-Specific Applicable Requirements

This section of the permit lists the applicable requirements that apply to permitted or significant sources. These applicable requirements are contained in tables that pertain to one or more sources that have the same requirements. The order of the requirements is:

- District Rules
- SIP Rules (if any) are listed following the corresponding District rules. SIP rules are District rules that have been approved by EPA for inclusion in the California State Implementation Plan. SIP rules are “federally enforceable” and a “Y” (yes) indication will appear in the “Federally Enforceable” column. If the SIP rule is the current District rule, separate citation of the SIP rule is not necessary and the “Federally Enforceable” column will have a “Y” for “yes”. If the SIP rule is not the current District rule, the SIP rule or the necessary portion of the SIP rule is cited separately after the District rule. The SIP portion will be federally enforceable; the non-SIP version will not be federally enforceable, unless EPA has approved it through another program.
- Other District requirements, such as the Manual of Procedures, as appropriate.
- Federal requirements (other than SIP provisions)
- BAAQMD permit conditions. The text of BAAQMD permit conditions is found in Section VI of the permit.
- Federal permit conditions. The text of Federal permit conditions, if any, is found in Section VI of the permit.

Section IV of the permit contains citations to all of the applicable requirements. The text of the requirements is found in the regulations, which are readily available on the District’s or EPA’s websites, or in the permit conditions, which are found in Section VI of the permit. All monitoring requirements are cited in Section IV. Section VII is a cross-reference between the limits and monitoring requirements. A discussion of monitoring is included in Section C.VII of this permit evaluation/statement of basis.

Complex Applicability Determinations

CARB and Federal GHG Mandatory Reporting Rule – Removal

In their responses to comments that were part of the Preamble to the GHG Monitoring Rule (40 CFR 98) published in the Federal Register (56288 Federal Register / Vol. 74, No. 209 / Friday, October 30, 2009) EPA did not view the above rule as an "applicable requirement" subject to Title V and stated that the GHG monitoring rule was created under the authority of Section 114 and not Section 112 of the Clean Air Act (CAA). Because 40 CFR Part 71 clarifies that Title V permits shall list requirements of Section 112 of CAA, the 40 CFR Part 98 "Mandatory Greenhouse Gas Reporting" and California Code of Regulation, Title 17, Subchapter 10, Article 2 applicable requirements were deleted from Table IV-Refinery.

Applicability of 40 CFR 63 CC and 40 CFR 63 Y for S-129, Marine Loading Dock

The S-129 marine loading operation is subject to 40 CFR 63, Subpart CC which refers to 40 CFR 63, Subpart Y. The marine loading operation is not subject to the Subpart Y MACT and RACT emission standards, which are based on emissions and throughput thresholds, respectively. Condition 1709 was changed in Application TV 23842/NSR 23841 to add the New Source Review throughput limit, which is less than the throughput threshold for RACT applicability. This limit ensures that the source is not subject to the RACT standards in Subpart Y. The loading operation is subject to the recordkeeping requirements to demonstrate that the MACT exemptions continue to apply.

Applicability of 40 CFR 63 CC for Heat Exchange Systems, S-29 Cooling Tower

The Valero Benicia refinery owns and operates a heat exchanger system associated with a petroleum refining process unit meeting the criteria in 40 CFR 63.640(a) and which are is in organic hazardous air pollutants (HAP) service, as defined in 40 CFR 63.641. The heat exchange system is a closed-loop system that provides cooling water for all of the Refinery's process units, and is serviced by Cooling Towers, CT-2401 and CT-2402 which are permitted as BAAQMD Source No. 29. The heat exchange system includes 264 individual heat exchanges, 93 or which are in organic HAP service, with a compliance date of October 29, 2012.

Consistent with the requirements of 40 CFR 63.655(f)(1), a Notice of Compliance Status (NOCS) report must be submitted within 150 days after the compliance date. The NOCS report may be submitted in an operating permit application, in an amendment to an operation permit application, in a separate submittal, or in any combination of the three. As specified in 40 CFR 63.655(f)(1)(vi), the NOCS report must identify each heat exchange system that is subject to the requirements of Subpart CC. BAAQMD Application Number 24261 for this Title V permit opening serves as the NOCS for the S-29 Cooling Tower. This application for administrative permit amendments requests that Title V permit Tables IV-C5 and VII-C5 for the S-29 Cooling Tower be modified to include the applicable citations for 40 CFR 63 Subpart CC to identify it as an affected unit subject to the VOC emission and monitoring requirements for heat exchange systems.

Applicability of NSPS Appendix F Requirements for FGCDs

NSPS Appendix F contains Quality Assurance Procedures for continuous emission monitoring systems including Procedure 1 for gas monitors. NSPS Subpart A General Requirements 60.13 requires all continuous monitoring systems required by any NSPS subpart to be subject to the provisions of Appendix F if the continuous monitoring system is used to demonstrate compliance with emission limits on a continuous basis.

Currently in the Title V permit, the following sources are shown subject to Appendix F, Procedure 1:

S5 FCCU, Catalyst Regenerator
S7 F103, Process Furnace
S20 F104, Process Furnace
S34 F2905, Process Furnace
S24 F601, Process Furnace
S35 F2906, Process Furnace
S21 F301, Hydrogen Reformer Furnace
S22 F351, Hydrogen Reformer Furnace
S23 F401, HCU Recycle Gas Furnace
S25 F701, Process Furnace
S30 F2901, Process Furnace
S31 F2902, Process Furnace
S32 F2903, Process Furnace
S33 F2904, Process Furnace
S40 SG2301, Steam Generator
S41 SG2302, Steam Generator
S173 F902, Process Furnace
S220 F4460, Hot Oil Furnace
S237 SG1032, Steam Generator
S247 F5401, Reactor Charge Heater
S248 F5402, Stripper Reboiler Heater
S1030 GT4901, Turbine (Cogen)
S1031 SG4901, Steam Generator (Cogen)
S1062 F5501, Hydrogen Reformer Furnace

With the exception of S-1062 (F-5501), Hydrogen Reformer Furnace, these sources are subject to the sulfur standards of NSPS Subpart J, and the associated monitoring requirements. S-1062, when constructed, would be subject to the sulfur standards and associated monitoring requirements of NSPS Subpart Ja. The fired heaters (Fuel Gas Combustion Devices – FGCDs) comply with the H_2S limit in the fuel gas and require continuous monitoring. The S-5 Fluid Catalytic Cracking Unit complies with the SO_2 limit and requires continuous SO_2 monitoring at the outlet of the control device for the unit.

As documented in the Engineering Evaluation for Application No. 23854 for Plant No. 14628 (Tesoro Golden Eagle Refinery), in January 2011, Tesoro sent an inquiry to EPA requesting clarification on how to apply the requirements of Appendix F, Procedure 1 to the gas chromatograph used to monitor H_2S in the fuel gas for the affected FGCDs. In the response, EPA's Mr. Foston Curtis stated the following in an e-mail dated 1/25/2011:

> *The H2S CEMS under Subpart J is an excess emissions monitor and not a continuous compliance monitor. The qualifying language in the subparts is not as clear as it should be on this. The requirement to report excess emissions in 60.105(e)(3)(ii) is one indicator. Also, there is no mention of Appendix F in 60.105(a)(4) nor minimum data requirements (needed for continuous compliance CEMS). The only CEMS used for continuous compliance under Subpart J is the SO2/O2 CEMS on the FCCU catalyst regenerator. Note in 105(a)(12) that the language for this CEMS contains Appendix F, minimum data, and methods of collecting data when the CEMS is not operating.*

Therefore, based on this message from Mr. Curtis as documented in the Engineering Evaluation for Application No. 23854 for Plant No. 14628, Valero is proposing that Appendix F, Procedure 1 is not applicable to the H_2S fuel gas monitors for the fired heaters/FGCDs. Again, the exception is S-1062 which when constructed would be subject to NSPS Ja which specifically calls out Appendix F requirements for fired heaters at 60.107(a)(2)(ii). Therefore, when constructed, S-1062 would be subject to the QA/QC requirements of Appendix F.

However, the Consent Decree requires compliance with Appendix F, Procedure 1, for the fired heaters/FGCDs, as codified in Permit Condition 24245, Part 21. Part 21 specifies the QA/QC procedures required by Appendix F with the exception of an allowance for a decreased frequency for RAA or RATAs. Appendix F requires that a RAA or RATA be conducted every year whereas Condition 24245, Part 21 allows RAA or RATA to be conducted only once every three years. Valero is proposing to retain the requirements of Appendix F, Procedure 1 for the fired heaters/FGCDs in the Title V Permit, with the following clarification added: "excluding Sections 5.1.1, 5.1.3, and 5.1.4 which are superseded by BAAQMD Condition 24245, Part 21)".

The S-1030 and S-1031 (Cogeneration turbine and heat recovery steam generator) and the S-247 and S-248 (DHF Furnaces F-5401 and F-5402) are fired sources, but are not subject to the Consent Decree requirements. Therefore, Valero proposes that the Appendix F, Procedure 1 requirement for these sources be removed completely from the Title V Permit because there is no superseding Consent Decree requirement.

Condition 19177, Part 34 states the compliance with the CEM requirement of Part 75 was removed because the Phase I Cogen units (S-1030 and S-1031) do not trigger Acid Rain provisions, which would have been triggered only if Valero had constructed the Phase II Cogen Units.

<u>Changes to permit:</u>

The dates of adoption or approval of the rules and their "federal enforceability" status in Section IV have also been updated:

- BAAQMD Regulation 1
- BAAQMD Regulation 2, Rule 1
- BAAQMD Regulation 9, Rule 10
- SIP Regulation 9, Rule 10 – added citations 9-10-601 and 9-10-603 (revised citations in Regulation 9, Rule 10 are not SIP approved)
- BAAQMD Regulation 10
- BAAQMD Regulation 10-1 (NSPS Subpart A, General Provisions)
- 40 CFR 60, Subpart A
- 40 CFR 60, Subpart Db

- 40 CFR 61, Subpart A
- 40 CFR 63, Subpart A
- CARB ATCM 93115

The applicability has been updated based on new adopted versions of the following rules:

- BAAQMD Regulation 9, Rule 10

Administrative changes made throughout Section IV

- BAAQMD 8-5-501: Corrected federal enforceability to "Y" and deleted SIP 8-5-501 citation.
- BAAQMD 8-5-502: The description of Regulation 8-5-502 was modified throughout Section IV to include the exemptions from the annual source test requirements.
- 40 CFR 63, Subpart CC, Updated regulatory applicability throughout Section IV and VII based on amendments on 10/28/2009 and 6/30/2010.

- Table IV – Refinery
  Condition 19466 superceded by Condition 24198 per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
  - 40 CFR Part 98, Deleted Mandatory Greenhouse Gas Reporting Requirements. TV A/N 24261
  - CA Code of Regulation, Rule 17, Subchapter 10, Article 2, Deleted Mandatory Reporting of Greenhouse Gas Emissions (CARB). TV A/N 24261
- Table IV – A1 (S-1)
  - 40 CFR 63.1568, revise to show requirements for sources subject to NSPS J based on Consent Decree requirement
  - Condition 125 Parts 9 and 10, deleted per NSR A/N 24379
  - Condition 19466 superceded by Condition 24198 per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
  - Condition 24245, added new conditions per NSR A/N 24379
- Table IV – A2 (S-2)
  - 40 CFR 63.1568, revise to show requirements for sources subject to NSPS J based on Consent Decree requirement
  - Condition 126 Parts 9 and 10, deleted per NSR A/N 24379
  - Condition 19466 superceded by Condition 24198 per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
  - Condition 24245, added new conditions per NSR A/N 24379
- Table IV – A3 (S-3, S-4)
  - Deleted table for removal of sources that were replaced by S-1059/S-1060 per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
- Table IV-A3 (renumbered) (S-1059, S-1060)
  - Renumbered to Table IV-A.3 from IV-A3.1
  - BAAQMD Reg 9, Rule 10 applicability removed for new CO Furnaces per newly adopted Reg 9, Rule 10 and VIP Amendments per NSR A/N 16937
  - NSPS 40 CFR 60 Appendix B, PS 2, added per NSR A/N 22710 (superseded by NSR A/N 24379)

  - NSPS 40 CFR 60 Appendix F, Procedure 1, added per NSR A/N 22710 and revised to reference Consent Decree Condition 24245 per NSR A/N 24379 (supersedes NSR A/N 22710)
  - Condition 20820 Parts 21, 63.e, 70, 75, and 76, deleted because they have been completed or no longer apply per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
  - Condition 20820, Parts 63.f and 63.g, added per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
- Table IV-A4 (S-5)
  - NSPS Subpart J Standards for SO2, added per NSR A/N 24379
  - NSPS Appendix B, Performance Specification 2, deleted per NSR A/N 24379
  - NSPS Appendix F, Performance Specification 1, added per NSR A/N 24379
  - NESHAPS 40 CFR 63 Subpart UUU, revised per NSR A/N 24379 to reflect NSPS J compliance as required by Consent Decree
  - Condition 19466 superceded by Condition 24198 per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
  - Condition 20820, Parts 21 and 22, deleted per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
  - Condition 24198, Part 17, added per NSR A/N 21573
  - Condition 24239, Parts 1 – 6, deleted per NSR A/N 24379
  - Condition 24245, added new conditions per NSR A/N 24379
- Table IV-A5 (S-6)
  - Condition 19466 superceded by Condition 24198 per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
  - Condition 20820, Parts 21 and 22, deleted per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
  - Condition 24198, Part 17, added per NSR A/N 21573
- Table IV-A6.1 (S-7, S-20, S-34)
  - BAAQMD Regulation 2, Rule 9, deleted portions that no longer apply due to shutdown of S-3/S-4 CO Furnaces per NSR A/N 16937
  - BAAQMD Regulation 10-14, added regulation per NSR A/N 24379
  - NSPS Appendix F, Procedure 1, revised reference to Condition 24245 per NSR A/N 24379
  - Condition 19466 superceded by Condition 24198 per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
  - Condition 20820, deleted per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
  - Condition 24245, deleted Parts 4 – 7 per NSR A/N 24379
  - Condition 24245, added new conditions per NSR A/N 24379
  - Condition 25158 added new condition per NSR A/N 24094
  - Condition 25342, added new conditions per NSR A/N 24656
- Table IV-A6.2 (S-24, S-35)
  - BAAQMD Regulation 2, Rule 9, deleted portions that no longer apply due to shutdown of S-3/S-4 CO Furnaces per NSR A/N 16937
  - BAAQMD Regulation 10-14, added regulation per NSR A/N 24379
  - NSPS Appendix F, Procedure 1, revised reference to Condition 24245 per NSR A/N 24379

  - Condition 19466 superceded by Condition 24198 per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
  - Condition 25158 added new condition per NSR A/N 24094
  - Condition 24245, deleted Parts 4, 5, 6, and 7 per NSR A/N 24379
  - Condition 24245, added new conditions per NSR A/N 24379
  - Condition 25342, added new conditions per NSR A/N 24656
- Table IV-A6.4 (S-26)
  - BAAQMD Regulation 2, Rule 9, deleted portions that no longer apply due to shutdown of S-3/S-4 CO Furnaces per NSR A/N 16937
  - BAAQMD Regulation 10-14, added regulation per NSR A/N 24379
  - NSPS Subpart J, added per NSR A/N 24379
  - NSPS Appendices F and J, added per NSR A/N 24379
  - Condition 19466 superceded by Condition 24198 per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
  - Condition 24245, added new conditions per NSR A/N 24379
  - Condition 25342, added new conditions per NSR A/N 24656
- Table IV-A8.1 (renumbered) (S-16)
  - Renumbered to IV-A7.1 from A8.1
  - NSPS Subpart J and 40CFR60.100(b) deleted per Consent Decree exemption from NSPS J at Condition 24245, Part 38 per NSR A/N 24379
  - Condition 24245 added per NSR A/N 24379
- Table IV-A8.2 (renumbered) (S-18)
  - Renumbered to IV-A7.2 from A8.2
  - Condition 24245 Parts 1,2, and 3 replaced with Parts 35 and 42 – 46 per NSR A/N 24379
- Table IV-A8.3 (renumbered) (S-17)
  - Renumbered to IV-A7.3 from A8.3
  - Condition 24245 Parts 35 and 42 – 46 added per NSR A/N 24379
- Table IV-A9 (renumbered) (S-19)
  - Renumbered to IV-A8 from A9
  - Condition 24245 Parts 1,2, and 3 replaced with Parts 35 and 42 – 46 per NSR A/N 24379
- Table IV-A10 (renumbered) (S-21, S-22)
  - Renumbered to IV-A9 from A10
  - BAAQMD Regulation 2, Rule 9, deleted portions that no longer apply due to shutdown of S-3/S-4 CO Furnaces per NSR A/N 16937
  - NSPS Appendix F, Procedure 1, revised reference to Condition 24245 per NSR A/N 24379
  - Condition 10574, Parts 13, 14, 15, and 16 deleted per NSR A/N 24656
  - Condition 10574, Part 17 partially deleted per NSR A/N 24656
  - Condition 19466 superceded by Condition 24198 per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
  - Condition 20820, Part 76, corrected to Part 77, typographical correction
  - Condition 24197, Parts 13, 14, 15, and 16 deleted per NSR A/N 24656
  - Condition 24197, Part 17 partially deleted per NSR A/N 24656
  - Condition 25342, added new conditions per NSR A/N 24656
- Table IV-A11 (renumbered) (S-23)
  - Renumbered to IV-A10 from A11

  - BAAQMD Regulation 2, Rule 9, deleted portions that no longer apply due to shutdown of S-3/S-4 CO Furnaces per NSR A/N 16937
  - NSPS Appendix F, Procedure 1, revised reference to Condition 24245 per NSR A/N 24379
  - Condition 14318, Parts 2A and 2B, added new conditions per NSR A/N 20558
  - Row for H2S, Condition 14318 replaced by Condition 25342 per NSR A/N 24656
  - Condition 19466 superceded by Condition 24198 per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
  - Condition 24245, added new conditions per NSR A/N 24379
  - Condition 25342, added new conditions per NSR A/N 24656
- Table IV-A12 (renumbered) (S-25, S-30, S-31, S-32, S-33)
  - Renumbered to IV-A11 from A12
  - BAAQMD Regulation 2, Rule 9, deleted portions that no longer apply due to shutdown of S-3/S-4 CO Furnaces per NSR A/N 16937
  - BAAQMD Regulation 10-14, added regulation per NSR A/N 24379
  - NSPS Appendix F, Procedure 1, revised reference to Condition 24245 per NSR A/N 24379
  - Condition 19466 superceded by Condition 24198 per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
  - Condition 24245, deleted Parts 4, 5, 6, and 7 per NSR A/N 24379
  - Condition 24245, added new conditions per NSR A/N 24379
  - Condition 25342, added new conditions per NSR A/N 24656
- Table IV-A13.1 (renumbered) (S-36, S-46, S-56)
  - Renumbered to IV-A12.1 from A13.1
  - Condition 19466 superceded by Condition 24198 per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
- Table IV-A13.2 (renumbered) (S-43, S-44, S-46)
  - Renumbered to IV-A12.2 from A13.2
  - BAAQMD Reg 9-9-301.1.1, deleted, past due requirement, new requirement per 9-9-301.2 effective date of 1/1/2010
  - BAAQMD Reg 9-9-301.2 and 301.4, removed past due future effective date of 1/1/2010
  - Condition 19466 superceded by Condition 24198 per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
- Table IV-A14.1 (renumbered) (S-37)
  - Renumbered to IV-A13.1 from A14.1
- Table IV-A14.2 (renumbered) (S-45)
  - Renumbered to IV-A13.2 from A14.2
  - BAAQMD Reg 9-9-301.2 and 301.4, removed past due future effective date of 1/1/2010
- Table IV-A15 (renumbered) (S-40)
  - Renumbered to IV-A14 from A15
  - BAAQMD Regulation 2, Rule 9, deleted portions that no longer apply due to shutdown of S-3/S-4 CO Furnaces per NSR A/N 16937
  - NSPS Appendix F, Procedure 1, revised reference to Condition 24245 per NSR A/N 24379
  - Condition 9296, Parts D4 and D6, deleted per A/N 24656
  - Condition 25158 added new condition per NSR A/N 24094
  - Condition 19466 superceded by Condition 24198 per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329

  - Condition 24245, added new conditions per NSR A/N 24379
  - Condition 25342, added new conditions per NSR A/N 24656

- Table IV-A16 (renumbered) (S-41)
  - Renumbered to IV-A15 from A16
  - BAAQMD Regulation 2, Rule 9, deleted portions that no longer apply due to shutdown of S-3/S-4 CO Furnaces per NSR A/N 16937
  - NSPS Appendix F, Procedure 1, revised reference to Condition 24245 per NSR A/N 24379
  - Condition 19466 superceded by Condition 24198 per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
  - Condition 25158 added new condition per NSR A/N 24094
  - Condition 24245, added new conditions per NSR A/N 24379
  - Condition 25342, added new conditions per NSR A/N 24656
- Table IV-A17 (S-42)
  - Deleted table, permit has been surrended for S-42 (F-1060)
- Table IV-A18 (renumbered) (S-173)
  - Renumbered to IV-A16 from A18
  - BAAQMD Regulation 2, Rule 9, deleted portions that no longer apply due to shutdown of S-3/S-4 CO Furnaces per NSR A/N 16937
  - NSPS Appendix F, Procedure 1, revised reference to Condition 24245 per NSR A/N 24379
  - Condition 19466 superceded by Condition 24198 per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
  - Condition 24245, added new conditions per NSR A/N 24379
  - Condition 25342, added new conditions per NSR A/N 24656
- Table IV-A19 (renumbered) (S-220)
  - Renumbered to IV-A17 from A19
  - BAAQMD Regulation 2, Rule 9, deleted portions that no longer apply due to shutdown of S-3/S-4 CO Furnaces per NSR A/N 16937
  - NSPS Appendix F, Procedure 1, revised reference to Condition 24245 per NSR A/N 24379
  - 40 CFR 60, Subpart Db, 60.46b(a), editorial correction to Regulation Description
  - Condition 10574, Parts 4, 5, and 7 deleted per NSR A/N 24386
  - Condition 10574, Parts 13, 14, 15, and 16 deleted per NSR A/N 24656
  - Condition 10574, Part 17 partially deleted per NSR A/N 24656
  - Condition 19466 superceded by Condition 24198 per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
  - Condition 24197, Parts 4, 5, and 7 deleted per NSR A/N 24386
  - Condition 24197, Parts 13, 14, 15, and 16 deleted per NSR A/N 24656
  - Condition 24197, Part 17 partially deleted per NSR A/N 24656
  - Condition 24245, added new conditions per NSR A/N 24379
  - Condition 25342, added new conditions per NSR A/N 24656
- Table IV-A20 (renumbered) (S-237)
  - Renumbered to IV-A18 from A20
  - NSPS Appendix F, Procedure 1, revised reference to Condition 24245 per NSR A/N 24379
  - Condition 16027, Part 1deleted per NSR A/N 24386
  - Condition 16027, Parts 2, 4, 5, 6, and 7 deleted per NSR A/N 24656

  - 40 CFR 60, Subpart Db, 60.46b(a), editorial correction to Regulation Description
  - Condition 24245, added new conditions per NSR A/N 24379
  - Condition 25342, added new conditions per NSR A/N 24656
- Table IV-A21 (renumbered) (S-241, S-242)
  - Removed S-240 (replaced by S-252)
  - Renumbered to A19.1 from A21for S-241 and S-242 only
  - BAAQMD Reg 9-8-330.3 – removed future effective date
  - CARB ATCM – updated regulatory effective date and renumbered based last update
  - Condition 24310 – updated CARB ATCM citations used as basis
- Table IV-A19.2 (S-252)
  - New table for S-252 per NSR A/N 21350
- Table IV-A22.1 (renumbered) (S-1030)
  - Renumbered to IV-A201.1 from A22.1
  - BAAQMD Reg 9-9-301.3, removed past due future effective date of 1/1/2010
  - NSPS Appendix F, Procedure 1, removed per NSR A/N 24379 (see complex applicability discussion above)
  - Condition 19177, Part 34, deleted because Phase I Cogen is not required to meet Part 75 Acid Rain CEM requirements
  - Condition 19177, Parts 35 and 36, deleted per NSR A/N 24656
  - Condition 19177, Part 39, updated description to annual source test per NSR A/N 24450
  - Conditon 19177, Part 40, revised description to clarify quartery source test per NSR A/N 24450
  - Condition 25342, added new conditions per NSR A/N 24656
- Table IV-A22.2 (renumbered) (S-1031)
  - Renumbered to IV-A20.2 from A22.2
  - 40 CFR 60, Subpart Db, 60.46b(a), editorial correction to Regulation Description
  - NSPS Appendix F, Procedure 1, removed per NSR A/N 24379 (see complex applicability discussion above)
  - Condition 19177, Part 34, deleted because Phase I Cogen is not required to meet Part 75 Acid Rain CEM requirements
  - Condition 19177, Parts 35 and 36, deleted per NSR A/N 24656
  - Condition 19177, Part 39, updated description to annual source test per NSR A/N 24450
  - Conditon 19177, Part 40, revised description to clarify quartery source test per NSR A/N 24450
  - Condition 25342, added new conditions per NSR A/N 24656
- Table IV-A23 (renumbered) (S-243)
  - Renumbered to IV-A21 from A23
  - BAAQMD Reg 9-8-330.3 – removed future effective date
  - CARB ATCM – updated regulatory effective date and renumbered based last update
  - Condition 24375 – updated CARB ATCM citations used as basis
- Table IV-A24 (renumbered) (S-247, S-248)
  - Renumbered to IV-A22 from A24
  - Condition 22949, Parts 3, 4, 5, and 6 deleted per NSR A/N 24656
  - Condition 25342, added new conditions per NSR A/N 24656
- Table IV-A25 (renumbered) (S-251)

  - Renumbered to IV-A23 from A25
  - BAAQMD Reg 9-8-330.3 – removed future effective date
  - CARB ATCM – updated regulatory effective date and renumbered based last update
  - 40 CFR 60, Subpart IIII – updated regulatory effective date, removed future effective date, and updated applicability to be consistent with latest regulation
  - 40 CFR 63, Subpart ZZZZ – updated regulatory effective date
  - 40 CFR 80, Subpart I – removed future effective date
  - Condition 24309 – updated CARB ATCM citations used as basis
- Table IV-A26 (renumbered) (S-1061)
  - Renumbered to IV-A24 from A26
  - Condition 20820, Parts 3, 4, 5, and 6 deleted per NSR A/N 24656
  - Condition 20820, Part 16 revised per NSR A/N 24656
  - Condition 20820, Part 76, corrected to Part 77, typographical correction
  - Condition 25342, added new conditions per NSR A/N 24656
- Table IV-B1 (S-8)
  - Condition 19466 superceded by Condition 24198 per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
- Table IV-B2 (S-11)
  - Condition 19466 superceded by Condition 24198 per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
- Table IV-B4 (S-176)
  - Condition 19466 superceded by Condition 24198 per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
- Table IV-B5 (S-209)
  - Condition 9296, Part F1 deleted per NSR A/N 24386
- Table IV-B6 (S-232)
  - Deleted table for removal of sources per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
- Table IV-B7 (S-233)
  - Deleted table for removal of sources per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
- Table IV-B8 (Renumbered) (S-1027)
  - Renumbered to IV-B6 from B8
- Table IV-B9.1 (Renumbered) (S-201)
  - Renumbered to IV-B7.1 from B9.1
- Table IV-B9.2 (Renumbered) (S-202)
  - Renumbered to IV-B7.2 from B9.2
- Table IV-C2 (S-157)
  - Condition 20820 moved for correct alphanumeric listing of conditions
  - Condition 23446, Part 1, revised basis per NSR A/N 24379
- Table IV-C3 (S-159)
  - Condition 19466 superceded by Condition 24198 per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
- Table IV-C4.1 (S-160)

  - Condition 19466 superceded by Condition 24198 per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
- Table IV-C4.2 (S-167, S-168)
  - Condition 19466 superceded by Condition 24198 per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329

- Table IV-C5 (S-29)
  - MACT CC Heat Exchanger requirements added
- Table IV-C6 (S-239)
  - BAAQMD Regulation 8, Rule 2 – regulatory effective date correct to current date
- Table IV-D1 (S-1004)
  - Condition 18794, Parts 1 and 2 deleted per NSR A/N 24329
- Table IV-D2 (S-1006)
  - Condition 815, Parts 1 and 2 deleted per NSR A/N 24329
  - Condition 20820, Parts 21 and 23 deleted per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
  - Condition 20820, Part 50, description revised per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
- Table IV-D4 (S-1010)
  - Condition 15512, Part 2, added new condition per NSR 21490
- Table IV-D6 (S-1014)
  - Condition 9296, Part F1 deleted per NSR A/N 24386
- Table IV-D7 (S-1024)
  - Condition 9296, Part F2 moved for correct alphanumeric listing of conditions
  - Condition 9296, Part F1 deleted per NSR A/N 24386
  - Condition 9296, Part F2 moved for correct alphanumeric listing of conditions
- Table IV-D10 (S-1036, S-1051, S-1052)
  - Condition 20820, deleted per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
- Table IV-D11 (S-1034, S-1035, S-1049, S-1050)
  - Condition 9296, Part F1 deleted per NSR A/N 24386
  - Condition 20820, deleted per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
  - Condition 24080, Parts 3 and 4 added per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
- Table IV-D12 (S-51, S-52)
  - Condition 24754, Parts 2 and 3, added new conditions per NSR 22080
  - Condition 9296, Part F1 deleted per NSR A/N 24386
- Table IV-D13 (S-1062)
  - Condition 20820, Part 1, replaced with Parts 2.b and c per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
  - Condition 20820, Part 76, revised to Part 77 to correct typographical error
- Table IV-D14 (S-1011)
  - Condition 9296, Part F1 deleted per NSR A/N 24386

- Table IV-D15 (S-1063)
  - New table for S-1063 per NSR 22082
- Table IV-E2 (S-165)
  - Condition 20666, removed basis per NSR 22998
- Table IV-F (S-129)
  - Renumbered to IV-F from F1 for consistency with Section VII
  - 40 CFR 63, Subpart CC. applicability added per NSR 23481
  - 40 CFR 63, Subpart Y, reference to Subpart CC added per NSR 23481
  - Condition 1709, added Part 1b, loading throughput and deleted Parts 4, 8, 9, 10, 11, and 12 monitoring based on documented compliance and redundancy with Reg 8, Rule 44 marine loading monitoring requirements that were adopted after Condition 1709 was written, per NSR 23481
  - Condition 20820, Part 23, revised to exclude trigger actions per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
  - Condition 20820, Part 29, deleted per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
- Table IV-H1.1 (S-151)
  - Regulation 11, Rule 12, removed federal enforceability from title row
  - 40 CFR 61 Subpart FF, corrected typos in citation numbers in two rows
  - Condition 10574, Parts 1, 4, 5, 7, 10, and 11 deleted per NSR A/N 24386
  - Condition 24197, Parts 1, 4, 5, 7, 10, and 11 deleted per NSR A/N 24386
- Table IV-H1.2 (S-156)
  - Regulation 11, Rule 12, removed federal enforceability from title row
  - 40 CFR 61 Subpart FF, corrected typos in citation numbers in two rows
- Table IV-H3 (S-161)
  - Regulation 11, Rule 12, removed federal enforceability from title row
- Table IV-H4.2 (S-194, S-195)
  - Modified title row to add abatement devices
  - Modified Condition 11879 per NSR 20690
  - Condition 11879, Part 18, replaced by Condition 24245 per NSR A/N 24379
- Table IV-H5.2 (S-197, S-198)
  - Modified title row to add abatement devices
  - Modified Condition 11879 per NSR 20690
  - Condition 11879, Part 18, replaced by Condition 24245 per NSR A/N 24379
- Table IV-H7 S-131, S-150, S-200)
  - Add A-68 and modify condition 11879 per NSR 20690
  - Condition 11879, Part 18, replaced by Condition 24245 per NSR A/N 24379
- Table IV-H8 (S-199)
  - Add A-68 and modify condition 11879 per NSR 20690
  - Condition 11879, Part 18, replaced by Condition 24245 per NSR A/N 24379
- Table IV-H9 (Drain Systems)
  - Note moved from Table IV-I0. See applicability determination for 40 CFR 60 Subpart QQQ.
- Table IV-I0 (Fugitives Matrix)

- Delete column for 40 CFR 60 Subpart QQQ. Subpart QQQ requirements are in Table IV-H9 and monitoring requirements are in Table VII-H9. See applicability determination for 40 CFR 60 Subpart QQQ.
- Header row – update note references
- Row for S-209, deleted Condition 9296, Part F1 per NSR 24386
- Row for S-1003, added new condition 24754 per NSR 22080
- Row for S-1003, deleted Condition 10574, Parts 1, 4, 5, 7, 8, and 11 per NSR 24386
- Row for S-1003, deleted applicability for 40 CFR 60, Subpart GGGa per NSR 24386
- Row for S-1003, deleted Condition 24754, Part 2 per NSR 24386
- Row for S-1007, deleted Condition 10574, Parts 1, 4, 5, 7, 8, 11, and 52 per NSR 24386
- Row for S-1011, deleted Condition 10574, Parts 1, 4, 5, 7, 8, and 11 per NSR 24386
- Row for S-1011, deleted applicability for 40 CFR 60, Subpart GGGa per NSR 24386
- Row for S-1014, deleted applicability for 40 CFR 60, Subpart GGGa per NSR 24386
- Row for S-1020, deleted Condition 10574, Parts 1, 4, 5, 7, 8, and 11 per NSR 24386
- Row for S-1021, deleted Condition 10574, Parts 1, 4, 5, 7, 8, and 11 per NSR 24386
- Row for S-1022, deleted Condition 10574, Parts 1, 4, 5, 7, 8, and 11 per NSR 24386
- Row for S-1023, deleted Condition 10574, Parts 1, 4, 5, 7, 8, and 11 per NSR 24386
- Row for S-1024, deleted Condition 10574, Parts 1, 4, 5, 7, 8, and 11 per NSR 24386
- Row for S-1024, deleted applicability for 40 CFR 60, Subpart GGGa per NSR 24386
- Row for S-1026, deleted Condition 10574, Parts 1, 4, 5, 7, 8, and 11 per NSR 24386
- Row for Heartcut Stream (MRU), deleted Condition 10574, Parts 1, 4, 5, 7, 8, and 11 per NSR 24386
- Row for S-1030, added footnote (8) for exemptions for 40 CFR 60, Subpart GGG and 40 CFR 63, Subpart CC
- Row for S-1031, added footnote (8) for exemption for 40 CFR 60, Subpart GGG and 40 CFR 63, Subpart CC
- Row for S-1034, deleted Condition 24080, Part 1 per NSR 24386
- Row for S-1035, deleted Condition 24080, Part 1 per NSR 24386
- Row for S-1036, deleted Condition 22949, Part 1 per NSR 24386
- Row for S-1049, deleted Condition 22949, Part 1 per NSR 24386
- Row for S-1050, deleted Condition 22949, Part 1 per NSR 24386
- Row for S-1051, deleted Condition 22949, Part 1 per NSR 24386
- Row for S-1052, deleted Condition 22949, Part 1 per NSR 24386
- Row for S-1058, deleted Condition 10574, Parts 1, 4, 5, 7, 8, and 11 per NSR 24386
- New row for S-1059/S-1060 per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
- New row for S-1063 per NSR 22082
- Row for COGEN Compressors, added footnote (8) for exemptions for 40 CFR 60, Subpart GGG
- Row for WWTP, added A68 per NSR 20690
- Notes 1, 2, 6, 7, updated for changes to 40 CFR 63 Subpart CC overlap for equipment leaks (63.640(p)) based on amendments on 10/28/2009.
- Note 3, moved to Table IV-H9. See applicability determination for 40 CFR 60 Subpart QQQ.

- Table IV-I1 (Fugitives)

  - Delete “New source comply with 40 CFR Part 63, Subpart H“ from 63.648(a). For MACT CC, “source” means “major source”. The refinery is an existing “source” for MACT CC.
  - 40 CFR 61, Subpart V, editorial correction to change 61.241 citations to 61.242
- Table IV-J3 (S-86)
  - Renumbered to IV-J1 from J3 for corrected alphanumeric order
- Table IV-J4 (S S-63, S-73, S-75, S-76, S-77, S-78, S-79, S-80, S-82)
  - Renumbered to IV-J2 from J4 for corrected alphanumeric order
- Table IV-J6 (S-83, S-84, S-92)
  - Renumbered to IV-J3 from J6 for corrected alphanumeric order
- Table IV-J7 (S-97)
  - Renumbered to IV-J4 from J7 for corrected alphanumeric order
- Table IV-J8 (S-163)
  - Renumbered to IV-J5 from J8 for corrected alphanumeric order
- Table IV-J9 (S-207, S-1047, S-1048)
  - Renumbered to IV-J6 from J8 for corrected alphanumeric order
  - Condition 20820, Parts 23, 27, 28, and 29, deleted per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
- Table IV-J11 (S-89)
  - Renumbered to IV-J7 from J11 for corrected alphanumeric order
- Table IV-J12 (S-88, S-87, S-90, S-91)
  - Renumbered to IV-J8 from J12 for corrected alphanumeric order
- Table IV-J13 (S-210)
  - Renumbered to IV-J9 from J13 for corrected alphanumeric order
- Table IV-J14 (S-55)
  - Renumbered to IV-J10 from J14 for corrected alphanumeric order
- Table IV-J15 (S-65, S-69)
  - Renumbered to IV-J11 from J15 for corrected alphanumeric order
- Table IV-J16 (S-124)
  - Renumbered to IV-J12 from J16 for corrected alphanumeric order
- Table IV-J17 (S-133)
  - Renumbered to IV-J13 from J17 for corrected alphanumeric order
- Table IV-J18 (S-227)
  - Renumbered to IV-J14 from J18 for corrected alphanumeric order
  - Delete 40 CFR 60.116b(e)(2)(ii) – NSPS Kb citation applies only to crude oil. S-227 does not store crude oil.
  - Deleted Condition 10574, Parts 1, 4, 5, 7, 8, and 11 per NSR 24386
  - Deleted Condition 24197, Parts 1, 4, 5, 7, 8, and 11 per NSR 24386
- Table IV-J19 (S-64, S-66, S-93, S-94, S-95, S-96, S-99, S-100, S-106, S-107, S-109, S-111, S-116, S-118, S-119, S-140, S-145)
  - Renumbered to IV-J15 from J19 for corrected alphanumeric order
- Table IV-J20 (S-98)
  - Renumbered to IV-J16 from J20 for corrected alphanumeric order
- Table IV-J21 (S-108)
  - Renumbered to IV-J17 from J21 for corrected alphanumeric order

- Table IV-J23 (S-113, S-114, S-115, S-117, S-120, S-122, S-123)
  - Renumbered to IV-J18 from J23 for corrected alphanumeric order
- Table IV-J27 (S-158)
  - Renumbered to IV-J19 from J27 for corrected alphanumeric order
- Table IV-J28 (S-1013)
  - Renumbered to IV-J20 from J28 for corrected alphanumeric order
- Table IV-J29 (S-121, S-185, S-132, S-134)
  - Renumbered to IV-J21 from J29 for corrected alphanumeric order
- Table IV-J30 (S-230)
  - Renumbered to IV-J22 from J30 for corrected alphanumeric order
- Table IV-J31.2 (S-231, S-236)
  - Renumbered to IV-J23 from J31.2 for corrected alphanumeric order
- Table IV-J32 (S-81, S-85, S-104)
  - Renumbered to IV-J24 from J32 for corrected alphanumeric order
- Table IV-J34 (S-101, S-103, S-105)
  - Renumbered to IV-J25 from J34 for corrected alphanumeric order
  - Condition 25417 added per NSR A/N 24944
- Table IV-J35 (S-112)
  - Renumbered to IV-J26 from J35 for corrected alphanumeric order
- Table IV-J38 (S-193, S-196)
  - Renumbered to IV-J27 from J38 for corrected alphanumeric order
  - Condition 24245 added per NSR A/N 24379
- Table IV-J40 (S-205, S-206)
  - Renumbered to IV-J28 from J40 for corrected alphanumeric order
  - Condition 24245 added per NSR A/N 24379
- Table IV-J41 (S-208)
  - Renumbered to IV-J29 from J41 for corrected alphanumeric order
- Table IV-J42 (S-1721, TK-1722, TK-1723, TK-1724, TK-1725)
  - Renumbered to IV-J30 from J42 for corrected alphanumeric order
- Table IV-J43 (S-1726)
  - Renumbered to IV-J31 from J43 for corrected alphanumeric order
- Table IV-K3
  - Condition 11879, Part 18, replaced by Condition 24245 per NSR A/N 24379
- Table IV-K4
  - Condition 11879, Part 16, replaced by Condition 24245 per NSR A/N 24379

V. Schedule of Compliance

A schedule of compliance is required in all Title V permits pursuant to BAAQMD Regulation 2-6-409.10 which provides that a major facility review permit shall contain the following information and provisions:

"409.10 A schedule of compliance containing the following elements:

10.1 A statement that the facility shall continue to comply with all applicable requirements with which it is currently in compliance;

10.2 A statement that the facility shall meet all applicable requirements on a timely basis as requirements become effective during the permit term; and

10.3 If the facility is out of compliance with an applicable requirement at the time of issuance, revision, or reopening, the schedule of compliance shall contain a plan by which the facility will achieve compliance. The plan shall contain deadlines for each item in the plan. The schedule of compliance shall also contain a requirement for submission of progress reports by the facility at least every six months. The progress reports shall contain the dates by which each item in the plan was achieved and an explanation of why any dates in the schedule of compliance were not or will not be met, and any preventive or corrective measures adopted."

Since the District has not determined that the facility is out of compliance with an applicable requirement, the schedule of compliance for this permit contains only sections 2-6-409.10.1 and 2-6-409.10.2.

The BAAQMD Compliance and Enforcement Division has conducted a review of compliance over the past year and has no records of compliance problems at this facility during the past year. The compliance report is contained in Appendix A of this permit evaluation and statement of basis.

VI. Permit Conditions

During the Title V permit development, the District has reviewed the existing permit conditions, deleted the obsolete conditions, and, as appropriate, revised the conditions for clarity and enforceability. Each permit condition is identified with a unique numerical identifier, up to five digits.

When necessary to meet Title V requirements, additional monitoring, recordkeeping, or reporting has been added to the permit.

All changes to existing permit conditions are clearly shown in "strike-out/underline" format in the proposed permit. When the permit is issued, all 'strike-out" language will be deleted and all "underline" language will be retained, subject to consideration of comments received.

The existing permit conditions are derived from previously issued District Authorities to Construct (A/C) or Permits to Operate (P/O). Permit conditions may also be imposed or revised as part of the annual review of the facility by the District pursuant to California Health and Safety Code (H&SC) § 42301(e), through a variance pursuant to H&SC § 42350 et seq., an order of abatement pursuant to H&SC § 42450 et seq., or as an administrative revision initiated by District staff. After issuance of the Title V permit, permit conditions will be revised using the procedures in Regulation 2, Rule 6, Major Facility Review.

The District has reviewed and, where appropriate, revised or added new annual and daily throughput limits on sources so as to help ensure compliance with District rules addressing preconstruction review. The applicability of preconstruction review depends on whether there is a "modified source" as defined in District Rule 2-1-234. Whether there is a modified source depends in part on whether there has been an "increase" in "emission level." 2-1-234 defines

what will be considered an emissions level increase, and takes a somewhat different approach depending on whether a source has previously permitted by the District.

Sources that were modified or constructed since the District began issuing new source review permits will have permits that contain throughput limits, and these limits are reflected in the Title V permit. These limits have previously undergone District review, and are considered to be the legally binding "emission level" for purposes of 2-234.1 and 2-1-234.2. By contrast, for older sources that have never been through preconstruction review (commonly referred to as "grandfathered" sources), an "increase" in "emission level" is addressed in 2-1-234.3. A grandfathered source is not subject to preconstruction review unless its emission level increases above the highest of either: 1) the design capacity of the source, 3) the capacity listed in a permit to operate, or 3) highest capacity demonstrated prior to March 2000. However, if the throughput capacity of a grandfathered source is limited by upstream or downstream equipment (i.e., is "bottlenecked"), then the relaxing of that limitation ("debottlenecking") is considered a modification.

The District has written throughput limits into the Title V permit for grandfathered sources. As discussed above, these limits are written for the purpose of determining whether an increase in emission levels has occurred. The purpose of these limits is to facilitate implementation of preconstruction review program. If these limits are exceeded, the facility would be expected to report the exceedance, and the District would treat the reported exceedance as presumptively establishing the occurrence of a modification. The facility would then be expected to apply for a preconstruction permit addressing the modification and the District would consider whether an enforcement action was appropriate.

It is important to note the presumptive nature of throughput limits for grandfathered sources that are created in the Title V permit. These limits are generally based upon the District's review of information provided by the facility regarding the design capacity or highest documented capacity of the grandfathered source. To verify whether these limits reflect the true design, documented, or "bottlenecked" capacity (pursuant to 2-10234.1) of each source is beyond the resource abilities of the District in this Title V process. Moreover, the District cannot be completely confident that the facility has had time or resources necessary to provide the most accurate information available in this regard. Creating throughput limits in the Title V permit for grandfathered sources is not required by either Part 70 or the District's Major Facility Review rules. Despite the lack of such a requirement, and despite the resource and information challenges presented in the Title V process, the District believes that writing presumptive limits for grandfathered sources into the Title V permit will provide a measure of predictability regarding the future applicability of the preconstruction review program, and that this increased predictability is universally beneficial.

It follows from the presumptive nature of these throughput limits for grandfathered sources that exceedance of these limits is not per se a violation of the permit. *Failure to report an exceedance would be a permit violation.* In this sense, the throughput limits function as monitoring levels, and are imposed pursuant to the District's authority to required monitoring that provide a reasonable assurance of compliance. If an exceedance occurs, the facility would

have an opportunity to demonstrate that the throughput limit in fact did not reflect the appropriate limit for purposes of 2-1-234.3. If the facility can demonstrate this, no enforcement action would follow, and the permit would be revised at the next opportunity. It also follows that compliance with these limits is not a "safe harbor" for the facility. If evidence clearly shows that a grandfathered source has undergone a "modification" as defined in 2-1-234.3, the District would consider that a preconstruction review-triggering event, notwithstanding compliance with the throughput limit in the Title V permit. In other words, the protection afforded the facility by complying with the throughput limit in the Title V permit is only as strong as the information on which it was based. There is no Title V "permit shield" associated with throughput limits for grandfathered sources, as they are being proposed. A shield may be provided if the District determines with certainty that a particular limit is appropriate for purposes of 2-1-234.3.

Conditions that are obsolete or that have no regulatory basis have been deleted from the permit.

The regulatory basis is listed following each condition. The regulatory basis may be a rule or regulation. The District is also using the following terms for regulatory basis:

- BACT: This term is used for a condition imposed by the Air Pollution Control Officer (APCO) to ensure compliance with the Best Available Control Technology in Regulation 2-2-301.
- Cumulative Increase: This term is used for a condition imposed by the APCO, which limits a source's operation to the operation described in the permit application pursuant to BAAQMD Regulation 2-1-403.
- Offsets: This term is used for a condition imposed by the APCO to ensure compliance with the use of offsets for the permitting of a source or with the banking of emissions from a source pursuant to Regulation 2, Rules 2 and 4.
- PSD: This term is used for a condition imposed by the APCO to ensure compliance with a Prevention of Significant Deterioration permit issued pursuant to Regulation 2, Rule 2.
- TRMP: This term is used for a condition imposed by the APCO to ensure compliance with limits that arise from the District's Toxic Risk Management Policy.

Changes to Permit Condition Index:

– Index updated based on changes to permit conditions identified below

<u>Changes to permit:</u>

- Condition 125
  - Parts 9 and 10, deleted per NSR A/N 24379, Consolidation of Consent Decree Requirements
- Condition 126
  - Parts 9 and 10, deleted per NSR A/N 24379, Consolidation of Consent Decree Requirements
- Condition 815
  - Deleted per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
- Condition 1709 changes per NSR 23841/TV 23842

  - Part 1, added the NSR throughput limit of 9.39 million barrels gasoline loaded per year
  - Part 2, clarified emission factors
  - Part 3, added abatement requirement of 95% by weight from Regulation 8-44-304
  - Part 4,8, 9, 10, 11,and 12 deleted – redundant with or less stringent than Regulation 8-44
  - Part 5, added requirement for alarm and shutoff set points at outlet of vapor recovery system
  - Part 6, added loading record requirements for relief valves
- Condition 8348
  - Deleted from index and condition text, superceded in past action by Condition 10574
- Condition 9296
  - Parts D4 and D6, replaced by Condition 25342 Consolidated Fuel Gas Condition per NSR A/N 24656
  - Parts F1.a through F1.d, deleted per NSR A/N 24386
  - Part F1, modified for final fugitive POC offsets per NSR A/N 24386
- Condition 10574
  - Parts G and 17, partially replaced by Condition 25342 Consolidated Fuel Gas Condition per NSR A/N 24656
  - Parts 1, 4, 5, 7, 8, 11, and 12, deleted per NSR A/N 24386
  - Part 12, modified for final fugitive count documentation per NSR A/N 24386
  - Parts 13, 14, 15, and 16 replaced by Condition 25342 Consolidated Fuel Gas Condition per NSR A/N 24656Part 37, revised reference to 20820, Part 76 to 20820, Part 77 to correct typographical error
  - Part 52, modified for final POC offsets and fugitive count documentation for Alkylate Production Project per NSR A/N 24386
- Condition 11030
  - Deleted per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
- Condition 11879
  - Parts 1 through 7, 9 through 12, and 14 through 17, revised and added per NSR A/N 20690
  - Part 18, deleted per NSR A/N 24379, Consolidation of Consent Decree Requirements
- Condition 11880
  - Parts 1 through 3, 7, 13 through 17, revised per NSR A/N 20690
  - Part 16, deleted per NSR A/N 24379, Consolidation of Consent Decree Requirements
- Condition 12727
  - Deleted per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
- Condition 14318
  - Parts 2A and 2B, added new conditions per NSR A/N 20558
  - Part 5, replaced by Condition 25342 Consolidated Fuel Gas Condition per NSR A/N 24656
- Condition 15512
  - Part 1, revised source test frequency from quarterly to annual per NSR A/N 21490
  - Part 2, added Regulation 8-2-301 POC/total carbon limit as RACT per NSR A/N 21490
- Condition 16027

  - Part 1, deleted per NSR A/N 24386
  - Parts 3, 4, 5, 6, and 7, replaced by Condition 25342 Consolidated Fuel Gas Condition per NSR A/N 24656
- Condition 16186
  - Deleted, condition is obsolete since the source no longer exists, cleanup
- Condition 18043
  - Part 1, modified for final fugitive count documentation per NSR A/N 24386
- Condition 18344
  - Deleted, condition is obsolete, Parts 1 and 2 deleted per NSR A/N 3902
- Condition 18744
  - Deleted, superceded in past action by Condition 24375
- Condition 18748
  - Deleted, superceded in past action by Condition 24310
- Condition 18794
  - Deleted per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
- Condition 19176
  - Deleted, condition is obsolete, was mis-numbered and replace with Condition 20806, cleanup
- Condition 19177
  - Part 19g, partially deleted, replaced by Condition 25342 Consolidated Fuel Gas Condition per NSR A/N 24656
  - Part 34, deleted because Phase I Cogen is not required to meet Part 75 Acid Rain CEM requirements
  - Parts 35 and 36, replaced by Condition 25342 Consolidated Fuel Gas Condition per NSR A/N 24656
  - Parts 39 and 40, revised to reduce source test frequency per NSR A/N 24450
- Condition 19466
  - Part 17, added per NSR A/N 21573 (and then removed per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329Condition deleted, replaced by Condition 24198 per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
- Condition 20666
  - Parts 1 and 2, revised per NSR A/N 22998
- Condition 20820
  - Part 1 deleted and replaced with Part 2 to document remaining fugitive equipment POC offsets.
  - Parts 3, 4, 5, and 6 replaced by Condition 25342 Consolidated Fuel Gas Condition per NSR A/N 24656
  - Part 16 H2S/TRS CEM requirement replaced by Condition 25342 Consolidated Fuel Gas Condition per NSR A/N 24656
  - Parts 21, 22, 23, 28, 29, 34, 70, and 76 deleted and/or revised to document completed requirements per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
  - Parts 24, 33, 35, 36, 37, 38, 39, 40, 41, 42, 50, 51, 55, 56, 61, 63, 65, 66, 67, 68, and 75, revised per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329

  - Part 27, revised to exclude tank throughput recordkeeping and to add clarification regarding shipping records per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
  - Part 72, revised to reduce source test frequency per NSR A/N 24450
- Condition 21233
  - Removal of S19 and name clarification for H-2A, clean up from BAP renewal permit
  - Parts 6A, 7, 7A.1, and 7A.2, revised source test submittal dates from 45 to 60 days per NSR A/N 22602
- Condition 22156
  - Condition deleted per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
- Condition 22323
  - Part 1, revised annual throughput per NSR A/N 22998
- Condition 22949
  - Parts 1.a through 1.e, deleted per per NSR A/N 24386
  - Part 2, modified for final POC offsets and fugitive count documentation per NSR A/N 24386
  - Parts 3, 4, 5, and 6, replaced by Condition 25342 Consolidated Fuel Gas Condition per NSR A/N 24656
- Condition 23446
  - Part 1, revised basis per NSR A/N 24379
- Condition 24080
  - Parts 1.a through 1.d, deleted per per NSR A/N 24386
  - Part 2, modified for final POC offsets and fugitive count documentation per NSR A/N 24386
  - Parts 3 and 4 added for S-1034 throughput limit and recordkeeping per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
- Condition 24197
  - Parts G and 17, partially replaced by Condition 25342 Consolidated Fuel Gas Condition per NSR A/N 24656
  - Parts 1, 4, 5, 7, 8, and 11, deleted per per NSR A/N 24386
  - Part 12, modified for final fugitive count documentation per NSR A/N 24386
  - Parts 13, 14, 15, and 16, replaced by Condition 25342 Consolidated Fuel Gas Condition per NSR A/N 24656
  - Parts 18(Note 2) and 37, revised reference to 20820, Part 76 to 20820, Part 77 to correct typographical error
  - Part 52, modified for final POC offsets and fugitive count documentation for Alkylate Production Project per NSR A/N 24386
- Condition 24198
  - Parts 4, 6, and 9, added 'Basis' for typographical correction and changed 'quarterly' to 'annual' per NSR A/N 24450
  - Part 11, revised source test frequency from semi-annual to annual per Reg 9, Rule 9 regulatory update made effective by NSR A/N16707. This application which was addressed in the renewal permit but the revision was not made.
  - Parts 16 and 17, added per NSR A/N 21573

- Condition 24239
  - Parts 1 through 6, deleted per NSR A/N 24379, Consolidation of Consent Decree Requirements
  - Part 7, revised per NSR A/N 24379, Consolidation of Consent Decree Requirements
- Condition 24245
  - Parts 1 through 7, deleted per NSR A/N 24379, Consolidation of Consent Decree Requirements
  - Parts 8 through 50, added per NSR A/N 24379, Consolidation of Consent Decree Requirements
- Condition 24297
  - Deleted, these Authority to Construct conditions replaced by Condition 24298 Permit to Operate conditions
- Condition 24309
  - Parts 3 and 4, updated basis for revised CARB ATCM
- Condition 24310
  - Part 2, revised basis per NSR A/N 21350
  - Parts 3 and 4, updated basis for revised CARB ATCM
  - Parts 5 – 8, added per NSR A/N 21350 for S-252
- Condition 24375
  - Parts 3 and 4, updated basis for revised CARB ATCM
- Condition 24245
  - Parts 1 through 7 deleted per NSR A/N 24379, Consolidation of Consent Decree Requirements
  - Parts 8 through 50 added per NSR A/N 24379, Consolidation of Consent Decree Requirements
- Condition 24737
  - Parts 1.a through 1.d, deleted per NSR A/N 22082
  - Part 2, added per NSR A/N 22082 and modified fugitive total based on final submitted component count.
- Condition 24754
  - Added new condition per NSR A/N 22080
  - Parts 1.a through 1.d, deleted per NSR A/N 24386 (consolidated with NSR A/N 22080)
  - Part 2, modified for final POC offsets and fugitive count documentation per NSR A/N 24386 (consolidated with NSR A/N 22080)
- Condition 25158
  - Added new condition per NSR A/N 24094
- Condition 25342
  - Added new condition per NSR A/N 24656, Consolidation of Fuel Gas System Requirements
- Condition 25417
  - Added new condition for TK-1791 per NSR A/N 24944
- Condition 76003
  - Deleted from index, superceded in past action by Condition 24310

VII. Applicable Limits and Compliance Monitoring Requirements

This section of the permit is a summary of numerical limits and related monitoring requirements for each source. The summary includes a citation for each monitoring requirement, frequency of monitoring, and type of monitoring. The applicable requirements for monitoring are completely contained in Sections IV, Source-Specific Applicable Requirements, and VI, Permit Conditions, of the permit.

Monitoring decisions are typically the result of a balancing of several different factors including: 1) the likelihood of a violation given the characteristics of normal operation, 2) degree of variability in the operation and in the control device, if there is one, 3) the potential severity of impact of an undetected violation, 4) the technical feasibility and probative value of indicator monitoring, 5) the economic feasibility of indicator monitoring, and 6) whether there is some other factor, such as a different regulatory restriction applicable to the same operation, that also provides some assurance of compliance with the limit in question.

These factors are the same as those historically applied by the District in developing monitoring for applicable requirements**.** It follows that, although Title V calls for a re-examination of all monitoring**,** there is a presumption that these factors have been appropriately balanced and incorporated in the District's prior rule development and/or permit issuance. It is possible that, where a rule or permit requirement has historically had no monitoring associated with it, no monitoring may still be appropriate in the Title V permit if, for instance, there is little likelihood of a violation**.** Compliance behavior and associated costs of compliance are determined in part by the frequency and nature of associated monitoring requirements. As a result, the District will generally revise the nature or frequency of monitoring only when it can support a conclusion that existing monitoring is inadequate**.**

Where BAAQMD Regulation 8, Rule 18 is specified as the Monitoring Requirement Citation, the monitoring frequency can vary due to flexibility allowed by the rule per 8-18-401.3, 404, and 406. Therefore the Monitoring Frequency (P/C/N) is stated "As Required" rather than "P/Q".

<u>Changes to permit:</u>

Tables in Section VII-D were renumbered for consistency with tables in Section IV-D.

- Table VII-A1 (S-1)
  - Condition 19466 deleted, replaced by Condition 24198 per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
  - Rows for H2S and TRS, NSPS J, Condition 125 replaced with Condition 24245 per NSR A/N 24379
- Table VII-A2 (S-2)
  - Condition 19466 deleted, replaced by Condition 24198 per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
  - Rows for H2S and TRS, NSPS J, Condition 126 replaced with Condition 24245 per NSR A/N 24379

- Table VII – A3 (S-3, S-4)
  - Deleted table for removal of sources that were replaced by S-1059/S-1060 per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
- Table VII-A3 (renumbered) (S-1059, S-1060)
  - Renumbered to Table VII-A.3 from VI-A3.1
  - Removed Reg 9-10 applicability per newly adopted Reg 9-10 per NSR A/N 16937
  - Rows for NOx, CO, SO2, PM10, NMOC, NMH3, SAM, and A-1047 vapor flow, revised per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
  - Rows for FP, replaced 'COM or AMP' with 'opacity CPMS on FCCU/CKR' and replaced Condition 19466, Part 6 with Condition 20820, Part 72 per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
  - Revised footnote to refer to S-1059 and S-1060 CO Furnaces per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
- Table VII-A4 (S-5)
  - Rows for CO, revised to show applicability per Condition 24239 and Condition 24245 and revised with updated federal applicability per NSR A/N 24379
  - Rows for opacity and PM, revised to show applicability per Condition 24239 and Condition 24245 and updated to show opacity CPMS on FCCU/CKR stack per NSR A/N 24379
  - Condition 19446 revised to show Condition 24198 only per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
  - Row for opacity, Condition 24198, Part 17, added per NSR A/N 21573
  - Rows for PM and opacity, replaced 'COM or AMP' with 'opacity CPMS on FCCU/CKR' per Condition 20820
  - Rows for FP, Condition 19466, Parts 6 and 9 replaced by Condition 20820, Part 72 per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329 and source test frequency changed from quarterly to annual per NSR A/N 22450
  - Rows for SO2, added with updated NSPS Subpart J applicability per NSR A/N 24379
  - Monitoring type 'COM on Main Stack or AMP' replaced by Opacity CPMS on FCCU/CKR per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
- Table VII-A5 (S-6)
  - Row for opacity, Condition 19466, Part 17, added per NSR A/N 21573
  - Row for opacity, Condition 24198, Part 17, added per NSR A/N 21573
  - Rows with reference to Condition 19446 revised to show Condition 24198 only per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
  - Rows for PM and opacity, replaced 'COM or AMP' with 'CPMS on FCCU/CKR' per Condition 20820
  - Rows for opacity, monitoring type 'COM on Main Stack or AMP' replaced by CPMS on FCCU/CKR per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
  - Rows for FP, Condition 19466, Parts 6 and 9 replaced by Condition 20820, Part 72 per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
- Table VII-A6.1 (S-7, S-20, S-34)
  - Row with reference to Condition 19446 revised to show Condition 24198 only per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329

  - Row for 9-10-301 NOx limit, added new Condition 25158 per NSR A/N 24094and deleted CEMS per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
  - Rows for NOx, CO, SO2, PM10, and NMHC, deleted Condition 20820, Part 21 limits and monitoring requirements per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
  - Row for O2, deleted per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
  - Row for H2S, NSPS Subpart J, revised Condition 24245 per NSR A/N 24379
  - Row for H2S, NSPS Subpart J, added Condition 25342 per NSR A/N 24656
- Table VII-A6.2 (S-24, S-35)
  - Row with reference to Condition 19446 revised to show Condition 24198 only per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
  - Row for 9-10-301 NOx limit, added new Condition 25158 per NSR A/N 24094
  - Row for H2S, NSPS Subpart J, revised Condition 24245 per NSR A/N 24379
  - Row for H2S, NSPS Subpart J, added Condition 25342 per NSR A/N 24656
- A/N Table VII-A6.4 (S-26)
  - Row with reference to Condition 19446 revised to show Condition 24198 only per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
  - Row for H2S, added NSPS Subpart J and Condition 24245 with NSPS J exemption from monitoring per NSR A/N 24379
  - Row for H2S, added Condition 25342 per NSR A/N 24656
- Table VII-A8.1 (renumbered) (S-16)
  - Renumbered to Table VII-A7.1 from VII-A8.1
- Table VII-A8.2 (renumbered) (S-18)
  - Renumbered to Table VII-A7.2 from VII-A8.2
- Table VII-A8.3 (renumbered) (S-17)
  - Renumbered to Table VII-A7.3 from VII-A8.3
- Table VII-A9 (renumbered) (S-19)
  - Renumbered to Table VII-A8 from VII-A9
- Table VII-A10 (renumbered) (S-21, S22)
  - Renumbered to Table VII-A9 from VII-A10
  - Row for fuel flow, revised reference to Condition 20820, Part 76 to Part 77 to correct typographical error
  - Rows with reference to Condition 19446 revised to show Condition 24198 only per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
  - Row for H2S, Condition 10574/24197 replaced with Condition 25342 per NSR A/N 24656
  - Row for H2S, NSPS Subpart J, added Condition 24245 per NSR A/N 24379
  - Row for H2S, NSPS Subpart J, added Condition 25342 per NSR A/N 24656
  - Row for Total Reduced Sulfur, Condition 10574/24197 replaced with Condition 25342 per NSR A/N 24656
- Table VII-A11 (renumbered) (S-23)
  - Renumbered to Table VII-A10 from VII-A11
  - Rows with reference to Condition 19446 revised to show Condition 24198 only per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329

  - Revised Condition 14318, Part 2 to add Part 2A low firing, startup, shutdown, and curtailed operations
  - Row for H2S, NSPS Subpart J, added Condition 24245 per NSR A/N 24379
  - Row for H2S, NSPS Subpart J, added Condition 25342 per NSR A/N 24656
  - Added NOx limit for low firing, startup, shutdown, and curtailed operations per Condition 14318, Part 2B
  - Row for Condition 14318, Part 5 deleted per NSR A/N 24656
  - Row for H2S, Condition 10574/24197 replaced with Condition 25342 per NSR A/N 24656
- Table VII-A12 (renumbered) (S-25, S-30, S-31, S-32, S-33)
  - Renumbered to Table VII-A11 from VII-A12
  - Rows with reference to Condition 19446 revised to show Condition 24198 only per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
  - Row for H2S, NSPS Subpart J, added Condition 24245 per NSR A/N 24379
  - Row for H2S, NSPS Subpart J, added Condition 25342 per NSR A/N 24656
- Table VII-A13.1 (renumbered) (S-36, S-48, S-56)
  - Renumbered to Table VII-A12.1 from VII-A13.1
- Table VII-A13.2 (renumbered) (S-4, S-44, S-46)
  - Renumbered to Table VII-A12.2 from VII-A13.2
  - Row with reference to Condition 19446 revised to show Condition 24198 only per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
  - Deleted row for NOx Reg 9-9-301.1.3 due to past due requirement
  - Revised row for NOx Reg 9-9-301.2 to remove future effective date and added Condition 24198, Part 11 as the annual source test requirement for monitoring
- Table VII-A14.1(renumbered) (S-37)
  - Renumbered to Table VII-A13.1 from VII-A14.1
- Table VII-A14.2(renumbered) (S-45)
  - Renumbered to Table VII-A13.2 from VII-A14.2
  - Revised row for NOx Reg 9-9-301.2 to remove future effective date
- Table VII-A15 (renumbered) (S-40)
  - Renumbered to Table VII-A14 from VII-A15
  - Rows with reference to Condition 19446 revised to show Condition 24198 only per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
  - Row for 9-10-301 NOx limit, added new Condition 25158 per NSR A/N 24094
  - Row for H2S, NSPS Subpart J, added Condition 24245 per NSR A/N 24379
  - Row for H2S, NSPS Subpart J, added Condition 25342 per NSR A/N 24656
  - Row for Total Reduced Sulfur, replaced Condition 9296 with Condition 25342 per NSR A/N 24656
- Table VII-A16(renumbered) (S-41)
  - Renumbered to Table VII-A15 from VII-A16
  - Rows with reference to Condition 19446 revised to show Condition 24198 only per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
  - Row for 9-10-301 NOx limit, added new Condition 25158 per NSR A/N 24094
  - Row for H2S, NSPS Subpart J, added Condition 24245 per NSR A/N 24379
  - Row for H2S, NSPS Subpart J, added Condition 25342 per NSR A/N 24656
- Table VII-A17

  - Deleted table, permit has been surrended for S-42 (F-1060)
- Table VII-A18 (renumbered) (S-173)
  - Renumbered to VII-A16 from A18
  - Row with reference to Condition 19446 revised to show Condition 24198 only per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
  - Row for H2S, NSPS Subpart J, added Condition 24245 per NSR A/N 24379
  - Row for H2S, NSPS Subpart J, added Condition 25342 per NSR A/N 24656
- Table VII-A19 (renumbered) (S-220)
  - Renumbered to VII-A17 from A19
  - Rows with reference to Condition 19446 revised to show Condition 24198 only per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
  - Row for H2S, Condition 10574/24197 replaced with Condition 25342 per NSR A/N 24656
  - Row for H2S, NSPS Subpart J, added Condition 24245 per NSR A/N 24379
  - Row for H2S, NSPS Subpart J, added Condition 25342 per NSR A/N 24656
  - Row for Total Reduced Sulfur, Condition 10574/24197 replaced with Condition 25342 per NSR A/N 24656
- Table VII-A20 (renumbered) (S-237)
  - Renumbered to VII-A18 from A20
  - Row for H2S, NSPS Subpart J, added Condition 24245 per NSR A/N 24379
  - Row for H2S, NSPS Subpart J, added Condition 25342 per NSR A/N 24656
  - Row for H2S, Condition 16027, deleted replaced with Condition 25342 per NSR A/N 24656
  - Row for NOx, NSPS Subpart Db citation corrected for consistency with Table IV-A19
  - Row for Total Reduced Sulfur, Condition 16027 replaced with Condition 25342 per NSR A/N 24656
- Table VII-A21 (renumbered) (S-241, S-242)
  - Renumbered to VII-A19.1 from A21
  - Removed S-240 (replaced by S-252)
  - Renumbered to A20.1 for S-241 and S-242 only
  - BAAQMD Reg 9-8-330.3 – removed future effective date
  - CARB ATCM – removed 93115.10(d)(1) totalizing meter which is not required for firewater pums and was in the permit in error, and renumbered citations based on last update
- Table VII-A19.2 (S-252)
  - New table for S-252 per NSR A/N 21350
- Table VII-A22.1 (renumbered) (S-1030)
  - Renumbered to VII-A20.1from A22.1
  - BAAQMD Reg 9-9-301.2 and 9-9-301.3, removed past due future effective date of 1/1/2010
  - Row for H2S, Condition 19177 replaced with Condition 25342 per NSR A/N 24656
  - Row for Total Reduced Sulfur, Condition 19177 replaced with Condition 25342 per NSR A/N 24656
  - Rows for PM10 and POC, revised source test frequency from quarterly to annual per NSR A/N 22450

  - Row for SAM, revised basis for future source test frequency reduction per NSR A/N 22450
- Table VII-A22.2 (renumbered) (S-1031)
  - Renumbered to VII-A20.2 from A22.2
  - Row for H2S, Condition 19177 replaced with Condition 25342 per NSR A/N 24656
  - Row for Total Reduced Sulfur, Condition 19177 replaced with Condition 25342 per NSR A/N 24656
  - Rows for PM10 and POC, revised source test frequency from quarterly to annual per NSR A/N 22450
  - Row for SAM, revised basis for future source test frequency reduction per NSR A/N 22450
- Table VII-A23 (renumbered) (S-243)
  - Renumbered to VII-A21 from A23
  - BAAQMD Reg 9-8-330.3 – removed future effective date
  - CARB ATCM – renumbered based on last update
- Table VII-A22(renumbered) (S-247, S-248)
  - Renumbered to VII-A22 from A24
  - Rows for H2S, Condition 22949 replaced with Condition 25342 per NSR A/N 24656
  - Row for H2S, NSPS Subpart J, added Condition 24245 per NSR A/N 24379
  - Row for Total Reduced Sulfur, Condition 22949 replaced with Condition 25342 per NSR A/N 24656
- Table VII-A25 (renumbered) (S-251)
  - Renumbered to VII-A23 from A25
  - BAAQMD Reg 9-8-330.3 – removed future effective date
  - CARB ATCM renumbered based on last update
- Table VII-A26 (renumbered) (S-1061)
  - Renumbered to VII-A24 from A26
  - Rows for H2S, Condition 20820 replaced with Condition 25342 per NSR A/N 24656
  - Row for H2S, Condition 25342, added for new NSPS Ja daily limit per NSR A/N 24656
  - Rows for Total Reduced Sulfur, Condition 22949 replaced with Condition 25342 per NSR A/N 24656
- Table VII-B1 (S-8)
  - Rows with reference to Condition 19446 revised to show Condition 24198 or 20820 only per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
- Table VII-B2 (S-11)
  - Rows with reference to Condition 19446 revised to show Condition 24198 only per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
- Table VII-B4 (S-176)
  - Rows with reference to Condition 19446 revised to show Condition 24198 only per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
- Table VII –B6 (S-232)
  - Deleted table for removal of sources that were removed from service per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
- Table VII –B7 (S-233)

  - Deleted table for removal of sources that were removed from service per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
- Table VII-B8 (renumbered) (S-1027)
  - Renumbered to VII-B7 from VII-B8
- Table VII-B9.1 (renumbered) (S-201)
  - Renumbered to VII-B7.1 from VII-B9.1
- Table VII-B9.2 (renumbered) (S-202)
  - Renumbered to VII-B7.2 from VII-B9.2
- Table VII-C3 (S-159)
  - Rows with reference to Condition 19446 revised to show Condition 24198 only per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
- Table VII-C4.1 (S-160)
  - Rows with reference to Condition 19446 revised to show Condition 24198 only per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
- Table VII-C4.2 (S-167)
  - Rows with reference to Condition 19446 revised to show Condition 24198 only per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
- Table VII-C5 (S-29)
  - Added MACT CC monitoring for heat exchange systems
- Table VII-D1 (S-1004)
  - Rows with reference to Condition 18794 removed since superseded by Condition 20820 per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
- Table VII-D2 (S-1006)
  - Rows with reference to Condition 815 removed since superseded by Condition 20820 per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
- Table VII-D3 (S-1007)
  - Removed rows for POC, Condition 10574, Part 52 and Condition 18043, Part 1 because they are not emission limits. The POC emissions are the amount of offsets provided based on the net increase in fugitive component, per NSR A/N 24836
- Table VII-D4 (S-1010)
  - Removed row for POC for abatement requirement
  - Revised row for POC to add Regulation 8-2-301 limits and revised source test frequency from quarterly to annual per NSR A/N 21490
- Table VII-D5 (S-1012)
  - Removed row for POC, Condition 18043, Part 1 because it is not an emission limit. The POC emissions are the amount of offsets provided based on the net increase in fugitive component, per NSR A/N 24836
- Table VII-D6 (S-1014)
  - Removed row for POC, Condition 18043, Part 1 because it is not an emission limit. The POC emissions are the amount of offsets provided based on the net increase in fugitive component, per NSR A/N 24836
  - Added row to document that there are no monitoring requirements for the source(s) covered by this table
- Table VII-D8 (S-211)

  - Removed row for POC, Condition 18043, Part 1 because it is not an emission limit. The POC emissions are the amount of offsets provided based on the net increase in fugitive component, per NSR A/N 24836
  - Added row to document that there are no monitoring requirements for the source(s) covered by this table
- Table VII-D9 (S-1058)
  - Added new table for consistency with Section IV
  - Added row to document that there are no monitoring requirements for the source(s) covered by this table
- Table VII-D9 (Renumbered) (S-1036, S-1051, S-1052)
  - Renumbered to VII-D10 allow for addition of new Table VII-D9 for consistency with Section IV
- Table VII-D10 (Renumbered) (S-1034, S-1035, S-1049, S-1050)
  - Renumbered to VII-D11 allow for addition of new Table VII-D9 for consistency with Section IV
  - Rows for Condition 20820 throughput limits deleted and replaced by new Condition 24080 Parts 3 and 4 per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
- Table VII-D11 (Renumbered) (S-51, S-52)
  - Renumbered to VII-D12 allow for addition of new Table VII-D9 for consistency with Section IV
  - Row for Condition 20820 removed activation statement per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
- Table VII-D12 (Renumbered) (S-1062)
  - Renumbered to VII-D13 allow for addition of new Table VII-D9 for consistency with Section IV
  - Row for Condition 20820 removed per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
- Table VII-D14 (S-1011)
  - Added new table for consistency with Section IV
  - Added row to document that there are no monitoring requirements for the source(s) covered by this table
- Table VII-D15 (S-1063)
  - Added new table for consistency with Section IV
  - Added row to document that there are no monitoring requirements for the source(s) covered by this table
- Table VII-E2 (S-165)
  - Condition 22323, added Part 1 and updated annual throughput limit per NSR A/N 22998
- Table VII-F1 (S-129)
  - Condition 1709, deleted Parts 4, 8, 9, 10, 11, and 12 monitoring based on documented compliance and redundancy with Reg 8, Rule 44 marine loading monitoring requirements that were adopted after Condition 1709 was written, per NSR 23481
  - Condition 1709, added monitoring for Part 2 throughput limit added per NSR 23481
- Table VII -H4.2 (S-194, S-195)

  - Modified title row to add abatement devices
  - Modified Condition 11879 per NSR 20690
  - Condition 11879, Part 18, replaced by Condition 24245 per NSR A/N 24379
- Table VII -H5.2 (S-197, S-198)
  - Modified title row to add abatement devices
  - Modified Condition 11879 per NSR 20690
  - Condition 24245 added per NSR A/N 24379
- Table VII -H7 (S-131, S-150, S-200)
  - Add A-68 and modify condition 11879 per NSR 20690
  - Condition 11879, Part 18, replaced by Condition 24245 per NSR A/N 24379
- Table VII –H8 (S-199)
  - Add A-68 and modify condition 11879 per NSR 20690
  - Condition 11879, Part 18, replaced by Condition 24245 per NSR A/N 24379
- Table VII-I1 (Fugitives)
  - Removed BAAQMD Connector Inspection Program:
  - Removed footnote b and revised references to footnote c to footnote b
  - Replaced CIP inspection frequency with annual
- Table IV-J3 (S-86)
  - Renumbered to IV-J1 from J3 for corrected alphanumeric order
- Table IV-J4 (S S-63, S-73, S-75, S-76, S-77, S-78, S-79, S-80, S-82)
  - Renumbered to IV-J2 from J4 for corrected alphanumeric order
- Table IV-J6 (S-83, S-84, S-92)
  - Renumbered to IV-J3 from J6 for corrected alphanumeric order
- Table IV-J7 (S-97)
  - Renumbered to IV-J4 from J7 for corrected alphanumeric order
- Table IV-J8 (S-163)
  - Renumbered to IV-J5 from J8 for corrected alphanumeric order
- Table IV-J9 (S-207, S-1047, S-1048)
  - Renumbered to IV-J6 from J8 for corrected alphanumeric order
  - Condition 20820, Parts 23, 27, 28, and 29, deleted per NSR VIP Amendments A/N 16937 and VIP Cleanup NSR A/N 24329
- Table IV-J11 (S-89)
  - Renumbered to IV-J7 from J11 for corrected alphanumeric order
- Table IV-J12 (S-88, S-87, S-90, S-91)
  - Renumbered to IV-J8 from J12 for corrected alphanumeric order
- Table IV-J13 (S-210)
  - Renumbered to IV-J9 from J13 for corrected alphanumeric order
- Table IV-J14 (S-55)
  - Renumbered to IV-J10 from J14 for corrected alphanumeric order
- Table IV-J15 (S-65, S-69)
  - Renumbered to IV-J11 from J15 for corrected alphanumeric order
- Table IV-J16 (S-124)
  - Renumbered to IV-J12 from J16 for corrected alphanumeric order
- Table IV-J17 (S-133)

  - Renumbered to IV-J13 from J17 for corrected alphanumeric order
- Table IV-J18 (S-227)
  - Renumbered to IV-J14 from J18 for corrected alphanumeric order
  - Delete 40 CFR 60.116b(e)(2)(ii) – NSPS Kb citation applies only to crude oil. S-227 does not store crude oil.
  - Deleted Condition 10574, Parts 1, 4, 5, 7, 8, and 11 per NSR 24386
  - Deleted Condition 24197, Parts 1, 4, 5, 7, 8, and 11 per NSR 24386
- Table VII-J19 (S-64, S-66, S-93, S-94, S-95, S-96, S-99, S-100, S-106, S-107, S-109, S-111, S-116, S-118, S-119, S-140, S-145)
  - Renumbered to VII-J15 from J19 for corrected alphanumeric order
- Table VII-J20 (S-98)
  - Renumbered to VII-J16 from J20 for corrected alphanumeric order
- Table VII-J21 (S-108)
  - Renumbered to VII-J17 from J21 for corrected alphanumeric order
- Table VII-J23 (S-113, S-114, S-115, S-117, S-120, S-122, S-123)
  - Renumbered to VII-J18 from J23 for corrected alphanumeric order
- Table VII-J27 (S-158)
  - Renumbered to VII-J19 from J27 for corrected alphanumeric order
- Table VII-J28 (S-1013)
  - Renumbered to VII-J20 from J28 for corrected alphanumeric order
- Table VII-J29 (S-121, S-185, S-132, S-134)
  - Renumbered to VII-J21 from J29 for corrected alphanumeric order
- Table VII-J30 (S-230)
  - Renumbered to VII-J22 from J30 for corrected alphanumeric order
- Table VII-J31.2 (S-231, S-236)
  - Renumbered to VII-J23 from J31.2 for corrected alphanumeric order
- Table VII-J32 (S-81, S-85, S-104)
  - Renumbered to VII-J24 from J32 for corrected alphanumeric order
- Table VII-J34 (S-101, S-103, S-105)
  - Renumbered to VII-J25 from J34 for corrected alphanumeric order
  - Condition 25417, Part 1 added per NSR A/N 24944
- Table VII-J35 (S-112)
  - Renumbered to VII-J26 from J35 for corrected alphanumeric order
- Table VII-J38 (S-193, S-196)
  - Renumbered to VII-J27 from J38 for corrected alphanumeric order
  - Condition 11880 modified per NSR 20690
  - Condition 24245 added per NSR A/N 24379
- Table VII-J40 (S-205, S-206)
  - Renumbered to VII-J28 from J40 for corrected alphanumeric order
  - Condition 11880 modified per NSR 20690
  - Condition 24245 added per NSR A/N 24379
- Table VII-J41 (S-208)
  - Renumbered to VII-J29 from J41 for corrected alphanumeric order
- Table VII-J42 (S-1721, TK-1722, TK-1723, TK-1724, TK-1725)

  - Renumbered to VII-J30 from J42 for corrected alphanumeric order
- Table VII-J43 (S-1726)
  - Renumbered to VII-J31 from J43 for corrected alphanumeric order
- Table VII –K3 (A-37)
  - Add A-68 and modify Condition 11879 per NSR 20690
  - Condition 11879, Part 18, replaced by Condition 24245 per NSR A/N 24379
- Table VII –K4 (A-36)
  - Add A-68 and modify Condition 11879 per NSR 20690
  - Condition 11879, Part 18, replaced by Condition 24245 per NSR A/N 24379

VIII. Test Methods

This section of the permit lists test methods that are associated with standards in District or other rules. It is included only for reference. In most cases, the test methods in the rules are source test methods that can be used to determine compliance but are not required on an ongoing basis. They are not applicable requirements.

If a rule or permit condition requires ongoing testing, the requirement will also appear in Section IV of the permit.

Changes to permit: No changes

IX. Permit Shield:

The District rules allow two types of permit shields. The permit shield types are defined as follows: (1) A provision in a major facility review permit explaining that specific federally enforceable regulations and standards do not apply to a source or group of sources, or (2) A provision in a major facility review permit explaining that specific federally enforceable applicable requirements for monitoring, recordkeeping and/or reporting are subsumed because other applicable requirements for monitoring, recordkeeping, and reporting in the permit will assure compliance with all emission limits.

The second type of permit shield is allowed by EPA's White Paper 2 for Improved Implementation of the Part 70 Operating Permits Program. The District uses the second type of permit shield for all streamlining of monitoring, recordkeeping, and reporting requirements in Title V permits. The District's program does not allow other types of streamlining in Title V permits.

This facility has the first and second types of permit shield.

Changes to permit: No changes

X. Revision History

The revision history was updated.

XI. Glossary

Changes to permit: No changes

XII. Appendix A - State Implementation Plan

Changes to permit:
This section has been deleted. The address for EPA's website is now found in Sections III and IV.

D. Alternate Operating Scenarios:

No alternate operating scenario has been requested for this facility.

E. Compliance Status:

An inter-office memorandum from the Director of Compliance and Enforcement, to the Director of Permit Services, presents a review of the compliance record of Site #: B2626. The Compliance and Enforcement Division staff has reviewed the records for Valero Refining Company for the period between December 20, 2010 through November 14, 2012. This review was initiated as part of the District evaluation of an application by Valero Refining Company for a Title V permit. The BAAQMD compliance report is provided in Appendix A below.

APPENDIX A

BAAQMD COMPLIANCE REPORT

COMPLIANCE & ENFORCEMENT DIVISION

Inter-Office Memorandum

December 1, 2012

TO: JIM KARAS – ACTING DIRECTOR OF ENGINEERING

FROM: WAYNE KINO – DIRECTOR OF ENFORCEMENT

SUBJECT: REVIEW OF COMPLIANCE RECORD OF:

VALERO REFINING COMPANY – SITE #B2626

Background

This review was initiated as part of the District evaluation of an application by Valero Refining Company for a Title V Permit Renewal. It is standard practice of the Compliance and Enforcement Division to undertake a compliance record review in advance of a renewal of a Title V Permit to Operate. The purpose of this review is to assure that any non-compliance problems identified during the prior two-year permit term have been adequately addressed by returning the facility to compliance, or, if non-compliance persists, that a schedule of compliance is properly incorporated into the Title V permit compliance schedule. In addition, the review checks for patterns of recurring violation that may be addressed by additional permit terms. Finally, the review is intended to recommend, if necessary, any additional permit conditions and limitations to improve compliance.

Compliance Review

Staff reviewed Valero Refining Company Annual Compliance Certifications for December 20, 2010 to November 14, 2012 and found no ongoing non-compliance.

The District has conducted a compliance review of 112 Notices of Violation (NOVs) issued to Valero Refining Company from December 20, 2010 to November 20, 2012. While the petroleum refining facility received a number of violations over this 1.8-year period, for facilities as large, complex and heavily regulated as a petroleum refining facility within the Bay Area Air Quality Management District's jurisdiction, violations are likely to occur. It is important to note that all of the violations associated with the NOVs were in compliance at the time of this review. Furthermore, the District's analysis of the NOVs for the 1.8-year period indicated that there no ongoing violations that would currently require a compliance schedule.

Understanding how the District handles the violations associated with the NOVs is important to understanding how the District evaluated the facility's compliance status. Whenever the District discovers a violation, it begins a two-step process. The first step is to end the violation and bring the alleged violator back into compliance. Once compliance is achieved, the second step is to proceed with penalty assessment. It is District policy to not proceed with penalty assessment until compliance has been achieved. If a facility has not achieved compliance in a timely fashion, the District proceeds with additional enforcement action. The vast majority of Notice of Violation penalties are resolved through settlement negotiations.

The results of the District's compliance review are shown in Table I. As stated above, the 112 violations associated with the 88 NOVs were in compliance at the time of this review. In 80% of the violations, compliance was achieved within 1 day of occurrence. In the remaining 20% of the violations, the violations achieved compliance shortly after discovery but did not represent ongoing violation that would require a compliance schedule in a Title V permit. In some cases, permit condition modifications have been made to address permit violations during the review period. There were several sources that had multiple violations. The violations did not indicate recurrent patterns of violation because investigations into the cause of the violations revealed unrelated causes.

Of the 88 NOVs issued, about 80% of the violations resulted from the facility self-reporting, pursuant to District Regulations and Title-V requirements. Based on this review and analysis of all the violations for the 1.8-year period, the District has concluded that no schedule of compliance or change in permit terms is necessary beyond what is already contained in the petroleum refining facilities Title V permit, as the record showed that the violations returned to compliance, were intermittent or did not evidence on-going non-compliance, there are no pattern of recurring violation, and the facility was in compliance at the time of this review.

The violation details associated with the 88 Notices of Violation (112 violations) are summarized below and detailed in Table 1 attached.

District Staff has conducted a compliance review of Notice to Comply (NTC's) issued to Valero from December 20, 2010 through November 20, 2012. The District may use the NTC to achieve compliance by using enforcement action appropriate to the severity of the violation. In most cases, these violations involve procedural, administrative, or recordkeeping omissions that did not conceal a violation or were de minimis emissions. During this reporting period none of the NTC's resulted in the issuance of a Notice of Violation for failing to correct a minor NTC violation.

Staff also reviewed additional District compliance records for Valero Refining Company for December 20, 2010 to November 20, 2012. During this period Valero Refining Company activities known to the District include:

The District received forty-six (46) air pollution complaints alleging Valero Refining Company as the source. Seventeen (17) of these complaints were confirmed.

The District received eighty-eight (88) notifications for Reportable Compliance Activities (RCA)[1]: two (2) breakdown requests, sixty-one (61) indicated monitor excesses, zero (0) Pressure Relief Valve venting and twenty-five (25) in-operative monitor reports. Fifty (50) of the RCAs resulted in NOVs.

The District processed zero (0) dockets for variances and permit appeals, before the District's Hearing Board. There are currently four variances related to revisions of Title-V Permit pending final resolution.

The District did not enter into any enforcement agreements or any abatement orders with Valero Refining Co.

Conclusion

The Compliance and Enforcement Division has made a determination that for the review period Valero Refining Company was in intermittent compliance. There is no evidence of on-going non-compliance that would warrant consideration of a Title V permit compliance schedule or additional permit terms. The Division does not have any recommendations for any additional permit conditions and limitations and to improve compliance beyond what is already contained in the Title V Permit under consideration.

WK, RL, RP, EJG

[1] Reportable Compliance Activity (RCA), also known as "Episode" reporting, is the reporting of compliance activities involving a facility as outlined in District Regulations and State Law. Reporting covers breakdown requests, indicated monitor excesses, pressure relief device releases, inoperative monitor reports and flare monitoring.

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VALERO REFINING COMPANY
(B2626)

V#	S#	Occur	Issued	Reg.	Violation comments	Compliance Achieved	Basis for no compliance schedule
A51432A	6	12/10/2010	1/10/2011	1-441	Failure to provide records by deadline	3/23/2011	Valero provided the investigation report request by the District.
A51433A	1	12/10/2010	1/10/2011	1-441	Failure to provide records by deadline	3/13/2011	Valero provided the investigation report request by the District.
A51434A	5	12/9/2010	2/28/2011	2-6-307	Main stack emission greater than 40.0 lbs/hr	12/9/2010	This is a one day violation. However, emissions from the main stack did not cease until the FCCU was shutdown on December 10, 2010
A51441A	18	7/16/2010	2/28/2011	12-11-502.3.1	Failure to collect flare gas sample	7/16/2010	This violation occurred on one day, and was for failing to follow administrative procedures for taking flare gas samples. The flare sample had not been collected, technician collected manual sample.
A51442A	Fugitives	7/20/2010	2/28/2011	8-18-401	Components not inspected quarterly.	7/20/2010	This violation was administrative for fugitive emission monitoring related to not inspecting components. The violation was corrected the same day by tagging the valves and putting them into the inspection program.
A51442B	Fugitives	7/20/2010	2/28/2011	8-18-402	Self-reporting of fugitive emission components found to be misclassified by Valero Refining Company's Leak Detection and Repair (LDAR) contractor, Environmental Analytics (EA).	7/20/2010	This violation was administrative for fugitive emission monitoring related to not inspecting components. The violation was corrected the same day by tagging the valves and putting them into the inspection program.
A51443A	131	7/21/2010	2/28/2011	1-523.1	Failure to report inop monitor greater than 24hrs and over 15 consecutive days	7/21/2010	This was an administrative violation, related to the late reporting of an in-operative monitor. Though it was late, the inoperative monitor episode was reported to the District

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V#	S#	Occur	Issued	Reg.	Violation comments	Compliance Achieved	Basis for no compliance schedule
A51443B	131	7/21/2010	2/28/2011	1.523.2	Failure to report inop monitor greater than 24hrs and over 15 consecutive days	7/21/2010	This was an administrative violation, related to the late reporting of an in-operative monitor. Though it was late, the inoperative monitor episode was reported to the District
A51444A	Fugitives	10/22/2010	2/28/2011	8-18-401	Components not inspected quarterly.	10/22/2010	This violation was administrative for fugitive emission monitoring related to not inspecting components. The violation was corrected the same day by tagging the valves and putting them into the inspection program.
A51444B	Fugitives	10/22/2010	2/28/2011	8-18-402	Self-reporting of fugitive emission components found to be misclassified by Valero Refining Company's Leak Detection and Repair (LDAR) contractor, Environmental Analytics (EA).	10/22/2010	This violation was administrative for fugitive emission monitoring related to not inspecting components. The violation was corrected the same day by tagging the valves and putting them into the inspection program.
A51445A	19	1/14/2011	2/28/2011	12-11-502.3.1	Failure to collect flare gas sample w/in proper time period	1/14/2011	This violation occurred on one day, and was for failing to follow administrative procedures for taking flare gas samples. The flare sample had not been collected, technician collected manual sample.
A51446A	Fugitives	1/26/2011	2/28/2011	8-18-401	Components not inspected quarterly.	1/26/2011	This violation was administrative for fugitive emission monitoring related to not inspecting components. The violation was corrected the same day by tagging the valves and putting them into the inspection program.
A51446B	Fugitives	1/26/2011	2/28/2011	8-18-402	Self-reporting of fugitive emission components found to be misclassified by Valero Refining Company's Leak Detection and Repair (LDAR) contractor, Environmental Analytics (EA).	1/26/2011	This violation was administrative for fugitive emission monitoring related to not inspecting components. The violation was corrected the same day by tagging the valves and putting them into the inspection program.
A51447A	18	12/12/2010	2/28/2011	12-11-502.3.1	Failure to collect flare sample w/in proper time period	12/12/2010	This violation occurred on one day, and was for failing to follow administrative procedures for taking flare gas samples. The flare sample had not been collected, technician collected manual sample.
A51448A	18	12/24/2010	2/28/2011	12-11-502.3.1	Failure to collect flare samples w/in proper time period	12/24/2010	This violation occurred on one day, and was for failing to follow administrative procedures for taking flare gas samples. The flare sample had not been collected, technician collected manual sample.
A51449A	18	11/14/2010	2/28/2011	12-11-502.3.1	Failure to collect flare gas sample	11/14/2010	This violation occurred on one day, and was for failing to follow administrative procedures for taking flare gas samples. The flare sample had not been collected, technician collected manual sample.
A51450A	5	12/3/2010	2/28/2011	2-6-307	Failure to operate 4 of 5 ESPs per P/C 19466 pt5	12/10/2010	This violation was corrected when the FCCU was shutdown on December 10, 2010.
A51767A		5/25/2011	10/20/2011	8-5-306	P/V value leaking > 500ppm. (tag#83036)	5/25/2011	PV was repaired by Valero.
A51768A	124	5/25/2011	10/20/2011	8-5-306	P/V valve leaking >500ppm (s/v-1705A)	5/25/2011	PV was repaired by Valero.
A51769A	227	5/25/2011	10/20/2011	2-6-307	late deviation report filed on 6/23/11	5/25/2011	Violation was corrected the same day.
A51769B	227	5/25/2011	10/20/2011	8-5-306	P/V valve leaking >500ppm (sv-17176B)	5/25/2011	Violation was corrected the same day.

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V#	S#	Occur	Issued	Reg.	Violation comments	Compliance Achieved	Basis for no compliance schedule
A51773A	196	11/22/2011	2/22/2012	8-5-306.2	P/V value(s) leaking > 500ppm. (SV-2078A & SV-2078C) Valero Dev. Ref. #757	12/5/2011	PV was repaired by Valero.
A51774A	None	11/28/2011	2/28/2012	8-5-306.2	P/V valve leaking > 500ppm. (tag #83038)	12/8/2011	PV was repaired by Valero.
A51775A	124	11/28/2011	2/22/2012		P/V valve(s) leaking > 500ppm (sv-1705A & 1705B)	12/8/2011	PV was repaired by Valero.
A51827A	1,2	3/25/2011	4/6/2011	6-1-301	Excess visible emissions > Ring1 from main stack	3/25/2011	This violation was corrected the same day when Valero normalized operations at the SRU and returned flow to the TGU.
A51828A	5	12/1/2010	6/21/2011	6-1-302	Opacity excess > ring 1 (excess 05X19)	12/2/2010	This violation was corrected when the FCCU was shutdown on December 10, 2010.
A51829A	5	12/3/2010	6/21/2011	6-1-302	Opacity excess > Ring1 (excess #05X32)	12/10/2010	This violation was corrected when the FCCU was shutdown on December 10, 2010.
A51830A	247	12/1/2010	6/29/2011	2-6-307	Failure to meet P/C #22949 part 12 (05X23&24)	12/6/2010	This violation was corrected when the FCCU was shutdown on December 10, 2010.
A51831A	247	12/4/2010	6/29/2011	2-6-307	Failure to meet permit condition 22949 part 3	12/6/2010	This violation was corrected when the FCCU was shutdown on December 10, 2010.
A51832A	1,2	4/6/2011	7/7/2011	2-6-307	Failure to submit 10 day & 30 day deviation	3/25/2011	No Further Action, Enforcement 10/5/11
A51835A	3	8/15/2010	7/7/2011	6-1-302	Excess opacity > ring 1 (05V29)	8/15/2010	This violation was corrected on the same day.
A51836A	5	8/29/2010	7/7/2011	6-1-302	Excess opacity > ring 1 for 3 min (05V67)	8/29/2010	This violation was corrected the same day.
A51837A	1,2	12/29/2010	7/27/2011	9-1-307	Excess SO2 per District Regulation (excess 05X91)	12/29/2010	This violation was corrected on the same day.
A51838A	1031	12/18/2010	7/27/2011	2-6-307	Failure to meet P/C #19177 180(1) (excess 05X67)	12/18/2010	This violation was corrected on the same day.
A51840A	21	12/9/2010	8/17/2011	2-6-307	H2S 3hr & 24hr limits exceeded (05X40 & 05X41)	12/10/2010	This violation was corrected when the FCCU was shutdown on December 10, 2010.
A51840B	21	12/9/2010	8/17/2011	10	H2S 3hr & 24hr limits exceeded (05X40 & 05X41)	12/10/2010	This violation was corrected when the FCCU was shutdown on December 10, 2010.
A51841A	1,2	2/17/2011	8/31/2011	9-1-307	excess SO2 from main stack (05Y54)	2/17/2011	This violation was corrected on the same day.
A51842A	41	3/13/2011	9/7/2011	1-523.1	Late reporting of inoperative monitor (05Z01)	3/15/2011	This was an administrative violation, related to the late reporting of an in-operative monitor. Though it was late, the inoperative monitor episode was reported to the District
A51843A	37	2/22/2011	9/28/2011	2-6-307	Failure to meet permit condition (05Y77) 3hr NOx limit exceeded Ref#692	2/23/2011	This violation was corrected on the same day.
A51844A	1030	3/9/2011	9/28/2011	2-6-307	Failure to meet P/C#19177pt19a (05Y87) cogen NOx mass emission limit	3/9/2011	This violation was corrected the same day.
A51845A	37	3/18/2011	9/28/2011	2-6-307	Failure to meet P/C#16386pt1 (05Z07) 3hr avg. NOx excess	3/18/2011	This violation was corrected the same day.
A51846A	220	3/21/2011	9/28/2011	2-6-307	Failure to meet P/C#10574 pt.24 (05Z11) rolling 8hr avg CO limit excess	3/22/2011	This violation was corrected the same day.
A51847A	1,2	3/25/2011	9/28/2011	9-1-307	Excess SO2 concentrations per Federal & District Regulations (05Z23)	3/25/2011	This violation was corrected the same day when Valero normalized operations at the SRU and returned flow to the TGU.
A51847B	1,2	3/25/2011	9/28/2011	10	Excess SO2 concentrations per Federal & District Regulations (05Z23)	3/25/2011	This violation was corrected the same day when Valero normalized operations at the SRU and returned flow to the TGU.
A51848A	1,2	2/9/2011	9/28/2011	9-1-307	Excess main stack SO2 concentrations (05Y42)	2/12/2011	This violation was corrected on the same day.

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A51848B	1,2	2/9/2011	9/28/2011	10	Excess main stack SO2 concentrations (05Y42)	2/12/2011	This violation was corrected on the same day.
A51849A	1,2	2/22/2011	9/28/2011	9-1-307	excess main stack SO2 emissions (05Y74)	2/23/2011	This violation was corrected on the same day when operations at the SRU were normalized and flow was returned to the TGU.
A51849B	1,2	2/22/2011	9/28/2011	10	excess main stack SO2 emissions (05Y74)	2/23/2011	This violation was corrected on the same day when operations at the SRU were normalized and flow was returned to the TGU.
A51850A	220	5/11/2011	9/28/2011	2-6-307	Failure to meet P/C#10574pt24 (05Z77) rolling 8hr CO excess	5/11/2011	The violation was corrected the same day.
A51851A	1,2	4/25/2011	9/28/2011	9-1-307	Excess main stack SO2 (05Z46)	4/25/2011	This violation was corrected the same day when Valero normalized operations at the SRU and returned flow to the TGU.
A51852A	1,2	6/16/2011	10/19/2011	9-1-307	Excess main stack SO2 concentrations per Federal & District regulations (06A23)	6/17/2011	This violation was corrected the same day when Valero normalized operations at the SRU and returned flow to the TGU.
A51852B	1,2	6/16/2011	10/19/2011	10	Excess main stack SO2 concentrations per Federal & District regulations (06A23)	6/17/2011	This violation was corrected the same day when Valero normalized operations at the SRU and returned flow to the TGU.
A51854A	20	2/24/2011	12/29/2011	2-6-307	NOx box excess on process furnace	2/25/2011	This violation was corrected when unit was re-tested
A51855A	131	7/31/2010	12/29/2011	2-6-307	Excess NMHC lb/hr limit, 15lbs/day (05V22	8/1/2010	This violation was corrected and in compliance at the conclusion of the reporting period. Operator error caused the excess emission.
A51856A	WWT	11/2/2011	12/29/2011	1-301	Confirmed odor complaint associated w/ activities at Valero wastewater treatment plant	11/2/2011	Valero ceased the bleach water removal.
A51857A	1031	12/7/2010	1/5/2012	1-522.7	Late reporting of CEM excess (05Y10)	12/7/2010	This was an administrative violation, related to the late reporting of an in-operative monitor. Though it was late, the inoperative monitor episode was reported to the District
A51857B	1030	12/7/2010	1/5/2012	2-6-307	Failing to meet a Title V standard permit condition	12/7/2010	This was an administrative violation, related to the late reporting of an in-operative monitor. Though it was late, the inoperative monitor episode was reported to the District
A51858A	37	5/29/2011	1/5/2012	2-6-307	Failure to meet P/C 16386pt1 for NOx conc.	5/29/2011	Violation was corrected the same day.
A51859A	1030	6/23/2011	1/5/2012	2-6-307	Excess NOx concentration & lbs/hr per P/C 19177pts19a&b	6/23/2011	Violation was corrected the same day.
A51860A	1,2	6/19/2011	1/5/2012	9-1-307	Excess SO2 per District & Fed reg from main stack	6/19/2011	This violation was corrected the same day when Valero normalized operations at the SRU and returned flow to the TGU.
A51860B	1,2	6/19/2011	1/5/2012	10	Excess SO2 per District & Fed reg from main stack	6/19/2011	This violation was corrected the same day when Valero normalized operations at the SRU and returned flow to the TGU.
A51861A	5	6/27/2011	1/5/2012	2-6-307	Excess CO limits per P/C#24239pt2 & 20820pt63	7/5/2011	Violation was corrected following adjustments to PS furnace operation.
A51862A	220	7/4/2011	1/5/2012	2-6-307	excess CO during rolling 8hr average (06A58)	7/5/2011	Violation was corrected the same day.
A51863A	1030	9/4/2011	1/5/2012	2-6-307	Excess NOx concentration & lbs/hr per P/C19177pt19	9/4/2011	Cancel, May 29, 2012
A51864A	6	2/24/2011	1/5/2012	2-6-307	Loss of circulation results in implied opacity	2/24/2011	This violation was corrected the same day when the flow to the new FGS was normalized.
A51865A	18	3/24/2011	1/5/2012	12-11-502.3	1 late flare sample due to clogged check valve	3/24/2011	This violation occurred on one day, and was for failing to follow administrative procedures for taking flare gas samples. The flare sample had not been collected, technician collected manual sample.

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V#	S#	Occur	Issued	Reg.	Violation comments	Compliance Achieved	Basis for no compliance schedule
A51866A	16	5/30/2011	1/5/2012	12-12-406	Failure to submit flare causal on time	9/14/2011	Valero submitted the flare causal to the District
A51868A	131	9/30/2010	1/25/2012	2-6-307	Excess NMHC lb/hr limit, 15 lb/day (05V88)	9/30/2010	This violation was corrected and in compliance at the conclusion of the reporting period. Operator error caused the excess emission.
A51869A	Fugitives	4/21/2011	2/8/2012	8-18-401	LDAR components misclassified or undocumented	4/21/2011	This violation was administrative for fugitive emission monitoring related to not inspecting components. The violation was corrected the same day by tagging the valves and putting them into the inspection program.
A51869B	Fugitives	4/21/2011	2/8/2012	8-18-402	Self-reporting of fugitive emission components found to be misclassified by Valero Refining Company's Leak Detection and Repair (LDAR) contractor, Environmental Analytics (EA).	4/21/2011	This violation was administrative for fugitive emission monitoring related to not inspecting components. The violation was corrected the same day by tagging the valves and putting them into the inspection program.
A51870A	Fugitives	4/21/2011	2/8/2012	8-18-306	Failure to complete DOR pump repair during 1Q-2011 T/A	4/21/2011	This violation was corrected during the 1st quarter 2011. The pump was removed from srvc and repaired.
A51871A	Fugitives	7/29/2011	2/8/2012	8-18-402.1	LDAR components not documented	7/29/2011	This violation was administrative for fugitive emission monitoring related to not inspecting components. The violation was corrected the same day by tagging the valves and putting them into the inspection program.
A51873A	Fugitives	10/27/2011	2/8/2012	8-18-401	LDAR components misclassified, undocumented	10/27/2011	This violation was administrative for fugitive emission monitoring related to not inspecting components. The violation was corrected the same day by tagging the valves and putting them into the inspection program.
A51873B	Fugitives	10/27/2011	2/8/2012	8-18-402	Self-reporting of fugitive emission components found to be misclassified by Valero Refining Company's Leak Detection and Repair (LDAR) contractor, Environmental Analytics (EA).	10/27/2011	This violation was administrative for fugitive emission monitoring related to not inspecting components. The violation was corrected the same day by tagging the valves and putting them into the inspection program.
A51873C	Fugitives	10/27/2011	2/8/2012	10	40CFR60.482-6; open-ended lines	10/27/2011	To correct the violation, the OELs were plugged by Valero.
A51874A	GLM	2/22/2012	2/22/2012	1-510	Failure to report & maintain accurate GLM data	2/22/2012	To correct the violation, Valero installed new data loggers at the GLM stations which accurately record and maintain the data as required by District Technical.
A51874B	GLM	2/22/2012	2/22/2012	1-544	Failure to report & maintain accurate GLM data	2/22/2012	To correct the violation, Valero installed new data loggers at the GLM stations which accurately record and maintain the data as required by District Technical.
A51875A	Fugitives	1/27/2011	2/29/2012	10	40CFR60.482-6 open-ended lines	1/27/2011	To correct the violation, the OELs were plugged by Valero.
A51875B	Fugitives	1/27/2011	2/29/2012	8-18-401	LDAR components misclassified, undocumented	1/27/2011	This violation was administrative for fugitive emission monitoring related to not inspecting components. The violation was corrected the same day by tagging the valves and putting them into the inspection program.
A51875C	Fugitives	1/27/2011	2/29/2012	8-18-402	Self-reporting of fugitive emission components found to be misclassified by Valero Refining Company's Leak Detection and Repair (LDAR) contractor, Environmental Analytics (EA).	1/27/2011	This violation was administrative for fugitive emission monitoring related to not inspecting components. The violation was corrected the same day by tagging the valves and putting them into the inspection program.

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A51876A	Fugitives	1/30/2012	3/21/2012	8-18-401	LDAR components misclassified, undocumented	1/30/2012	This violation was administrative for fugitive emission monitoring related to not inspecting components. The violation was corrected the same day by tagging the valves and putting them into the inspection program.
A51876B	Fugitives	1/30/2012	3/21/2012	8-18-402	Self-reporting of fugitive emission components found to be misclassified by Valero Refining Company's Leak Detection and Repair (LDAR) contractor, Environmental Analytics (EA).	1/30/2012	This violation was administrative for fugitive emission monitoring related to not inspecting components. The violation was corrected the same day by tagging the valves and putting them into the inspection program.
A51876C	Fugitives	1/30/2012	3/21/2012	10	40CFR60.482-6 open-ended lines	1/30/2012	To correct the violation, the OELs were plugged by Valero.
A52327A	LPFG	11/6/2011	4/11/2012	10	Exceeded the 3hr ave H2S limit at LPFG (06C15)	11/7/2011	This violation was corrected the same day when Valero normalized operations at the SRU and returned flow to the TGU.
A52328A	1030	11/6/2011	4/11/2012	2-6-307	Failure to meet P/C#19177pt19 for H2S 3hr ave (06C16)	11/7/2011	Violation was corrected the same day.
A52330A	1,2	11/22/2011	4/24/2012	9-1-307	Excess SO2 at main stack (06C41)	11/22/2011	This violation was corrected the same day when Valero normalized operations at the SRU and returned flow to the TGU.
A52331A	LPFG	11/12/2011	4/24/2012	10	Excess H2S in LPFG (06C30)	11/12/2011	Violation was corrected when adjusted MEA scrubber to accommodate sour gas.
A52332A	1030	11/12/2011	4/24/2012	2-6-307	Excess H2S in fuel gas per P/C19177 19 (06C31)	11/12/2011	Violation was corrected when Valero switched the Cogen Unit to run on NG only
A52333A	5	1/18/2012	4/24/2012	2-6-307	Excess CO per 1hr & 24hr avg. (06D21 & 06D22)	1/18/2012	Valero operations normalized feed to the CO furnaces. CO concentrations returned to compliance.
A52335A	FGS	1/31/2011	5/3/2012	8-8-314	Failure to perform drain inspections at FGS	1/31/2011	Drain inspections were performed and are now tracked by fugitive contrator
A52335B	FGS	1/31/2011	5/3/2012	10	Failure to report NSPS Inspections	1/31/2011	Inspection and S/U notification of FGS reported to the District
A52336A	LPFG	9/27/2011	5/3/2012	2-6-307	Excess H2S concentrations in LPFG (06B67)	9/27/2011	Violation was corrected when adjusted MEA scrubber to accommodate sour gas.
A52337A	WWT	11/13/2011	5/21/2012	1-523.1	Late reporting of in-operative flow monitor at WWT.	11/15/2011	This was an administrative violation, related to the late reporting of an in-operative monitor. Though it was late, the inoperative monitor episode was reported to the District
A52338A	WWT	4/20/2012	5/21/2012	1-523.1	Late reporting of in-operative flow monitor at WWT.	4/24/2012	This was an administrative violation, related to the late reporting of an in-operative monitor. Though it was late, the inoperative monitor episode was reported to the District
A52339A	1031	3/11/2012	5/21/2012	2-6-307	Excess TRS & H2S @ SG-4901 per P/C19177pt19	3/13/2012	Violation was corrected when Cogen Unit was switched to operate on NG only
A52340A	LPFG	3/11/2012	5/21/2012	2-6-307	excess H2S & TRS in refinery LPFG	3/13/2012	Violation was corrected when adjusted MEA scrubber to accommodate sour gas.
A52341A	55	3/14/2012	5/30/2012	8-5-307.3	Tk-2801 PV vent found to be leaking >500ppm	5/19/2012	Violation corrected when PV was removed and replaced by new PV
A52342A	WWT	3/31/2012	5/30/2012	10	Failure to perform 1st Qtr Benzene Waste Inspection at Oil Movements and Laboratory	3/31/2012	Violation was corrected when inspection was performed at Oil Movements and Laboratory.
A52343A	124	4/30/2012	5/30/2012	8-5-307.3	PV vents found to be leaking >500ppm	4/30/2012	Violation corrected when PV was removed and replaced by new PV

Bay Area Air Quality Management District
Review of Compliance Record

VALERO REFINING COMPANY
(B2626)

V#	S#	Occur	Issued	Reg.	Violation comments	Compliance Achieved	Basis for no compliance schedule
A52344A	Fugitives	4/26/2012	6/6/2012	8-18-402.1	Self-reporting of fugitive emission components found to be misclassified by Valero Refining Company's Leak Detection and Repair (LDAR) contractor, Environmental Analytics (EA).	4/26/2012	This violation was administrative for fugitive emission monitoring related to not inspecting components. The violation was corrected the same day by tagging the valves and putting them into the inspection program.
A52344B	Fugitives	4/26/2012	6/6/2012	8-18-401.2	LDAR components misclassified, undocumented	4/26/2012	This violation was administrative for fugitive emission monitoring related to not inspecting components. The violation was corrected the same day by tagging the valves and putting them into the inspection program.
A52344C	Fugitives	4/26/2012	6/6/2012	10	40CFR60.482-6 open-ended lines	4/26/2012	To correct the violation, the OELs were plugged by Valero.
A52345A	45	1/17/2012	7/3/2012	2-6-307	Failure to abate S-45 via S-37 and SCR following S/U of S-37 per P/C#16386 #3	1/20/2012	This violation was corrected after a cap was installed on the atmospheric exhaust of S-45. On startup of S-37/SG-702 the swing door was partially stuck open allowing emissions.
A52346A	1030/1031	4/15/2012	7/31/2012	2-6-307	Excess NOx concentration & lbs/hr per P/C19177pt19 (06E74 and 06E75)	4/15/2012	Following the NH3 injection valve trip, the operator opened a bypass around the failed valve to re-establish the NH3 flow to the unit. NOx concentrations returned to compliance
A52347A	1030	4/21/2012	7/31/2012	2-6-307	Excess CO concentration per P/C19177pt19d (06E85)	4/21/2012	Valero operations had to perform an emergency shutdown of Compressor 4902 (C-4902) due to vibrations which caused the CO excess. In order to achieve compliance with CO concentrations, Valero operations shutdown SG-4901 (S-1030)
A52348A	133	1/31/2012	7/31/2012	8-5-403	Failure to perform PV Vent monitoring during the period of 2009-2011	1/31/2012	Untagged components have been retagged and entered into the LDAR monitoring database.
A52351A	1030	6/11/2012	10/16/2012	2-6-307	Excess H2S @ SG-4901 per P/C19177pt19	6/11/2012	Violation was corrected when Cogen Unit was switched to operate on NG only
A52439A	1059/1060	9/4/2012	9/4/2012	8-18-303	Failure to repair leaking components within 24 hours of discovery.	9/15/2012	Duct tape removed from the components. Components tightened, inspected and found to be in compliance.
A52702A	78 & 83	6/22/2012	10/16/2012	8-5-404	Failure to submit tank seal inspection reports within 60 days	6/22/2012	Reports were submitted to the District
A52703A	Fugitives	7/30/2012	10/16/2012	8-18-402.1	Self-reporting of fugitive emission components found to be misclassified by Valero Refining Company's Leak Detection and Repair (LDAR) contractor, Environmental Analytics (EA).	7/30/2012	This violation was administrative for fugitive emission monitoring related to not inspecting components. The violation was corrected the same day by tagging the valves and putting them into the inspection program.
A52703B	Fugitives	7/30/2012	10/16/2012	8-18-401.2	LDAR components misclassified, undocumented	7/30/2012	This violation was administrative for fugitive emission monitoring related to not inspecting components. The violation was corrected the same day by tagging the valves and putting them into the inspection program.
A52704A	Tk-1726	9/11/2012	10/16/2012	8-5-307	PV vents found to be leaking >500ppm	9/11/2012	Violation corrected when PV was removed and replaced by new PV

APPENDIX B

Permit Evaluations

For

- NSR 16707 – S-43, S-44, S-46 Source Test Frequency
- NSR 20558 - S-23 NOx SU/SD low firing condition
- NSR 20690 – A-68 Thermal Oxidizer at WWTP
- NSR 21350 – S-252 Emergency Diesel H20 Pump replaced S-240
- NSR 21490 – S-1010 Dearator vents source test frequency
- NSR 21573 – Dump Stack for FCCU/CKR P-69
- NSR 22080 – BAP Connection to S-1003
- NSR 22081 – S-23 ULNB Replacement
- NSR 22082 – Alky Guard Bed, S-1063
- NSR 22574 – S-16 Acid Gas Flare Tip Replacement
- NSR 22602 – NOx Box Condition 21233, Test Submittal Dates
- NSR 22710 – S-1059, S-1060 Consent Decree 3-Yr RATA Allowance
- NSR 22998 – S-165, EVR PTO and Annual Throughput Increase
- NSR 23701 – S22 ULNB Replacement
- NSR 23841 – S-129 Condition 1709 Revisions
- NSR 24094 – S-34, S-35, S-40, S-41 NOx for intermittent operations
- NSR 24329 – VIP Amendments Cleanup, Condition 20820
- NSR 24379 – Consolidation of Consent Decree Requirements
- NSR 24386 – Update Fugitive Condition
- NSR 24450 – Reduction of Source Test Frequencies
- NSR 24644 – S-21 ULNB Replacement
- NSR 24656 – Consolidation of LPFG Conditions
- NSR 24944 – TK1791 Throughput Limit

EVALUATION REPORT
VALERO REFINING CO.
Application #16707 - Plant #12626

3400 E. Second St.
Benicia, CA 94510

I. BACKGROUND

Valero has applied for a change of condition to the Permit to Operate for the following equipment:

S-173 Coker Steam Superheat Furnace F-902, 22 MMBtu/hr

S-43 Process Gas Turbine GT-401, GE, 132.4 MMBtu/hr

S-44 Process Gas Turbine GT-701, GE, 141 MMBtu/hr

S-46 Process Gas Turbine GT-1031, GE, 132.4 MMBtu/hr

Condition # 254, Part 3 required that the owner/operator of S-173 must test the NOx emission twice a year to demonstrate compliance with BAAQMD Regulation 9-10 for nitrogen oxide (NOx) and carbon monoxide (CO) from boilers, steam generators and process heaters in petroleum refineries. Similarly, Condition #19466, part 11 required that the owner/operator of S-42, S-44 and S-46 must test the NOx emission twice a year to demonstrate compliance with BAAQMD Regulation 9-9-301.1. Valero requests that the semiannual test frequency be reduced to an annual test frequency for all four sources above.

Below are the source test results that Valero collected for sources S-173, S-43, S-44 and S-46 in the past three years. They are all within 10% or below the permitted level.

Source S-173 (F-902), Unit listed is in ppmv @ 3% O2 Retest of 6/23/06

Limits	11/19/04	5/9/05	10/5/05	6/23/06	9/6/06	12/11/06	6/4/07
NOx = 40	34.6	41.1	39	44.4	33.4	35.38	40
CO = 200	<4.0	<2.0	<2.0	<4.0	<4	3.23	-----

Source S-43 (GT-401), Unit listed is in ppmv @ 5% O2

	8/10/04	3/14/05	9/21/05	3/7/06	12/13/06	6/18/07	Limit
NOx	30.7	41.0	41.4	41.43	34.9	42.75	55

No CO limit

Source S-44 (GT-701), Unit listed is in ppmv @ 15% O2

	8/11/04	3/15/05	9/21/05	3/7/06	12/13/06	6/18/07	Limit
NOx	30.2	27.9	33.3	38.94	49.73	41.47	55

No CO limit

Source S-46 (GT-1031), Unit listed is in ppmv @ 15% O2

	8/12/04	3/16/05	9/23/05	3/11/06	12/13/06	6/18/07	Limit
NOx	48	44.0	41.4	39.73	42.73	40	55

No CO limit

There is an existing Condition # 21233, Part 7A (NOx Box condition) required the owner/operator of source S-173 to perform an annual source test to comply with Regulation 9-10 – under the control plan of refinery wide NOx emissions for sources with less than 25 MMBtu/hr. Another existing Condition # 19466, Part 10 required the owner/operator of source S-173 to test the CO emission on an annual basis. Therefore, the District agreed to change the source test frequency for NOX and CO from semiannual to annual in Condition # 254, Part 3 for consistency.

In addition, the newly adopted Regulation 9-9-504 now required an annual source test for compliance demonstration for S-43, S-44 and S-46, gas turbines, with less than 150 MMBtu/hr (<10 MW). To be consistent with the District's regulation, the District agreed to reduce the source test frequency from semiannual to annual for NOx emission. Valero submitted a significant revision to the TV permit concurrently under Application # 16708 for condition changes because the application would be considered as a relaxation of the applicable monitoring, reporting or recordkeeping condition per Regulation 2-6-226.3.

II. EMISSION CALCULATIONS

This application will not result in an emission increase.

III. PLA/NT CUMULATIVE INCREASE SINCE 4/5/1991

There are no net changes to the plant cumulative emissions.

IV. TOXIC SCREENING A/NALYSIS

This application will not result in an increase in toxic air contaminant emissions from existing levels. Therefore, a Toxic RSA is not required per Regulation 2-5.

V. BEST AVAILABLE CONTROL TECHNOLOGY

This application will not result in any emission increase from existing levels. Therefore, BACT is not triggered per Regulation 2-2-301.

VI. OFFSETS

This application does not result in emission increases. Therefore, offsets are not needed per Regulation 2-2-302.

VII. STATEMENT OF COMPLIA/NCE

Source S-173, Steam Boiler, is subject to and expected to be in compliance with all requirements of Regulation 1 (General Provision), Regulation 6 (Particulate Matter and Visible Emissions), and Regulation 9-10-301 (Nitrogen Oxides and Carbon Monoxides From Boilers, Steam Generators and Process in Petroleum Refineries). Steam Boiler S-173 will not exceed a refinery-wide emission rate from affected units, 0.033 pounds NO_x per million BTU of heat input.

Sources S-43, S-44 and S-46, Gas Turbines, are subject to and expected to be in compliance with all requirements of Regulation 1 (General Provision), Regulation 6 (Particulate Matter and Visible Emissions), and Regulation 9-9-301.1.1 (Nitrogen Oxides From Stationary Gas Turbines). Gas Turbines S-43, S-44 and S-46 will not exceed 55 ppmv of NOx when refinery fuel gas is burned.

- Source S-173 is subject to and expected to comply with the following Regulation 10: New Source Performance Standards (NSPS), (40 CFR, Part 60).

- 40 CFR, Part 60, Subpart J Standards of Performance for Petroleum Refineries.

This project is considered to be ministerial under the District's CEQA Regulation 2-1-311 and therefore is not subject to CEQA review. The engineering review for this project requires only the application of standard permit conditions and standard emission factors in accordance with Permit Handbook Chapters 2.1 and 2.3, and therefore is not discretionary as defined by CEQA.

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

PSD is not triggered.

VIII. CONDITIONS

Permit Condition # 254, Valero Refining Company, Amended by Application # 16707, Plant # 12626.

For S-173 Process Furnace (F-902)

1. The Owner/Operator shall maintain the NOx emissions from S-173 at or below 40 ppm "dry" at 3% oxygen. [Basis: Cumulative Increase]

2. The Owner/Operator shall operate the Furnace F-1060 for no more than 30 days per year. [Basis: Cumulative Increase]

3. The Owner/Operator shall conduct a District approved Source Test on source S-173 on an annual basis to determine compliance with part #1. [Basis: Cumulative Increase]

4. Any "banking" application submitted by the Owner/Operator relative to this permit shall, at a minimum, include an analysis of the entire coker, specifically emissions associated with "running normal rates for longer periods." [Basis: Cumulative Increase]

Permit condition # 19466, Valero Refining Company, Application # 13201, amended by Application 16706 and Application 16707, Plant # 12626.

1. Deleted. (Basis: Sampling is a safety problem and there is reasonable assurance that compliance with Regulation 9-1-313.2 is achieved. See detailed analysis in Statement of Basis)

2a. Deleted. (Basis: S-188 vents to the refinery fuel gas system).

2b. Deleted. (Basis: S-189 vents to the refinery fuel gas system).

2c. Deleted. (Basis: S-160 was modified in May, 2005 and now vents to Vapor Recovery System A-13/A26)

2d. The Owner/Operator shall operate S-160 Seal Oil Sparger only when abated by A-13/A-26 Vapor Recovery Compressor to be returned to the refinery fuel gas system. (Basis: Cumulative Increase)

3. The Owner/Operator shall monitor and record on a monthly basis the visible emissions from Sources S-1, S-2, S-8, S-11, S-176, and S-233 to demonstrate compliance with Regulation 6-301 (Ringlemann 1 or 20% opacity). For S-176 only, this monitoring is only required when dry salt is added to the tank. These records shall be kept for a period of at least 5 years from date of entry and shall be made available to District staff upon request. [Basis: Regulation 6-301]

4. The owner/operator shall notify the District in writing by fax or email no less than three calendar days in advance of any scheduled startup or shutdown of any process unit and as soon as feasible for any unscheduled startup or shutdown of a process unit, but no later than 48 hours or within the next normal business day after the unscheduled startup/shutdown. The notification shall be sent in writing by fax or email to the Director of Enforcement and Compliance. The requirement is not federally enforceable. [Regulation 2-1-403]

5a. The Owner/Operator shall abate the emissions from the S-3 and S-4, CO Boilers, by at least four of the five A-1 through A-5 Electrostatic Precipitators, except as indicated in Part 5b, and the Owner/Operator shall exhaust those emissions through the main stack (P-1). [Basis: Regulation 6-301 and Regulation 6-304].

5b. For no more than 30 days per calendar year to allow for source testing and emergency ESP repairs, the Owner/Operator shall abate the emissions from the S-3 and S-4 CO Boilers by at least three of the five A-1 through A-5 Electrostatic Precipitators at all times. If, at anytime, the abatement of S-3 and S-4 with less than four of the five Electrostatic Precipitators does not comply with all District Regulations, this 30-day allowance is rescinded and the Part will be deleted. [Basis: Regulation 6-301 and Regulation 6-304].

5c. In order to demonstrate that operation of S-3 and S-4 with abatement using 3 out of 5 Electrostatic Precipitators does not impact emissions, and to demonstrate compliance with Regulations 6-301, 6-304 and 6-310, the Owner/Operator shall conduct a District approved source test during the operation of 3 ESP units. All source testing shall be completed in accordance with the District's Manual of Procedures. This source test shall be completed and the source test report demonstrating compliance submitted to the

District's Compliance and Enforcement Division and the District's Engineering Division. This source test report shall be approved by the District's Source Test Section prior to 3 ESP unit operation after the initial source test. [Basis: Regulations 6-301, 6-304 and 6-310]

6. The Owner/Operator shall perform an annual source test on Sources S-5 and S-6 to demonstrate compliance with Regulation 6-310 (outlet grain loading no greater than 0.15 grain/dscf). The Owner/Operator shall submit the test results to the District's Compliance and Enforcement Division and the District's Permit Services Division no less than 45 days after the test. These records shall be kept for a period of at least 5 years from date of entry and shall be made available to District staff upon request. [Basis: Regulation 6-310]

7. The Owner/Operator shall perform an annual source test on Sources S-8 and S-176 to demonstrate compliance with Regulation 6-310 (outlet grain loading no greater than 0.15 grain/dscf). The Owner/Operator shall submit the test results to the District's Compliance and Enforcement Division and the District's Permit Services Division no less than 45 days after the test. These records shall be kept for a period of at least 5 years from date of entry and shall be made available to District staff upon request. For S-176 only, this source test is only required when dry salt is added to the tank. [Basis: Regulation 6-310]

8. The Owner/Operator shall perform annually a source test on S-1 and S-2 to determine compliance with Regulation 6-330 (Outlet grain loading not to exceed 0.08 grain/dscf of SO3 and H2SO4). The Owner/Operator shall submit the test results to the District's Compliance and Enforcement Division and the District's Permit Services Division no less than 45 days after the test. These records shall be kept for a period of at least 5 years from date of entry and shall be made available to District staff upon request. [Basis: Regulation 6-330]

9. The Owner/Operator shall perform an annual source test on Sources S-5, S-6 and S-8 to demonstrate compliance with Regulation 6-311 (PM mass emissions rate not to exceed $4.10P^{0.67}$ lb/hr). The Owner/Operator shall submit the test results to the District's Compliance and Enforcement Division and the District's Permit Services Division no less than 45 days after the test. These records shall be kept for a period of at least 5 years from date of entry and shall be made available to District staff upon request. [Basis: Regulation 6-311]

10. The Owner/Operator shall conduct a District-approved source test on a semi-annual basis on Sources S-7, S-20, S-21, S-22, S-23, S-24, S-25, S-26, S-30, S-31, S-32, S-33, S-34, S-40, S-41 and on an annual basis on sources S-35 and S-173 to demonstrate compliance with Regulation 9-10-305 (CO not to exceed 400 ppmv, dry, at 3% O2, operating day average). The Owner/Operator shall submit the test results to the District's Compliance and Enforcement Division and the District's Permit Services Division no less than 45 days after the test. These records shall be kept for a period of at least 5 years from date of entry and shall be made available to District staff upon request.

    The Owner/Operator shall ensure that S-220 does not exceed 400 ppmv of CO, dry, at 3% O2, operating day average, measured by a properly installed CEM for CO and O2. [Basis: Regulation 9-10-305]

11. The Owner/Operator shall conduct an annual District-approved source test on Sources S-43, S-44 and S-46 to demonstrate compliance with Regulation 9-9-301.1 (NOx not to exceed 55 ppmv, dry, at 15% O2, fired on refinery fuel gas). The Owner/Operator shall submit the test results to the District's Compliance and Enforcement Division and the District's Permit Services Division no less than 45 days after the test. These records shall be kept for a period of at least 5 years from date of entry and shall be made available to District staff upon request. [Basis: Regulation 9-9-301.1]

12. The Owner/Operator shall abate the VOC emissions from the S-159 Lube Oil Reservoir using the S-36 Boiler. [Basis: Cumulative Increase]

13. The Owner/Operator shall vent the VOC emissions from S-167 and S-168 Seal Oil Spargers in a closed system to the flare gas recovery header to be returned to the refinery fuel gas system. [Basis: Cumulative Increase]

14. The Owner/Operator shall use the continuous emission monitors required by Regulation 9, Rule 10, to monitor compliance for all NOx limits at the following sources:
CO Furnaces: S-3, S-4
Process Furnaces: S-21, S-22, S-23, S-25, S-30, S-31, S-32, S-33, S-220
Steam Generators: S-40, S-41

15. The Owner/Operator shall use the continuous opacity monitors required by Regulation 1-520 to monitor compliance for the opacity limits at the Main Stack for the following sources:
S-5 Fluid Catalytic Cracking Unit, Catalyst Regenerator
S-6 Fluid Coker, Burner

16. To allow sufficient time to prepare test plans, train employees, and install any necessary equipment, the monitoring requirements Parts 1, 2c, 3, 6, 7, 8, 9, 10, 11, 14 and 15 are effective April 1, 2004.

IX. RECOMMENDATION

Issue a conditional change to the Permit to Operate to Valero Refining Company for the following equipment:

S-173 Coker Steam Superheat Furnace F-902, 22 MMBtu/hr

S-43 Process Gas Turbine GT-401, GE, 132.4 MMBtu/hr

S-44 Process Gas Turbine GT-701, GE, 141 MMBtu/hr

S-46 Process Gas Turbine GT-1031, GE, 132.4 MMBtu/hr

Thu H. Bui
Senior Air Quality Engineer
Engineering Division
Date:

THB:C:\Valero\16707\16707e\3/18/08

EVALUATION REPORT
VALERO REFINING CO.
Application #20558 - Plant #12626

3400 E. Second St.
Benicia, CA 94510

I. BACKGROUND

Valero has applied for the change of condition to the Permit to Operate for the following equipment:

S-23 Gas Oil Hydrocracking Process Furnace F-401, 200 MMBtu/hr, abated by A-25, Thermal De-NOx System

Valero requested to change Condition # 14318, Part 2 to include the allowances for NOx emission limit during non-routine operating conditions such as start-up or shutdown or curtailed (turndown) operation lasting 5 days or less. Condition # 14318, Part 2 currently limits the NOx emissions to 40 ppmv averaged over 8 hours period at 3% O2, but did not provide any start-up, shutdown periods and curtailed operation period such as low-fire during heater idling. This request of the condition change is as a result of a deviation or violation occurred on January 25, 2009, during an emergency shutdown of the Hydrocracker Unit when source S-23 exceeded 40 ppmv NOx at low fire (less than 20% of the unit's rated capacity) for twenty hours.

Valero shuts down (turnaround) the Hydrocracker for one of two reasons. First is to change the catalyst, which lasts between 2-3 years. Second is to perform mechanical repairs, which cannot be done on the run. Valero preferred to use turndown operations (curtailed or low-fire) for mechanical repairs, which can be done quickly without a complete unit shut down and depressurization of the entire Hydrocracker Unit to minimize emissions and loss of production. The duration of turndown is minimized by circulating recycle hydrogen through the furnace at minimum rates to keep the unit "hot" and prepared for startup.

The District will grant this request because source S-23 is subject to Regulation 9-10 where start-up and shutdown periods are allowed up to twelve hours and nine hours, respectively, per Regulation 9-10-218. In addition, the curtailed operations such as low-fire during heater turndown has been used in Valero NOx Box's Condition # 21233, Part 5b, which allows the affected furnaces to operate at a lower firing capacity (less than 20% of the unit's rated capacity) during non-routine operations without having to shut down and cold start the furnace.

The proposed condition change will not result in an increase above the current emission limit. During start-up and other periods of curtailed operations, S-23 operates at low-firing conditions. In a start-up or other periods of curtailed operations, the Low NOx Burners do not work as efficiently as they do near the design firing rates. The concentration of NOx increases; however, the firing rate is low; thus, the total mass emission remains low, below the permitted level of emissions. The emissions reductions from this application are calculated in Section II below.

II. EMISSION REDUCTION CALCULATIONS

Emission Calculation During Normal Operation
Basis from Condition # 14318:

- S-23 is limited to 40 pppmv at 3% O2 average over 8 hours period
- 185 MMBtu/hr averaged over 24 hours
- Fuel Factor at 0% O2 = 8,380 scf/MMBtu
- NOx at 0% = 40 ppm x (20.95)/(20.95-3) = 46.7 ppm

- 385.3 lbmole/dscf

Normal Hourly NOx = [46.7 ppm x 185 MMBtu/hr x 8,380 scf/MMBtu x 46 lb/lb-mole] / [385.3 lb-mole/dscf x 1,000,000] = 8.64 lb NOx/hr

Emission Calculation During Start-up, Shutdown and Turndown
Basis:
- 20% of unit's permitted capacity = 0.2 x 185 MMBtu/hr = 37 MMBtu/hr
- Maximum NOx concentration during turndown period = 68 ppm at 3% O2, 8 hours average – provided by Valero CEM.
- Fuel Factor at 0% O2 = 8,380 scf/MMBtu
- NOx at 0% = 68 ppm x (20.95)/(20.95-3) = 79.4 ppm
- 385.3 lbmole/dscf

Turndown Hourly NOx = [79.4 ppm x 37 MMBtu/hr x 8,380 scf/MMBtu x 46 lb/lb-mole] / [385.3 lb-mole/dscf x 1,000,000] = 2.94 lb NOx/hr

Emission Reductions:

Scenario	Normal = 8.64 lbs/hr	Turndown = 2.94 lbs/hr	Emission Reduction
	lbs	lbs	lbs
9 hours shutdown	77.8	26.5	(51.3)
12 hours start-up	103.7	35.3	(68.4)
5 days (120 hours) low-fire	1,036.8	352.8	(684.0)
Total	1,218.3	414.6	(803.7)

III. PLA/NT CUMULATIVE INCREASE SINCE 4/5/1991

There is no NOx emission increase from this application.

IV. TOXIC SCREENING A/NALYSIS

This application would not emit toxic compounds in amounts different that previously emitted. Therefore, a toxic risk screen is not required per Regulation 2-5.

V. BEST AVAILABLE CONTROL TECHNOLOGY

BACT is triggered for new or modified sources that emit criteria pollutants in excess of 10 lbs/day. However, Regulation 2-1-234 defines a modified source as one that results in an increase in daily or annual emissions of a regulated air pollutant. For this application, there is a reduction in NOx emissions. Therefore, BACT does not apply.

VI. OFFSETS

This application does not result in emission increases. Therefore, offsets are not needed per Regulation 2-2-302.

VII. STATEMENT OF COMPLIA/NCE

The condition change to the NOx emissions will not change the compliance for the Furnace, S-23. Source S-23 will continue to comply with Regulation 2-9-303 (Alternative Compliance Plan using IERC's), Regulations 6 and Regulation 9, Rule 10 as before the change.

This project is considered to be ministerial under the District's CEQA Regulation 2-1-311 and therefore is not subject to CEQA review. The engineering review for this project requires only the application of standard permit conditions and standard emission factors in accordance with Permit Handbook Chapter 2.1.

The closest school is over 3000 feet from the facility, so the Public Notice requirements of Regulation 2-1-214 do not apply.

Toxics, CEQA, NESHAPS, BACT, Offsets and NSPS do not apply.

VIII. CONDITIONS

Condition# 14318
For Source S-23 Process Oil Furnace
A/N 13201, Correct NSPS J H2S Concentration, (Oct 2005)
A/N 20558, Add Start-up, Shutdown and Curtailed Operation Allowances (June 2009)

1. The Owner/Operator shall limit the emissions of NMHC from S-23 (Furnace F-401) to no more than 10 lb/day. [Basis: BACT]

2.The Owner/Operator shall limit the emission of NOx to no more than 40 ppm averaged over any 8 hour period @ 3% oxygen and dry. [Basis: Cumulative Increase]

2A. Part 2 does not apply to low firing rate conditions (i.e., firing rate less than or equal to 20% of the unit's permitted capacity (185 MMBTU/hr)), during startup periods not to exceed twelve (12) hours, during shutdown periods not to exceed nine (9) hours, or during periods of curtailed operation (i.e., heater idling, refractory dry out, etc.) not to exceed 5 days. [Basis: Cumulative Increase, Offsets, Regulation 9-10-218]

2B. During periods of startup or shutdown or curtailed operations of Part 2A, the Owner/Operator shall maintain the emissions of nitrogen oxides from S-23 Furnaces at or below 68 ppmv, dry, corrected to 3% oxygen, averaged over any 8 consecutive hours, or 8.6 lbs/hr, averaged over any 8 consecutive hours. The Owner/Operator shall record the NOx concentrations from the CEM and the refinery fuel gas throughput at S-23 to demonstration compliance with the limits above during periods of startup or shutdown or curtailed operations [Basis: Cumulative Increase, Offsets, Regulation 9-10-218, Regulation 9-10-502]

3. The Owner/Operator shall continuously monitor the NOx and oxygen in accordance with the Manual of Procedures. [Basis: Cumulative Increase]

4. Owner/Operator shall limit the firing of S-23 furnace to at or below 200 x million BTU/Hr (maximum firing rate) heat input for any one hour period and 185 x million BTU/Hr average for a 24 hour period based on the gross heating value of the fuel gas. This 24 hour period shall be midnight to midnight. [Basis: Cumulative Increase]

5. As per Regulation 10-14, the Owner/Operator shall continuously monitor the hydrogen sulfide and shall limit the hydrogen sulfide to no more than the H2S concentration limitation specified in NSPS 40 CFR 60 Subpart J. [Basis: Cumulative Increase, BAAQMD 10-14]

6. Deleted [Basis: Access and availability to records is covered by Title V Permit Standard Condition E.1 and BAAQMD 1-441]

IX. RECOMMENDATION

It is recommended that a Change of Conditions to the Permit to Operate be granted to Valero for:

S-23 Gas Oil Hydrocracking Process Furnace F-401, 200 MMBtu/hr, abated by A-25, Thermal De-NOx System

Thu H. Bui

Senior Air Quality Engineer
Engineering Division
Date:

THB:C:\Valero\20558\20558erev.1

EVALUATION REPORT
Valero Refining Company
Application #20690- Plant #12626

3400 E. Second St.,
Benicia, CA 94510

I. BACKGROUND

Valero has applied for an Authority to Construct/Permit to Operate for the following equipment:

A-68 Thermal Oxidizer, Propane fired, Envent Corporation, Model 50-5, 250 SCFM, 1.00 MMBtu/hr capacity, to abate existing sources S-131, S-150, S-194, S-195, S-197, S-198, S-199 and S-200 at Wastewater Treatment Plant

Sources S-131, S-150, S-194, S-195, S-197, S-198, S-199 and S-200 are currently abated by A-37 (two 700 pounds (minimum) Carbon Canisters in series) and A-57, Thermal Oxidizer. These are sludge tanks, induced static floatations, oil water separators, and slope oil tanks that are used to treat the wastewater at the refinery. The new thermal oxidizer will be added to the process. This proposed thermal oxidizer is to supplement the activated carbon systems. It will work in parallel with the existing carbon canisters to abate Non-Methane Hydrocarbon (NMHC) and help to comply with the Permit Condition 11880, Part 2, which imposes a limit of 15 lbs/day averaged over one month. The gas stream from the wastewater treatment tanks will be diverted between the existing Carbon Canister System (A-37) and the two Thermal Oxidizers (A-57 and A-68). It will also handle the occasional overflows incase of higher flow rates.

The existing thermal oxidizer (A-57) uses electricity and is not reliable when the vapor flow is inter-mitten. As a result, the system gets hot when it is required to maintain 1400F operation at all times. At this time, the existing thermal oxidizer is not in use until Valero finds better way to maintain and operate the abatement.

On May 15, 2009, the Internal Floating Roof Slop Oil Tank (S-101) seal failed, so Valero diverted the wastewaters to the Primary Sludge Thickener (S-150) through the Corregated Plate Separators (S-194, S-195) and Induced Static Flotators (S-197, S-198) but bypassed the Surge (S-205, S-206) and Diversion tanks (S-193, S-196). As a result, the Carbon Canister System (A-37) was overloaded and the pressure/vacuum valve from the Primary Sludge Thickener (S-150) vented the hydrocarbon into the atmosphere and caused medical emergencies for two employees from Union Pacific Railroad who worked next to Valero refinery. Valero changed out the carbon vessels at A-37 every 12 hours and then every 8 hours as a precautionary measure to abate the hydrocarbon that are still working their way out of the system. The carbon change out within 24 hours was necessary because under the EPA Consent Decree, Paragraph 141, Valero must change out if the benzene concentration is more than or equal 5 ppm between the primary and secondary carbon canister. During the month of May, 2009, the carbon canisters were changed out 63 times for benzene.

To resolve the problem quickly and to prevent future re-occurrence of released hydrocarbon at the Wastewater Treatment Plant, Valero requested to install a new thermal oxidizer in this application. The new thermal oxidizer (A-68) will expect to have better or the same performance as the existing thermal oxidizer (A-57). Valero will use propane to run this thermal oxidizer. This project qualified for the accelerated permitting program; therefore, the temporary permit to operate was granted to Valero on 06/10/09.

The vendor's NOx and CO specifications for A-68 are at AP-42 emission factor levels (0.14 lb NOx/MMBtu and 0.08 lb CO/MMBtu), which are lower than District's RACT emission level of 50 ppmv NOx @ 15% O2 (0.2 lb/MMBtu) and 350 ppmv CO @ 15% O2 (0.8 lb/MMBtu) for combustion emissions of a secondary pollutant. Therefore, according to the Memoradum on NOx and CO RACT Levels for Thermal Oxdizer dated April 13, 1999, A-68 is not required to conduct an initial compliance source test of NOx and CO emissions.

Condition # 11879 and # 11880 were modified to reflect new changes as neccessary. Condition # 11879, part 3 and 4 were corrected for RACT standards of NOx and CO for secondary emissions. The VOC destruction efficiency in Part 5 was revised to include the inlet VOC concentration for low flow operation to be consistent with the District's current guideline in the permit handbook chapter. The basis of Condition # 11879, Part 10 and Condition # 11880, Part 2 were changed to Regulation 2-1-403 because the limit of 15 lb/day average over a month does not come from Regulation 8-2.

In November 2005, Valero entered into a Clean Air Act Settlement with the U.S. Environmental Protection Agency and several state air quality agencies. This settlement is more commonly known as the "Consent Decree". The Consent Decree requires that the breakthrough between the primary and secondary carbon canister systems from A-36 and A-37 be changed when the reading is greater than 100 ppm VOCs or 5 ppm benzene for source that is subject to the 6QB or 2Mg compliance option control requirements of the Benzene Waste Operations NESHAP (40 CFR Part 61, Subpart FF). A-36 and A-37 are subject to the VOC and benzene standards per the Consent Decree, Paragraphs 141 through 145 as shown in the excerpts from the Consent Decree shown below.

X. **Benzene Waste NESHAP Program Enhancements**

141. From the Date of Entry and through termination of the Consent Decree, "breakthrough" between the primary and secondary canister is defined as any reading equal to or greater than 100 ppm VOCs or 5 ppm benzene. In the event that Valero or Tesoro elects to monitor for both VOCs and benzene pursuant to this provision, then "breakthrough" between the primary and secondary canister shall be defined only as a reading greater than 5 ppm benzene, provided that Valero or Tesoro, as applicable, satisfies the following conditions:

(a.) Valero or Tesoro, as applicable, shall collect and analyze the sample for benzene as soon as practical, and in no event later than 24 hours after obtaining the relevant VOC reading; and
(b.) Valero or Tesoro, as applicable, shall conduct monitoring for benzene breakthrough between the primary and secondary carbon canisters for the subject dual carbon canister system until such time as it replaces the relevant primary carbon canister with the secondary carbon canister pursuant to Paragraph 143 according to the following schedule: (i) where the design carbon replacement interval for the unit is less than or equal to 30 days, Valero or Tesoro, as applicable, shall monitor every operating weekday; (ii) where the design carbon replacement interval for the unit is 31 to 60 days, Valero or Tesoro, as appropriate shall monitor at least twice a week; (iii) where the design carbon replacement interval for the unit is greater than sixty (60) days, Valero or Tesoro, as applicable, shall monitor at least weekly.

142. By no later than seven (7) days after the Date of Entry of the Consent Decree (for existing dual canister systems), and by no later than seven (7) days after the installation of each new dual canister system, Valero and Tesoro shall start to monitor for breakthrough between the primary and secondary carbon canisters at times when the source is connected to the carbon canister, and during periods of normal operation in accordance with the frequency specified in 40 C.F.R. § 61.354(d) (but in no event less frequently than once per month), or alternatively at least once on each operating weekday.

143. Valero and Tesoro shall replace the original secondary carbon canister with a fresh carbon canister immediately when breakthrough between the primary and secondary canister is detected. The original secondary carbon canister will become the new primary carbon canister and the fresh carbon canister will become the secondary canister.

(a.) For carbon canisters not qualifying as engineered carbon canister systems pursuant to this paragraph, “immediately” shall mean within twenty-four (24) hours; provided, however, that if breakthrough is determined on a Saturday, Sunday, or holiday, then Valero or Tesoro, as applicable, shall replace the original primary carbon canister by the end of the next regular work day if Valero or Tesoro, as applicable, begins monitoring the secondary canister at least once per operating day until the primary canister is replaced.
(b.) For engineered carbon canister systems, “immediately” shall mean not more than fourteen (14) days if Valero or Tesoro, as applicable, monitors the secondary canister at least once per operating day until the carbon in the primary canister is replaced and such monitoring of the secondary canister does not reveal “breakthrough”, as defined in Paragraph 141. If breakthrough from the secondary canister is revealed, Valero or Tesoro, as applicable, shall replace the secondary carbon canister within twenty-four hours of securing such monitoring results. For purposes of this Paragraph 143, “engineered carbon canister systems” shall mean carbon systems with fixed vessels for which each vessel has a capacity of carbon in excess of 5000 pounds.
(c.) In lieu of replacing a primary or secondary carbon canister pursuant to the terms of this paragraph, Valero or Tesoro, as applicable, may elect to discontinue flow of benzene containing streams to the relevant carbon canister system until such system is replaced.

144. Valero shall maintain or otherwise provide for a reasonable supply of fresh carbon and carbon canisters at each of Valero’s Refineries and Tesoro shall maintain or otherwise provide for a reasonable supply of fresh carbon and carbon canisters at the Golden Eagle Refinery.

145. Records to demonstrate compliance with the requirements of this Section X.E shall be maintained in accordance with 40 C.F.R. § 61.356(j)(10).

At this time, the District will add the Consent Decree requirement to the existing Condition # 11879

II. EMISSION CALCULATIONS

The emission factors are from AP-42 (7/08) for LPG Combustion of Commercial Boiler with heat capacity between 0.3 – 10 MMBtu/hr.

Emission increases from combustion of propane gas at thermal oxidizer
Basis:

* Total fuel throughput (1.0 MMBtu/hr capacity) = 95,738 gals/yr of propane.
* Operation hours = 24 hour/day, 365 days/yr
* Heat capacity = 91.5 MMBtu/10^3 gal of propane
* Other emission factors taken from AP-42, Table 1.5-1 (7/08) for small boiler commercial boiler between 0.3 and 100 MMBtu/hr
* SO2 = 0.10 S = 0.1 X 15 gr/100 ft^3 = 0.015 lb of SO2/1000 gal propane
  where S = sulfur content in gr/100 ft^3 gas vapor = 15 gr/100 ft^3 for commercial propane

Combustion Emission Calculations:
NOx = 95,738 gals/yr X 13 lb/1000 gal = 1,240 lb/yr, or 0.620 ton/yr
CO = 95,738 gals/yr X 7.5 lb/1000 gal = 715 lb/yr, or 0.358 ton/yr
SO2 = 95,738 gals/yr X 0.015 lb/1000 gal = 1.43 lb/yr, or 0.00072 ton/yr
PM10 = 95,738 gals/yr X 0.7 lb/1000 gal = 66.8 lb/yr, or 0.033 ton/yr
POC = 95,738 gals/yr X 1.0 lb/1000 gal = 95.4 lb/yr, or 0.048 ton/yr

III. PLA/NT CUMULATIVE INCREASE

Current	New Ton/yr	New Total Ton/yr	Lbs/yr	Tons/yr
POC =	0.00	0.048	95.4	0.048
NO_X =	0.00	0.620	1,240	0.620
SO_2 =	0.00	0.00072	1.43	0.00072
CO =	0.00	0.358	715	0.358
PM_{10} =	0.00	0.033	66.8	0.033

IV. TOXIC SCREENING A/NALYSIS

A "Risk Screening Analysis Questionnaire" form was not required with this application since none of the toxic trigger level was exceeded.

V. BEST AVAILABLE CONTROL TECHNOLOGY

Thermal Oxidizer, A-68, does not trigger BACT for any criteria pollutant. BACT is not required for a secondary pollutant as stated in Regulation 2-2-112 and since each criteria pollutant's emission from the source is less than 10 lb/highest day; however it must meet RACT. The District determinations of RACT for NOx emissions from A-68 is 50 ppmv @ 15%O2, and for CO emissions is 350 ppmv @ 15%O2 as stated in the interoffice memo dated April 13, 1999 for secondary pollutant emissions from thermal oxidizer (in this case combustor's combustion

emissions). Per interoffice memo, for thermal oxidizer less than 7.5 MMBtu/hr, if the vendor's NOx and CO emissions guarantee and/or specifications do not exceed the RACT control levels, then the owner/operator is required to have permit conditions that limit NOx and CO emissions, but is not required to conduct an initial compliance source test of NOx and CO emissions.

VI. OFFSETS

Offsets are required for this project because Valero is a major facility with emissions greater than 100 ton/yr for each component per Regulation 2-2-302. The POC, NOx, PM10, SO2 emissions will be required offsets. The company used the Certificate of Deposit # 833 to provide offsets with the ratio of 1:1.15 for NOx and POC per Regulation 2-2-302. Valero uses Certificate of Deposit # 974 and # 976 to provide offsets with the ratio of 1:1 for PM10 and SO2, respectively.

		Ton/yr	Ton/yr	Ton/yr	Ton/yr
		NOx	SO2	**PM10**	**POC**
A/N 20690	A-68	0.620	0.00072	0.033	0.048
Offset Ratio = 1.15:1.0		**0.713**			**0.055**
per BAAQMD 2-2-302					
Offset Ratio = 1.0:1.0			**0.00072**	**0.033**	
per BAAQMD 2-2-303					
Certificate Number		**# 833**	**# 976**	**# 974**	**# 833**
Starting balance		78.045	1.004	1.987	77.332[1]
Reduction		0.713	0.00072	0.033	0.055
Ending balance		**77.332[1]**	**1.003**	**1.954**	**77.277**

[1]Note: Valero uses POC emission credits to provide offsets for NOx emissions with 1.0 to 1.0 ratio per Regulation 2-2-302.2.

Thus, the Banking Certificate # 833 will be reissued to Valero in the amount of 77.277 tons POC/yr. The Banking Certificate # 976 will be reissued to Valero in the amount of 1.003 tons SO2/yr, and the Banking Certificate # 974 will be reissued to Valero in the amount of 1.954 tons PM10/yr

VII. STATEMENT OF COMPLIA/NCE

Sources S-131, S-150, S-194, S-195, and S-200, which are abated by A-37 and/or A-68 are subject to and expected to be in compliance with Regulation 8, Rule 8 – Wastewater Collection and Separation Systems. These sources will continue to be totally enclosed and vent to A-37 and/or A-68 control devices with 95% abatement efficiency or greater per Regulation 8-8-304. Valero submitted the source test result prepared by Best Environmental dated June 8, 2006 for an identical thermal oxidizer as A-68. The results showed total non-methane organic compound is less than 1 ppm at the outlet when the inlet is greater than 38,000 ppm, which is greater than 98.5% destruction efficiency. (See the attached report)

Sources S-197 and S-198, which abated by A-37 and/or A-68, are subject to and expected to be in compliance with Regulation 8, Rule 8 – Wastewater Collection and Separation Systems. These Induced Static Flotation Cells will continue to be enclosed and vent to A-37 and/or A-68 control devices with 70% abatement efficiency or greater per Regulation 8-8-307.2.

Source S-199, which abated by A-37 and/or A-68, is subject to and expected to be in compliance with Regulation 8, Rule 8 – Wastewater Collection and Separation Systems. The slop oil vessel will continue to be enclosed and vent to A-37 and/or A-68 control devices with 70% abatement efficiency or greater per Regulation 8-8-305.2.

This project is considered to be categorically exempt under the District's CEQA Regulation 2-1-312.2 and therefore is not subject to CEQA review. This permit application is to install air pollution control or abatement equipment.

This project is not subject to the Standard of Performance for New Stationary Sources (NSPS), 40 CFR 60, Subpart J – Standards of Performance for Petroleum Refineries (dated 6/24/08). This abatement is not required to install the H2S continuous monitoring and recording system to comply with the concentration (dry basis, zero excess air) of 230 mg/dscm (0.1 gr/dscf or 163 ppmv) of H2S in fuel gases before being burned since the definition of fuel gas has been revised to exclude vapors that are collected and combusted to comply with the Wastewater provisions. Therefore, these vapors are exempt from the sulfur dioxide (SO2) treatment standard and are not required to be monitored. The revised 40 CFR 60, Subpart J became effective on June 24, 2008.

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

A toxic risk screening analysis is not required.

BACT, PSD are not required

VIII. CONDITIONS

Condition# 11879
For Source S-131, S-150, S-194, S-195, S-197, S-198, S-199 and S-200 Wastewater Treatment Equipment abated by A37 Carbon Canisters and/or A-57 and/or A-68 Thermal Oxidizers
Application 16938/16939 (Title V) Consolidated WWTP Conditions
Application 15934/19793 (Title V) Diversion Area Thermal Oxidizer A-65
Application 20690/TBD Added A-68 Thermal Oxidizer WWTP

1. The Owner/Operator shall abate sources S-131, S-150, S-194, S-195, S-197, S-198, S-199 and S-200 by A-37 Carbon Canisters (two 700 lb (minimum) canisters in series) and/or A-57 and/or A-68 Thermal oxidizers at all times when the sources are in service, except during inspection, maintenance and wastewater sampling. [Basis: Cumulative Increase]

2. The Owner/Operator shall limit the total combined effluent from S-194, S-195, S-197 and S-198 to not exceed 3000 gallons per minute. The owner/operator shall maintain records for each day of total combined flow rate of influent wastewater and made available for inspection by the District for at least five years following the date the data is recorded. [Basis: Cumulative Increase, recordkeeping]

3. The Owner/Operator shall limit the emissions of nitrogen oxides (NOx) from the A-57 or A-68 Thermal Oxidizer to no more than 50 ppm each, by volume, dry, corrected to 15% oxygen, as determined by the applicable BAAQMD Source Test Method. [Basis: BAAQMD 2-2-112]

4. The Owner/Operator shall limit the emissions of carbon monoxide (CO) from the A-57 or A-68 Thermal Oxidizer to no more than 350 ppm each, by volume, dry, corrected to 15%

oxygen, as determined by the applicable BAAQMD Source Test Method. [Basis: BAAQMD 2-2-112]

5. The owner/operator shall operate A-57 and A-68 to meet the following VOC destruction efficiency requirements, depending on the applicable inlet VOC concentration::
    a. VOC destruction efficiency > 98.5% if A-57 or A-68 inlet VOC concentration > 2,000 ppmv;
    b. VOC destruction efficiency > 97% if A-57 or A-68 inlet VOC concentration > 200 to < 2,000 ppmv;
    c. VOC destruction efficiency > 90% if A-57 or A-68 inlet VOC concentration < 200 ppmv.

    (basis: Cumulative Increase; BACT)

6. The Owner/Operator shall operate A-57 and A-68 Thermal Oxidizer at a minimum temperature of 1400 degrees Fahrenheit. The District may adjust this minimum temperature if source test data demonstrate that an alternate temperature is necessary for maintaining compliance with Parts 3, 4, 5, and 10. [Basis: Cumulative Increase]

7. To determine compliance with the temperature requirement in Part 6, the Owner/Operator shall equip the A-57 and A-68 Thermal Oxidizers with a temperature measuring device capable of continuously measuring and recording the oxidation temperature in A-57 and A-68. The Owner/Operator shall install and maintain the temperature measuring device in accordance with manufacturer's recommendations. [Basis: Regulation 2-1-403]

8. The Owner/Operator shall equip the A-37 Carbon Canisters with District approved analyzers that continuously indicate and record the flow rate and total hydrocarbon VOC concentration in the outlet gas stream of the second canister. [Basis: Cumulative Increase]

9. The Owner/Operator shall install a flow indicator or equivalent device on the vent streams from S-131, S-150, S-194, S-195, S-197, S-198, S-199 and S-200 to the A-37 Carbon Canisters and/or the A-57 and/or A-68 Thermal Oxidizers to ensure that the vapors from the wastewater sources are being routed to the control equipment. [Basis: Cumulative Increase]

10. The Owner/Operator shall limit the total combined non-methane hydrocarbon (NMHC) emissions at the outlets of the second carbon canisters of A-36 and A-37 and from the Thermal Oxidizers A-57, A-65 and A-68 to no more than 15 pounds per day, as averaged over one month. [Basis: Regulation 2-1-403]
11. To demonstrate compliance with Part 10 for A-37, the Owner/Operator shall determine the NMHC from the carbon canisters using the flow rates and total hydrocarbon analyzer readings at the outlets of the second carbon canisters of in accordance with ST-7 of the District's Manual of Procedures Volume IV. The Owner/Operator shall use District approved monitors. The Owner/Operator shall calculate the NMHC concentration by subtracting the average known methane content concentration of 2500 parts per million (PPM) from the total hydrocarbon analyzer reading measured at the outlets of the second carbon canisters of A-37. Alternatively, the methane contents concentration can also be obtained by actual gas samples. [Basis: Cumulative Increase]

12. To demonstrate compliance with Part 10 for A-57 and A-68, the Owner/Operator shall determine the NMHC emissions from the Thermal Oxidizers based upon the results of the District approved initial source test(s). [Basis: Cumulative Increase]

13. To demonstrate compliance with Part 10, the Owner/Operator shall maintain the following records in a District approved log. These records shall be kept on site and made available for District inspection for a period of at least 60 months from the date on which a record is made. [Basis: Cumulative Increase]
    a. Daily NMHC emission rate in pounds per day.
    b. Daily NMHC emission rate, as averaged over one month, in pounds per day.
    c. Carbon canister daily flow rate and outlet NMHC concentrations.
    d. Carbon canister changeout dates.
    e. Total volume of gas recorded between carbon canister changeouts.

14. The Owner/Operator shall not fire more than 95,738 gallons of propane at the Thermal Oxidizer A-68 during any consecutive 12 month periods. [Basis: cumulative increase]

15. The temperature limit in Part 6 shall not apply during an "Allowable Temperature Excursion", provided that the temperature controller set point complies with the temperature limit. An Allowable Temperature Excursion is one of the following:
    a. A temperature excursion not exceeding 20 degrees F (below the setpoint); or
    b. A temperature excursion for a period or periods which when combined are less than or equal to 15 minutes in any hour; or
    c. A temperature excursion for a period or periods which when combined are more than 15 minutes in any hour, provided that all three of the following criteria are met.
        i. the excursion does not exceed 50 degrees F (below the setpoint);
        ii. the duration of the excursion does not exceed 24 hours; and
        iii. the total number of such excursions does not exceed 12 per calendar year.

    Two or more excursions greater than 15 minutes in duration occurring during the same 24-hour period shall be counted as one excursion toward the 12-excursion limit. (basis: Regulation 2-1-403)

16. For each Allowable Temperature Excursion that exceeds 20 degrees F (below the setpoint) and 15 minutes in duration, the Permit Holder shall keep sufficient records to demonstrate that they meet the qualifying criteria described above. Records shall be retained for a minimum of five years from the date of entry, and shall be made available to the District upon request. Records shall include at least the following information:
    a. Temperature controller setpoint;
    b. Starting date and time, and duration of each Allowable Temperature Excursion;
    c. Measured temperature during each Allowable Temperature Excursion;
    d. Number of Allowable Temperature Excursions per month, and total number for the current calendar year; and
    e. All strip charts or other temperature records.

    (basis: Regulation 2-1-403)

17. The owner/operator shall maintain the following records for each month of operation of the Thermal Oxidizers A-57 and A-68: [Basis: Recordkeeping]
    a. The hours and times of operation and which sources A-68 is controlling
    b. Temperature of A-57 and A-68
    c. The fuel usage of A-68

All measurements, records and data required to be maintained by the operator shall be retained and made available for inspection by the District for at least five years following the date the data is recorded.

18. The owner/operator of A-37 Carbon Canisters shall replace the primary carbon canister within 24 hours when the breakthrough reading between the primary and secondary canister is equal to or greater than 100 ppm VOCs or 5 ppm benzene. The owner/operator shall maintain records for breakthrough reading between the primary and secondary canister in ppm of VOC or ppm of benzene concentration and made available for inspection by the District for at least five years following the date the data is recorded. (Basis: Consent Decree X.E. Paragraph 141-145)

Condition # 11880
For Sources S-193, S-196, S-205 and S-206 Wastewater Diversion and Surge Tanks
Abated by A-36 Carbon Canisters and A-65 Thermal Oxidizer
Updated by Application 15934/19793 (Title V) Diversion Area Thermal Oxidizer A-65
Updated by Application 20690/TBD Added A-68 Thermal Oxidizer WWTP

1. The Owner/Operator shall abate S-193, S-196, S-205 and S-206 using two 1200 lb (minimum) carbon canisters in series (A-36) and/or A-65 thermal oxidizer at all times. [Basis: Cumulative Increase]

2. The Owner/Operator shall limit the combined non-methane hydrocarbons (NMHC) emissions at the outlets of the second carbon canisters of A-36 and A-37, and from the Thermal Oxidizers A-57,A-65 and A-68 to no more than 15 pounds per day, as averaged over one month. [Basis: Regulation 2-1-403]

3. To demonstrate compliance with Part 2 for A-36, the Owner/Operator shall determine the NMHC flow rates and NMHC concentrations at the outlets of the second carbon canisters of A-36 in accordance with ST-7 of the District's Manual of Procedures Volume IV. The Owner/Operator shall use District approved monitors. NMHC concentration shall be calculated by subtracting the average known methane content of 2500 parts per million (PPM) from the total hydrocarbon analyzer reading measured at the outlets of the second carbon canisters of A-36. Alternatively, the methane contents can also be obtained by actual gas samples. [Basis: Cumulative Increase]

   To demonstrate compliance with Part 2 for A-65, the Owner/Operator shall determine the NMHC emissions from the Thermal Oxidizer based upon the results of the District-approved initial source test(s). [Basis: Cumulative Increase]

4. To demonstrate compliance with Part 2, the Owner/Operator shall maintain the following records in a District approved log. These records shall be kept on site and made available for District inspection for a period of at least 60 months from the date on which a record is made. [Basis: Cumulative Increase]
   a. Daily NMHC emission rate in pounds per day.
   b. Daily NMHC emission rate, as averaged over one month, in pounds per day.
   c. Carbon canister daily flow rate and outlet NMHC concentrations.
   d. Carbon canister changeout dates
   e. Total volume of gas recorded between carbon canister changeouts.

5. Deleted. [Basis: The inspection and maintenance program for fugitive components is covered under Regulation 8, Rule 18.]

6. Deleted. [Basis: The inspection and maintenance program for fugitive components is covered under Regulation 8, Rule 18.]

7. The Owner/Operator shall equip the A-36 Carbon Canisters with District approved analyzers that continuously indicates and record the flow rate and total hydrocarbon VOC concentration in the outlet gas stream of the second canister. [Basis: Cumulative Increase]

8. The Owner/Operator shall not fire more than 284,950 gallons of propane at the Thermal Oxidizer A-65 during any consecutive 12 month periods. [Basis: cumulative increase]

9. The Owner/Operator shall not emit more than 50 ppmvd NOx at 15% O2 from Thermal Oxidizer A-65. [Basis: RACT, Source Test Method 13A]

10. The Owner/Operator shall not emit more than 350 ppmvd CO at 15% O2 from Thermal Oxidizer A-65. [Basis: RACT, Source Test Method 6]

11. The Owner/Operator shall operate A-65 at a minimum temperature of 1400 degrees F. The District may adjust this minimum temperature, if source test data demonstrates that an alternate temperature is necessary for or capable of maintaining compliance with Parts 2, 9 and 10 above. [basis: Regulation 2-1-403]

12. To determine compliance with the temperature requirement in Part 11, the Owner/Operator shall equip A-65 with a temperature measuring device capable of continuously measuring and recording the temperature in A-65. The Owner/Operator shall install and maintain the temperature measuring device in accordance with manufacturer's recommendations. [basis: Regulation 2-1-403]

13. The temperature limit in Part 11 shall not apply during an "Allowable Temperature Excursion", provided that the temperature controller set point complies with the temperature limit. An Allowable Temperature Excursion is one of the following:
    a. A temperature excursion not exceeding 20 degrees F (below the setpoint); or
    b. A temperature excursion for a period or periods which when combined are less than or equal to 15 minutes in any hour; or
    c. A temperature excursion for a period or periods which when combined are more than 15 minutes in any hour, provided that all three of the following criteria are met.
        i. the excursion does not exceed 50 degrees F (below the setpoint);
        ii. the duration of the excursion does not exceed 24 hours; and
        iii. the total number of such excursions does not exceed 12 per calendar year.

    Two or more excursions greater than 15 minutes in duration occurring during the same 24-hour period shall be counted as one excursion toward the 12-excursion limit. (basis: Regulation 2-1-403)

14. For each Allowable Temperature Excursion that exceeds 20 degrees F (below the setpoint) and 15 minutes in duration, the Permit Holder shall keep sufficient records to demonstrate that they meet the qualifying criteria described above. Records shall be retained for a minimum of five years from the date of entry, and shall be made available to the District upon request. Records shall include at least the following information:
    a. Temperature controller setpoint;
    b. Starting date and time, and duration of each Allowable Temperature Excursion;
    c. Measured temperature during each Allowable Temperature Excursion;
    d. Number of Allowable Temperature Excursions per month, and total number for the current calendar year; and
    e. All strip charts or other temperature records.

    (basis: Regulation 2-1-403)

15. The owner/operator shall maintain the following records for each month of operation of the Thermal Oxidizer A-65: [Basis: Recordkeeping]
    a. The hours and times of operation and which sources A-65 is controlling Temperature of A-65
    c. The fuel usage of A-65

    All measurements, records and data required to be maintained by the operator shall be retained and made available for inspection by the District for at least five years following the date the data is recorded.

16. The owner/operator of A-36 Carbon Canisters shall replace the primary carbon canister within 24 hours when the breakthrough reading between the primary and secondary canister is equal to or greater than 100 ppm VOC or 5 ppm benzene. The owner/operator shall maintain records for breakthrough reading between the primary and secondary canister in ppm of VOC or ppm of benzene concentration and made available for inspection by the District for at least five years following the date the data is recorded. (Basis: Consent Decree X.E. Paragraph 141-145)

17. The owner/operator shall operate A-65 to meet the following VOC destruction efficiency requirements, depending on the applicable inlet VOC concentration:
    a. VOC destruction efficiency > 98.5% if A-65 inlet VOC concentration > 2,000 ppmv;
    b. VOC destruction efficiency > 97% if A-65 inlet VOC concentration > 200 to < 2,000 ppmv;
    c. VOC destruction efficiency > 90% if A-65 inlet VOC concentration < 200 ppmv.

    (basis: Cumulative Increase; BACT)

IX. RECOMMENDATION

Issue a conditional Permit to Operate to Valero Refining Company for the following equipment since Valero has demonstrated compliance with emission levels as required in Condition #11879, Parts 3, 4, 5 and 6:

A-68 Thermal Oxidizer, Propane fired, Envent Corporation, Model 50-5, 250 SCFM, 1.00 MMBtu/hr capacity, to abate existing sources S-131, S-150, S-194, S-195, S-197, S-198, S-199 and S-200 at Wastewater Treatment Plant

_____
Thu H. Bui
Senior Air Quality Engineer
Permit Services Division
Date: _____

THB:disk-v\Valero\20690e

ENGINEERING EVALUATION
VALERO REFINING CO.
Application #21350 - Plant #12626

3400 E. Second St.
Benicia, CA 94510

I. BACKGROUND

Valero has applied for an Authority to Construct and Permit to Operate for the following equipment:

S-252 Diesel Engine Driving Fire Pump for Raw Water Break Tank TK-2401, Caterpillar, 600 HP, 4.26 MMBtu/hr

Valero requested to replace the existing emergency Diesel Engine Driving Fire Pump (S-240) with the new Diesel Engine Driving Fire Pump (S-252). The replacement engine will be located at the same position at the existing site. The replacement is a CARB certified Tier 3, Caterpillar diesel model year 2009, engine family 9CPXL18.1ESK rated at 600 HP. This engine meets or exceeds the emission standards set forth in 40 CFR Part 60, Subpart IIII-Certification requirement for Stations Fire Pump Engines.

II. EMISSION

S-252 new engine
Basis:
600 hp output rating
50 hr/yr operation for testing and maintenance
31.13 gallons/hr max fuel use rate
NMHC + NOx, CO and PM10 emission factors provided by CARB Certification with Executive Order U-R-001-0354
POC is assumed to be 5% of NMHC + NOx
NOx is assumed to be 95% of NMHC + NOx
SO2 emissions are quantified based on the full conversion of 0.0015 wt% (~ 15 ppm) sulfur in the ULS diesel fuel. The SO2 emission factor was derived from EPA AP-42, Table 3.4-1.

Annual Emissions:
Annual emissions are calculated based on the number of hours per year of operation for testing and maintenance.

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

Table 1

	Emission Factor	Emission Factor	Annual Emissions	Annual Emissions	Max. Daily
Pollutant	(g/kw-hr)	(g/hp-hr)	(lb/yr)	(TPY)	(lb/day)
NMHC+NOx	4.0	2.98			
NOx	3.80	2.83	187.32	0.094	89.91
POC	0.20	0.15	9.86	0.0049	4.73
CO	2.4	1.79	118.31	0.059	56.79
PM10	0.15	0.112	7.39	0.0037	3.55
SO2		0.0055	0.36	0.00018	0.17

S-240 existing engine - Emission Reduction Credits from shutting down the existing S-240 Emergency Diesel Engine Driving Fire Pump

Basis:
550 hp output rating
34 hr/yr operation for testing and maintenance based on Condition # 24310
28.5 gallons/hr max fuel use rate
- SO2 emissions are quantified based on the full conversion of 0.05 wt% (~ 500 ppm) sulfur in the low sulfur diesel fuel. The SO2 emission factor was derived from EPA AP-42, Table 3.4-1.
- PM10 emissions are based on the CARB default emission factor per memorandum dated January 9, 2006
- POC, NOx, and CO emissions are based on EPA AP-42 emission factors (Table 3.4-1)

S-240 is a grandfathered source which considers as an EPA Tier 0 engine. Therefore, the emission factors of POC, NOx, CO and PM10 from S-240 are much higher than the emissions of the certified Tier 3 engine.

Table 2

	Emission Factor	Annual Emissions	Annual Emissions	Max. Daily
Pollutant	(g/hp-hr)	(lb/yr)	(TPY)	(lb/day)
NOx	10.9	449	0.225	317
POC	0.32	13.18	0.0066	9.30
CO	2.5	103	0.0515	72.7
PM10	0.74	30.48	0.0152	21.5
SO2	0.0055	0.23	0.00011	0.16

Based on the emission calculations from Table 1 and Table 2 above, the replacement of existing S-240 with the new emergency diesel Fire Pump engine S-252 will result in NOx, POC, CO and PM10 emission decreases. There is a slight increase of SO2 because the new engine has higher design capacity (600 BHP) than the old engine (550 BHP), and the new engine will be allowed to use up to 50 hrs/yr versus 34 hrs/yr of the old one.

SO2 increase = 0.36 lb/yr – 0.23 lb/yr = 0.13 lb/yr or 0.00007 tpy

III. PLA/NT CUMULATIVE INCREASE SINCE 4/5/1991

Table 3 summarizes the cumulative increase in criteria pollutant emissions that will result from the operation of S-252.

Table 3

Pollutant	(since April 5, 1991) (TPY)	this application (TPY)	(Current + Increase) (TPY)
NOx	0.000	0.000	0.000
POC	0.000	0.000	0.000
CO	0.000	0.000	0.000
PM10	0.000	0.000	0.000
SO2	0.000	0.000070	0.000070

IV. TOXIC SCREENING A/NALYSIS

This application required a Toxics Risk Screen because the diesel particulate emissions are greater than the toxic trigger level.

Toxic Pollutant Emitted	**Emission Rate (lb/yr)**	**Risk Screening Trigger (lb/yr)**
PM10 (Diesel Particulate)	7.39	0.34

S-252 meet Best Available Control Technology for toxics (TBACT) since the diesel particulate emissions are less than 0.15 g/bhp-hr. For an engine that meets the TBACT requirement, it must also pass the toxic risk screening level of less than ten in a million. Estimates of residential risk assume exposure to annual average toxic air contaminate concentrations occur 24 hours per day, 350 days per year, for a 70-year lifetime. Risk estimates for offsite workers assume exposure occurs 8 hours per day, 245 days per year, for 40 years. Risk estimates for students assume a higher breathing rate, and exposure is assumed to occur 10 hours per day, 36 weeks per year, for 9 years.

The facility permitted S-251 Emergency Diesel Fire Water pump, Application # 18292 in 2008. In accordance with Regulation 2-5-216, S-251 was evaluated with S-252. Based on 50 hours per year of operation of each of the 2 engines, the emergency engines passed the Health Risk Screening Analysis (HRA) per the attached memo from the District's Toxic Evaluation Section. The sources pose no significant toxic risk, since the increased cancer risk to the maximally exposed receptor (resident) is 0.9 in a million with all hazard indicies less than 1.0. The source is not located near students. In accordance with the District's Regulation 2, Rule 5, this risk level is considered acceptable, as it has been determined that the 2 engines meet the current TBACT standards.

V. BEST AVAILABLE CONTROL TECHNOLOGY

In accordance with Regulation 2, Rule 2, Section 301, BACT is triggered for any new or modified source with the potential to emit 10 pounds or more per highest day of POC, NPOC, NOx, CO, SO_2 or PM_{10}.

Based on the emission calculations above, the owner/operator of S-252 is subject to BACT for the following pollutants: NOx and CO. The BACT/TBACT Workbook does not address direct-drive emergency standby fire pump engines. Currently, there is no CARB BACT Clearinghouse, EPA

Clearinghouse, SCAQMD, and SJVAPCD for emergency standby fire pump engines with a rated power of 600 bhp.

This engine is complying with the CARB Stationary Diesel ATCM requirements and NSPS Subpart IIII. The CARB Stationary Diesel ATCM Section 93115.6(a)(4) requires new direct-drive emergency standby fire pump engines to meet Tier 3 off-road emission standards. Until 3 years after Tier 4 interim/final standards are applicable for off-road engines with the same maximum rated power, at that time, new direct-drive emergency standby diesel-fueled fire-pump engines (>50 bhp) are required to meet the Tier 4 emission standards. In this case, for engines between 300 and 600 bhp, Tier 4 interim/final standards for fire pumps will be applicable on January 1, 2011. NSPS Subpart IIII Table 4 contains emission standards for Stationary Fire Pump Engines and is more lenient than the CARB Stationary Diesel ATCM for pre-Tier 3 engines; however, the effective dates for Tier 3 standards are the same for NSPS and CARB. Since CARB Stationary Diesel ATCM requirements are stricter than current BACT determinations and applicable NSPS, it is proposed that BACT for direct-drive emergency standby fire pump engines be compliance with the CARB Stationary Diesel ATCM. This engine complies with the proposed BACT since it is certified to Tier 3 emission standards.

VI. OFFSETS

Offset is required for SO2 in this application because there is a slight increase of emission per Regulation 2-2-303. However, the District will defer the offsets at this time until the cumulative increase of SO2 is greater than 1.0 ton per year.

VII. NSPS

40 CFR 60, Subpart IIII, Standards of Performance for Stationary Compression Ignition Internal Combustion Engines applies to stationary fire pump engines that were manufactured as a certified National Fire Protection Association (NFPA) fire pump engine after July 1, 2006.

Table 4 to Subpart IIII of Part 60 - Certification of stationary fire pump engines is required for engines greater than 750 hp beginning in 2008, engines between 175 and 750 (inclusive) beginning in 2009, engines = 100hp and less than 175 hp beginning in 2010, and engines less than 100 hp beginning in 2011. Per 60.4202(d), owners and operators of fire pump engines with a displacement of less than 30 liters per cylinder must comply with the emission standards in Table 4 to Subpart IIII of Part 60, for all pollutants.

Owner or operator of a CI fire pump engine that is manufactured prior to the model years in Table 4 to Subpart IIII of Part 60 (explained in the paragraph above) must comply with the emission standards specified in §60.4205(c) and demonstrate compliance according to one of the methods specified in paragraphs (1) through (5) below:

(1) Purchasing an engine certified according to 40 CFR part 89 or 40 CFR part 94, as applicable, for the same model year and maximum engine power. The engine must be installed and configured according to the manufacturer's specifications.
(2) Keeping records of performance test results for each pollutant for a test conducted on a similar engine. The test must have been conducted using the same methods specified in this subpart and these methods must have been followed correctly.
(3) Keeping records of engine manufacturer data indicating compliance with the standards.
(4) Keeping records of control device vendor data indicating compliance with the standards.
(5) Conducting an initial performance test to demonstrate compliance with the emission standards according to the requirements specified in §60.4212, as applicable.

The owner or operator of a CI fire pump engine that is manufactured during or after the model year that applies to their fire pump engine power rating in Table 4 to Subpart IIII of Part 60 must comply with the emission standards specified in §60.4205(c) and must comply by purchasing an engine certified to the emission standards in §60.4205(c) for the same model year and maximum (or in the case of fire pumps, NFPA nameplate) engine power. The engine must be installed and configured according to the manufacturer's specifications.

This engine is model year 2009 and between 600 and 750 hp. It complies with Tier 3 emission standards and therefore complies with option (1) above and is compliant with NSPS requirements.

Table 4 to Subpart IIII of Part 60—Emission Standards for Stationary Fire Pump Engines

Maximum engine power	Model year(s)	NMHC + NO_X g/kW-hr (g/bhp-hr)	CO	PM
KW<8 (HP<11)	2010 and earlier	10.5 (7.8)	8.0 (6.0)	1.0 (0.75)
	2011+	7.5 (5.6)		0.40 (0.30)
8=KW<19 (11=HP<25)	2010 and earlier	9.5 (7.1)	6.6 (4.9)	0.80 (0.60)
	2011+	7.5 (5.6)		0.40 (0.30)
19=KW<37 (25=HP<50)	2010 and earlier	9.5 (7.1)	5.5 (4.1)	0.80 (0.60)
	2011+	7.5 (5.6)		0.30 (0.22)
37=KW<56 (50=HP<75)	2010 and earlier	10.5 (7.8)	5.0 (3.7)	0.80 (0.60)
	2011+[1]	4.7 (3.5)		0.40 (0.30)
56=KW<75 (75=HP<100)	2010 and earlier	10.5 (7.8)	5.0 (3.7)	0.80 (0.60)
	2011+[1]	4.7 (3.5)		0.40 (0.30)
75=KW<130 (100=HP<175)	2009 and earlier	10.5 (7.8)	5.0 (3.7)	0.80 (0.60)
	2010+[2]	4.0 (3.0)		0.30 (0.22)
130=KW<225 (175=HP<300)	2008 and earlier	10.5 (7.8)	3.5 (2.6)	0.54 (0.40)
	2009+[3]	4.0 (3.0)		0.20 (0.15)
225=KW<450 (300=HP<600)	2008 and earlier	10.5 (7.8)	3.5 (2.6)	0.54 (0.40)
	2009+[3]	4.0 (3.0)		0.20 (0.15)
450=KW=560 (600=HP=750)	2008 and earlier	10.5 (7.8)	3.5 (2.6)	0.54 (0.40)
	2009+	4.0 (3.0)		0.20 (0.15)
KW>560 (HP>750)	2007 and earlier	10.5 (7.8)	3.5 (2.6)	0.54 (0.40)
	2008+	6.4 (4.8)		0.20 (0.15)

[1] For model years 2011–2013, manufacturers, owners and operators of fire pump stationary CI ICE in this engine power category with a rated speed of greater than 2,650 revolutions per minute (rpm) may comply with the emission limitations for 2010 model year engines.
[2] For model years 2010–2012, manufacturers, owners and operators of fire pump stationary CI ICE in this engine power category with a rated speed of greater than 2,650 rpm may comply with the emission limitations for 2009 model year engines.
[3] In model years 2009–2011, manufacturers of fire pump stationary CI ICE in this engine power category with a rated speed of greater than 2,650 rpm may comply with the emission limitations for 2008 model year engines.

VIII. NESHAP

This engine is not subject to the emission or operating limitations in 40 CFR 63, Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines, because it is an emergency stationary reciprocating internal combustion engine (40 CFR 63.6600(c)).

IX. CARB STATIONARY DIESEL ENGINE ATCM

The State Office of Administrative Law approved the Airborne Toxic Control Measure (ATCM) on November 8, 2004. State law requires the local Air Districts to implement and enforce the requirements of the ATCM. Effective January 1, 2005, there is a prohibition on the operation of new diesel emergency standby engines greater than 50 bhp unless the following operating requirements and emission standards are met:

The CARB Stationary Diesel ATCM Section 93115.6(a)(4) requires new direct-drive emergency standby fire pump engines to meet Tier 2 off-road emission standards until 3 years after Tier 3 standards are applicable to off-road engines. Tier 3 standards are applicable for fire pump engines until 3 years after Tier 4 standards are applicable to off-road engines.

The emergency standby diesel engine (S-252) is in compliance with the above ATCM requirements. The diesel engine will operate for no more than 50 hours per year for maintenance and reliability testing. The engine is subject to the Tier 3 off-road CI engine standards for PM, HC, NOx, NMHC+NOx and CO. As shown in the Table 5, the engine meets these requirements.

Table 5 - ATCM Tier 3 Compliance

	CARB Certified g/bhp-hr	ATCM Tier 3 g/bhp-hr
NMHC+NOx	3.0	3.0
NOx	N/A	N/A
NMHC (POC)	N/A	N/A
CO	1.8	2.6
PM	0.112	0.15

X. STATEMENT OF COMPLIA/NCE

S-252 will be operated as an emergency standby engine and therefore is not subject to the emission rate limits in Regulation 9, Rule 8 ("NOx and CO from Stationary Internal Combustion Engines"). S-252 is exempt from the requirements of Sections 9-8-301 through 305, 501 and 503 per Reg. 9-8-110.5 (Emergency Standby Engines). S-252 is subject to and expected to comply with 9-8-330 (Emergency Standby Engines, Hours of Operation) since non-emergency hours of operation will be limited in the permit conditions to 50 hours per year. S-252 is also subject to and expected to comply with monitoring and record keeping requirements of Regulation 9-8-530 and the SO2 limitations of 9-1-301 (ground-level concentration) and 9-1-304 (0.5% by weight in fuel). Regulation 9-8-530 requirements are incorporated into the proposed permit conditions. Compliance with Regulation 9, Rule 1 is very likely since diesel fuel with a 0.0015% by weight sulfur is mandated for use in California. Like all combustion sources, S-252 is subject to Regulation 6, Rule 1 ("Particulate Matter"). Regulation 6-1-303.1 limits opacity from internal combustion engines to Ringelmann 2. This engine is not expected to produce visible emissions or fallout in violation of this regulation and will be assumed to be in compliance with Regulation 6-1.

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

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

PSD is not triggered.

XI. PERMIT CONDITIONS

COND# 24310

S-241, S-242 Diesel Firewater Pump Engines

1. Operating for reliability-related activities is limited to no more than 34 hours per year which is the number of hours necessary to comply with the testing requirements of the National Fire Protection Association (NFPA) 25. This emergency fire pump is subject to the current National Fire Protection Association (NFPA) 25 - "Standard for the Inspection, Testing and Maintenance of Water-Based Fire Protection Systems."
   [Basis: "Stationary Diesel Engine ATCM", CA Code of Regulations, Title 17, Section 93115.3(n)]

2. The owner or operator shall operate each emergency standby engine only for the following purposes: to mitigate emergency conditions, for emission testing to demonstrate compliance with a District, state or Federal emission limit, or for reliability-related activities (maintenance and other testing, but excluding emission testing). Operating while mitigating emergency conditions or while emission testing to show compliance with District, state or Federal emission limits is not limited. [Basis: "Stationary Diesel Engine ATCM", CA Code of Regulations, Title 17, Section 93115.4(a)(29), BAAQMD Regulation 9-8-230]

3. The owner/operator shall operate each emergency standby engine only when a non-resettable totalizing meter (with a minimum display capability of 9,999 hours) that measures the hours of operation for the engine is installed, operated and properly maintained.
   [Basis: BAAQMD Regulation 9-8-530, "Stationary Diesel Engine ATCM", CA Code of Regulations, Title 17, Section 93115.10(e)(1)]

4. Records: The owner/operator shall maintain the following monthly records in a District-approved log for at least 36 months from the date of entry (60 months if the facility has been issued a Title V Major Facility Review Permit or a Synthetic Minor Operating Permit). Log entries shall be retained on-site, either at a central location or at the engine's location, and made immediately available to the District staff upon request.
   a. Hours of operation for reliability-related activities (maintenance and testing).
   b. Hours of operation for emission testing to show compliance with emission limits.
   c. Hours of operation (emergency).
   d. For each emergency, the nature of the emergency condition.
   e. Fuel usage for each engine(s).
   [Basis: BAAQMD Regulation 9-8-530, 2-6-501, and "Stationary Diesel Engine ATCM", CA Code of Regulations, Title 17, Section 93115.10(g)]

S-252 Diesel Firewater Pump Engine

5. The owner/operator shall not exceed 50 hours per year for reliability-related testing.
   [Basis: "Stationary Diesel Engine ATCM", CA Code of Regulations, Title 17, Section 93115.6(a)(3)(A)(1)(c), BAAQMD Regulation 9-8-330]

6. The owner or operator shall operate each emergency standby engine only for the following purposes: to mitigate emergency conditions, for emission testing to demonstrate compliance with a District, state or Federal emission limit, or for reliability-related activities (maintenance and other testing, but excluding emission testing). Operating while mitigating emergency conditions or while emission testing to show compliance with District, state or Federal emission limits is not limited. [Basis: "Stationary Diesel Engine ATCM", CA Code of Regulations, Title 17, Section 93115.4(a)(29), BAAQMD Regulation 9-8-230]

7. The owner/operator shall operate each emergency standby engine only when a non-resettable totalizing meter (with a minimum display capability of 9,999 hours) that measures the hours of operation for the engine is installed, operated and properly maintained.
   [Basis: BAAQMD Regulation 9-8-530, "Stationary Diesel Engine ATCM", CA Code of Regulations, Title 17, Section 93115.10(e)(1)]

8. Records: The owner/operator shall maintain the following monthly records in a District-approved log for at least 60 months from the date of entry. Log entries shall be retained on-site, either at a central location or at the engine's location, and made immediately available to the District staff upon request.
   a. Hours of operation for reliability-related activities (maintenance and testing).
   b. Hours of operation for emission testing to show compliance with emission limits.
   c. Hours of operation (emergency).
   d. For each emergency, the nature of the emergency condition.
   e. Fuel usage for each engine(s).
   [Basis: BAAQMD Regulation 9-8-530, 2-6-501, and "Stationary Diesel Engine ATCM", CA Code of Regulations, Title 17, Section 93115.10(g)]

XII. RECOMMENDATION

Issue a conditional Permit to Operate to Valero Refining Company for:

S-252 Diesel Engine Driving Fire Pump for Raw Water Break Tank TK-2401, Caterpillar, 600 HP, 4.26 MMBtu/hr

Thu H. Bui
Senior Air Quality Engineer
Engineering Division
Date:

THB:E:\Valero\21350\21350e

EVALUATION REPORT
VALERO REFINING CO.
Application #21490 - Plant #12626

3400 E. Second St.
Benicia, CA 94510

I. BACKGROUND

Valero has applied for a change of condition to the Authority to Construct/Permit to Operate for the following equipment:

S-1010 Hydrogen Plant Deaerator vents (North and South)

Valero would like the flexibility to route the vents from the Refinery boiler feed water deaerator drum to either the boilers (current limit) or to the atmosphere (proposed option) as long as the atmospheric vents comply with Regulation 8, Rule 2 – Miscellaneous Operation. The District issued Condition # 15512 that required the two hydrogen vents to two existing boilers (S-40 and/or S-41) at all times after discovered that the deaerator vents emitted 63.6 lbs/day of methanol emissions, containing 24 lbs/day of Non Methane Organic Compounds (NMOC) per District's source test reports in August 1997. The basis for Condition # 15512 was specified as Reasonably Achieved Control Technology (RACT).

In February 1999, Valero replaced the catalyst into the "Low Methanol Production" catalyst at the Hydrogen Unit, Train B. Then in February 2006, Valero also replaced the Hydrogen Unit, Train A with the "Low Methanol Production" catalyst. Hence since 2006, both Hydrogen Unit Trains A & B have been operating with the Low Methanol Production catalyst designated as LK-823 LTS catalyst.

In July 2006, Valero conducted a source test on the deaerator vents and the methanol emissions have been reduced to 12.9 lbs/day, containing 4.8 lbs/day of NMOC. See attached test results from BAAQMD in 1997 and Best Environmental in 2006. Valero met with District's management on June 26, 2008 to discuss the possibility of changing the language in Condition # 15512 to the specific RACT limit. In this case, the RACT limit is the 15 lbs/day and containing a concentration of less than or equal 300 ppmv of total carbon on a dry basis for both vents (North and South) of Regulation 8-2-301.

The deaerator vents to atmosphere will allow both boilers (S-40 and S-41) to be shut down together for inspection or repair of the common equipment such as the knock-out drum upstream of the boilers. At the same time, it could potentially reduce the fired duty to heat up the vent streams.

In August 25, 2008, based on the information provided by Valero and the reasons above, the District's staff granted Valero the above request if Valero can demonstrate compliance by testing the two deaerator vents initially and every 3 months thereafter. Valero may request for an annual source testing after the unit consistently demonstrates compliance with the requirement for four consecutive times.

In this application, Valero submitted a request to change the source test frequency of Condition #15512 from quarterly to annual source test requirement. Since all the source test results showed compliance with the 15 lb/day of total carbon as required by Regulation 8-2-301, the District

decided to grant the request to reduce the testing frequency of the two deaerator vents. The following table is the summary of test results from the past six source tests:

Test Dates	Methanol, MW =32, lb/day	Total Carbon MW = 12, lb/day	Air Flow Rate, DSCFM	Total Carbon ppmv, dry[2]
4/3/08[1]	17.41	6.53	11	13,100
9/16/08	13.91	5.21	60	1,980
11/6/08	12.94	4.85	29.4	3,662
2/3/09	15.54	5.83	123	1,027
11/19/09[1]	17.23	6.46	153	929
3/23/10	21.72	8.13	53	3,435

Regulation 8-2-301 limit = 15 lbs/day and 300 ppmvd of total carbon

1. Source test results from 4/3/08 and 11/19/09 were not accepted by the District since the Valero did not notify the Source Test Section of the tests
2. ppmvd = M (lb/day) x 386.9 (ft3/lbmole)/[MW x 60 x 24 x DSCFM]

II. EMISSION CALCULATIONS

This application will not result in an emission increase.

III. PLA/NT CUMULATIVE INCREASE SINCE 4/5/1991

There are no net changes to the plant cumulative emissions.

IV. TOXIC SCREENING A/NALYSIS

This application will not result in an increase in toxic air contaminant emissions from existing levels. Therefore, a Toxic Risk Screening Analysis is not required per Regulation 2-5.

V. BEST AVAILABLE CONTROL TECHNOLOGY

This application will not result in any emission increase from existing levels. Therefore, BACT is not triggered per Regulation 2-2-301.

VI. OFFSETS

This application does not result in emission increases. Therefore, offsets are not needed per Regulation 2-2-302.

VII. STATEMENT OF COMPLIA/NCE

The deaerator vents from the hydrogen plant S-1010 are subject to and expected to continue to comply with Regulation 8-2-301 – Miscellaneous Operations requirement, which is emitting less than 15 lbs/day and containing a concentration of less than or equal 300 ppmv of total carbon on a dry basis.

This project qualifies for a CEQA categorical exemption of Regulation 2-1-312.6 for permit applications relating exclusively to the repair, maintenance or minor modification of existing facilities, and therefore is not subject to CEQA review.

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

Toxics, BACT, offsets, and PSD are not triggered.

VIII. CONDITIONS

Permit condition # 15512, Valero Refining Company, Application # 17877, amended by Application # 17877 and Application 21490, Plant # 12626.

1. The Owner/Operator shall route the precursor organic compounds from the deaerator vents associated with the operation of S-1010 Hydrogen Plant downstream to the S-40 and/or S-41 boilers or to atmosphere. Whenever the deaerator vents are routed to atmosphere with S-1010 in operation, the Owner/Operator shall conduct an annual source test on the vents (North and South) to demonstrate compliance with Regulation 8 Rule 2 Section 301. The Owner/Operator shall obtain approval for all source test procedures from the District's Source Test Section prior to conducting any tests. The Owner/Operator shall notify the District's Source Test Section, in writing, of the source test protocols and projected test dates at least 7 days prior to testing. The Owner/Operator shall submit the source test results to the District staff no later than 60 days after the source test. [Basis: Regulation 8-2-301]
2. The Owner/Operator shall limit emissions of precursor organic compounds from the North and South vents combined to no more than 15 pounds per day and containing a concentration of less than or equal to 300 ppmv of total carbon on a dry basis. [Basis: Regulation 8-2-301, RACT]

X. RECOMMENDATION

Issue a conditional change to the Permit to Operate to Valero Refining Company for the following equipment:

S-1010 Hydrogen Plant Deaerator vents (North and South)

Thu H. Bui
Senior Air Quality Engineer
Engineering Division
Date:

THB:T:\Valero\21490\21490e\6/2/10

EVALUATION REPORT
VALERO REFINING CO.
Application #21573 - Plant #12626

3400 E. Second St.
Benicia, CA 94510

I. BACKGROUND

Valero has applied for an addition of condition to the Permit to Operate for the following equipment:

P-69 FCCU/Coker Dump Stack for the FCCU (S-5) and Coker Unit (S-6)

The CO gas from the FCCU (S-5) and Coker Unit (S-6) are normally abated by the CO Boilers (S-3 and S-4) and eventually exhausts through the Main Stack. The dump stack (P-69) at Valero's refinery is served as a by-pass stack for the CO gas vent during emergency when the CO Boilers (S-3 and S-4) are not operating properly. It serves as a safety relief device and uncontrolled. The dump stack is a cylindrical stack, which has tree compartments. One is connected to the CO-duct from the FCCU to the CO boilers (S-3 and S-4 or the future CO boilers S-1059 and S-1060). A second compartment is connected to the CO-duct from the Coker to the CO boilers. The third compartment is out of service.

In July 1993, Valero (formerly Exxon) accepted a condition to install continuous level monitors on the two water seal compartments of the FCCU/Coker dump stack, including a continuous strip chart recorder, and maintain the instrumentation in good operating condition. In December 1997, the District issued the Notice of Violations (V/N 31431) to Valero for violating Regulation 6 for exceeding a Ringelmann 1 1/2. Through office memorandum letter dated December 11, 2001, the condition should have been incorporated into Valero's permit but they were missed during the period of ownership change from Exxon to Valero until the most recent incident when the CO gas was vented to the dump stack on January 7, 2010.

Valero now requests to add the condition below to its existing operating permit condition (Cond. # 19466 and 24198) and incorporated it into the Title V Permit.

II. EMISSION CALCULATIONS

This application will not result in an emission increase.

III. PLA/NT CUMULATIVE INCREASE SINCE 4/5/1991

There are no net changes to the plant cumulative emissions.

IV. TOXIC SCREENING A/NALYSIS

This application will not result in an increase in toxic air contaminant emissions from existing levels. Therefore, a Toxic Risk Screening Analysis is not required per Regulation 2-5.

V. BEST AVAILABLE CONTROL TECHNOLOGY

This application will not result in any emission increase from existing levels. Therefore, BACT is not triggered per Regulation 2-2-301.

VI. OFFSETS

This application does not result in emission increases. Therefore, offsets are not needed per Regulation 2-2-302.

VII. STATEMENT OF COMPLIA/NCE

Sources S-5 and S-6 are subject to and expected to comply with the requirement of Regulation 6 – Particulate Matter and Visible Emissions. Visible particulate emissions are limited by section 6-1-301 which prohibits visible emissions greater than or equal to Ringelmann No. 1 for no more than 3 minutes in an hour, and 302 limits the source to less than 20% opacity. Section 305 prohibits fallout of visible particles onto neighboring properties in sufficient quantities to cause annoyance to any other person. In addition, Regulation 6-1-311 limits S-5 and S-6's PM_{10} emissions to be less than 40 lb/hr.

The emission limitations, monitoring, and sampling requirements from Regulation 9-1 apply to the FCCU (S-5) and the Coker Unit (S-6). Regulation 9, Rule 1, Section 310, Emission Limitations for Fluid Catalytic Cracking Units, Fluid Cokers, and Coke Calcining Kilns, limits SO_2 emissions sources S-5 and S-6 to 1,000 ppmvd. The Valero refinery will continue to comply with the requirements of Regulation 9, Rule 1 (Inorganic Gaseous Pollutants, Sulfur Dioxide).

Regulation 9, Rule 1, Section 301 and Regulation 9, Rule 2, Section 301 limits ground-level concentrations of H2S for the whole refinery. Section 9-2-301 states that "a person shall not emit during any 24 hour period, hydrogen sulfide in such quantities as to result in ground level concentrations in excess of 0.06 ppm averaged over three consecutive minutes or 0.03 ppm averaged over any 60 consecutive minutes. Valero refinery will continue to comply with the requirements of Regulation 9, Rule 2 (Inorganic Gaseous Pollutants, Hydrogen Sulfide).

- Sources S-5 and S-6 are subject to and expected to comply with the following Section 112 of the Clean Air Act, National Emission Standards for Hazardous Air Pollutants (NESHAP)

- 40 CFR Part 61, Subpart A – General Provisions
- 40 CFR Part 63, Subpart CC – Petroleum Refineries
- 40 CFR Part 63, Subpart A – General Provisions
- 40 CFR Part 63, Subpart UUU – Petroleum Refineries: Catalytic Cracking Units, Catalytic Reforming Units and Sulfur Recovery Units, or

This project qualifies for a CEQA categorical exemption of Regulation 2-1-312.6 for permit applications relating exclusively to the repair, maintenance or minor modification of existing facilities, and therefore is not subject to CEQA review.

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

Toxics, BACT, offsets, and PSD are not triggered.

VIII. CONDITIONS

Condition 19466
APPLICATION 13202 (Dec 2005)
APPLICATION 16056 (Oct 2007)
APPLICATION 16710, S-237, Delete Part 3 monthly visible emissions monitoring (Dec 2007)
APPLICATION 16708, S-43, S-44, S-46, Decrease Part 11 source test frequency (Mar 2008)
APPLICATION 16937 (Jan 2009), VIP Amendments. Condition superseded by BAAQMD Condition 24198 upon activation of Condition 20820, Part 21.a triggers
Application 21573, P-69 Dump Stack condition is added to the FCCU S-5 and Coker Unit S-6

1. Deleted. (Basis: Sampling is a safety problem and there is reasonable assurance that compliance with Regulation 9-1-313.2 is achieved. See detailed analysis in Statement of Basis)

2a. Deleted. (Basis: S-188 vents to the refinery fuel gas system).

2b. Deleted. (Basis: S-189 vents to the refinery fuel gas system).

2c. Deleted. (Basis: S-160 was modified in May, 2005 and now vents to Vapor Recovery System A-13/A26)

2d. The Owner/Operator shall operate S-160 Seal Oil Sparger only when abated by A-13/A-26 Vapor Recovery Compressor to be returned to the refinery fuel gas system. (Basis: Cumulative Increase)

2e. The Owner/Operator shall abate emissions from S-8 coke storage tanks by A-8 and/or A-10 baghouses at all times. (Basis: Cumulative Increase)

3. The Owner/Operator shall monitor and record on a monthly basis the visible emissions from Sources S-1, S-2, S-8, S-11, S-176, and S-233 to demonstrate compliance with Regulation 6-1-301 (Ringlemann 1 or 20% opacity). For S-176 only, this monitoring is only required when dry salt is added to the tank. For S-8, compliance with Regulation 6-1-301 shall be demonstrated at the outlet of A-8/A-10 baghouses. These records shall be kept for a period of at least 5 years from date of entry and shall be made available to District staff upon request. [Basis: Regulation BAAQMD 6-1-301/SIP 6-301]

4. The owner/operator shall notify the District in writing by fax or email no less than three calendar days in advance of any scheduled startup or shutdown of any process unit and as soon as feasible for any unscheduled startup or shutdown of a process unit, but no later than 48 hours or within the next normal business day after the unscheduled startup/shutdown. The notification shall be sent in writing by fax or email to the Director of Enforcement and Compliance. The requirement is not federally enforceable. [Regulation 2-1-403]

5a. The Owner/Operator shall abate the emissions from the S-3 and S-4, CO Boilers, by at least four of the five A-1 through A-5 Electrostatic Precipitators, except as indicated in Part 5b, and the Owner/Operator shall exhaust those emissions through the main stack (P-1). [Basis: Regulation BAAQMD 6-1-301/SIP 6-301 and Regulation BAAQMD 6-1-304/SIP 6-304].

5b. For no more than 30 days per calendar year to allow for source testing and emergency ESP repairs, the Owner/Operator shall abate the emissions from the S-3 and S-4 CO Boilers by at least three of the five A-1 through A-5 Electrostatic Precipitators at all times. If, at anytime, the abatement of S-3 and S-4 with less than four of the five Electrostatic Precipitators does not comply with all District Regulations, this 30-day allowance is rescinded and the Part will be deleted. [Basis: Regulation BAAQMD 6-1-301/SIP 6-301 and Regulation BAAQMD 6-1-304/SIP 6-304].

5c. In order to demonstrate that operation of S-3 and S-4 with abatement using 3 out of 5 Electrostatic Precipitators does not impact emissions, and to demonstrate compliance with Regulations 6-1-301, 6-1-304 and 6-1-310, the Owner/Operator shall conduct a District approved source test during the operation of 3 ESP units. All source testing shall be completed in accordance with the District's Manual of Procedures. This source test shall be completed and the source test report demonstrating compliance submitted to the District's Compliance and Enforcement Division and the District's Engineering Division. This source test report shall be approved by the District's Source Test Section prior to 3 ESP unit operation after the initial source test. [Basis: Regulations BAAQMD 6-1-301/SIP 6-301, BAAQMD 6-1-304/6-304 and BAAQMD 6-1-310/SIP 6-310]

6. The Owner/Operator shall perform an annual source test on Sources S-5 and S-6 to demonstrate compliance with Regulation 6-1-310 (outlet grain loading no greater than 0.15 grain/dscf). The Owner/Operator shall submit the test results to the District's Compliance and Enforcement Division and the District's Permit Services Division no less than 45 days after the test. These records shall be kept for a period of at least 5 years from date of entry and shall be made available to District staff upon request. [Basis: Regulation BAAQMD 6-1-310/SIP 6-310]

7. The Owner/Operator shall perform an annual source test on Sources S-8 and S-176 to demonstrate compliance with Regulation 6-1-310 (outlet grain loading no greater than 0.15 grain/dscf). The Owner/Operator shall submit the test results to the District's Compliance and Enforcement Division and the District's Permit Services Division no less than 45 days after the test. These records shall be kept for a period of at least 5 years from date of entry and shall be made available to District staff upon request. For S-176 only, this source test is only required when dry salt is added to the tank. For S-8, compliance with Regulation 6-1-310 shall be demonstrated at the outlet of A-8/A-10 baghouses. [Basis: Regulation BAAQMD 6-1-310/SIP 6-310]

8. The Owner/Operator shall perform annually a source test on S-1 and S-2 to determine compliance with Regulation 6-1-330 (Outlet grain loading not to exceed 0.08 grain/dscf of SO3 and H2SO4). The Owner/Operator shall submit the test results to the District's Compliance and Enforcement Division and the District's Permit Services Division no less than 45 days after the test. These records shall be kept for a period of at least 5 years from date of entry and shall be made available to District staff upon request. [Basis: Regulation BAAQMD 6-1-330/SIP 6-330]

9. The Owner/Operator shall perform an annual source test on Sources S-5, S-6 and S-8 to demonstrate compliance with Regulation 6-1-311 (PM mass emissions rate

not to exceed $4.10P^{0.67}$ lb/hr). The Owner/Operator shall submit the test results to the District's Compliance and Enforcement Division and the District's Permit Services Division no less than 45 days after the test. These records shall be kept for a period of at least 5 years from date of entry and shall be made available to District staff upon request. For S-8, compliance with Regulation 6-1-311 shall be demonstrated at the outlet of A-8/A-10 baghouses. [Basis: Regulation BAAQMD 6-1-311/SIP 6-311]

10. The Owner/Operator shall conduct a District-approved source test on a semi-annual basis on Sources S-7, S-20, S-21, S-22, S-23, S-24, S-25, S-26, S-30, S-31, S-32, S-33, S-34, S-40, S-41 and on an annual basis on sources S-35 and S-173 to demonstrate compliance with Regulation 9-10-305 (CO not to exceed 400 ppmv, dry, at 3% O2, operating day average). The Owner/Operator shall submit the test results to the District's Compliance and Enforcement Division and the District's Permit Services Division no less than 45 days after the test. These records shall be kept for a period of at least 5 years from date of entry and shall be made available to District staff upon request.

    The Owner/Operator shall ensure that S-220 does not exceed 400 ppmv of CO, dry, at 3% O2, operating day average, measured by a properly installed CEM for CO and O2. [Basis: Regulation 9-10-305]

11. The Owner/Operator shall conduct an annual District-approved source test on Sources S-43, S-44 and S-46 to demonstrate compliance with Regulation 9-9-301.1 (NOx not to exceed 55 ppmv, dry, at 15% O2, fired on refinery fuel gas). The Owner/Operator shall submit the test results to the District's Compliance and Enforcement Division and the District's Permit Services Division no less than 45 days after the test. These records shall be kept for a period of at least 5 years from date of entry and shall be made available to District staff upon request. [Basis: Regulation 9-9-301.1]

12. The Owner/Operator shall abate the VOC emissions from the S-159 Lube Oil Reservoir using the S-36 Boiler. [Basis: Cumulative Increase]

13. The Owner/Operator shall vent the VOC emissions from S-167 and S-168 Seal Oil Spargers in a closed system to the flare gas recovery header to be returned to the refinery fuel gas system. [Basis: Cumulative Increase]

14. The Owner/Operator shall use the continuous emission monitors required by Regulation 9, Rule 10, to monitor compliance for all NOx limits at the following sources:
    CO Furnaces: S-3, S-4
    Process Furnaces: S-21, S-22, S-23, S-25, S-30, S-31, S-32, S-33, S-220
    Steam Generators : S-40, S-41
    [Basis: Regulation 9-10-502.1]

15. The Owner/Operator shall use the continuous opacity monitors required by Regulation 1-520 to monitor compliance for the opacity limits at the Main Stack for the following sources:
    S-5 Fluid Catalytic Cracking Unit, Catalyst Regenerator
    S-6 Fluid Coker, Burner

16. Deleted. Requirements to prepare test plans, train employees, and install necessary equipment have been completed.

17. The Owner/Operator shall install continuous level monitors on two water seal compartments of the FCCU/CKR Dump Stack P-69, including continuous data historization for the parametric level monitors, and maintain the instrument in good operating condition at all times. The District may assume the opacity has

exceeded a Ringelmann 1-1/2 when a breakthrough is recorded by the continuous level monitor, except where it can be confirmed that the dump stack was not used or an opacity excess did not occur. The Owner/Operator shall document the circumstances of such exceptions in a letter to the District within 30 days following such an indicated breakthrough. [Basis: Regulation 6-1-302, Regulation 1-441]

Condition 24198

APPLICATION 16937 (Jan 2009), VIP Amendments. Condition supersedes Condition 19466 upon activation of Condition 20820, Part 21.a triggers

1. The Owner/Operator shall operate S-160 Seal Oil Sparger only when abated by A-13/A-26 Vapor Recovery Compressor to be returned to the refinery fuel gas system. (Basis: Cumulative Increase)

2. The Owner/Operator shall abate emissions from S-8 coke storage tanks by A-8 and/or A-10 baghouses at all times. (Basis: Cumulative Increase)

3. The Owner/Operator shall monitor and record on a monthly basis the visible emissions from Sources S-1, S-2, S-8, S-11, S-176, S-233 and S-237 to demonstrate compliance with Regulation 6-301 (Ringlemann 1 or 20% opacity). For S-176 only, this monitoring is only required when dry salt is added to the tank. For S-8, compliance with Regulation 6-301 shall be demonstrated at the outlet of A-8/A-10 baghouses. These records shall be kept for a period of at least 5 years from date of entry and shall be made available to District staff upon request. [Basis: Regulation 6-301]

4. The Owner/Operator shall notify the District in writing by fax or email no less than three calendar days in advance of any scheduled startup or shutdown of any process unit and as soon as feasible for any unscheduled startup or shutdown of a process unit, but no later than 48 hours or within the next normal business day after the unscheduled startup/shutdown. The notification shall be sent in writing by fax or email to the Director of Enforcement and Compliance. The requirement is not federally enforceable. [Regulation 2-1-403]

5. The Owner/Operator shall abate the emissions from the S-1059 and S-1060, PS Furnaces by SCRs A-1059 and/or A-1060 and Prescrubber/Regenerative Amine Scrubber A-1047, except during startup, shutdown, emergency bypass and bypass periods, and the Owner/Operator shall exhaust those emissions through the FCCU/CKR stack (P-1059). [Basis: Regulation 6-1-301 and Regulation 6-1-304].

6. Deleted (Redundant with quarterly PM10 source test requirement in Condition 20820, Part 72)

7. The Owner/Operator shall perform an annual source test on Sources S-8 and S-176 to demonstrate compliance with Regulation 6-310 (outlet grain loading no greater than 0.15 grain/dscf). The Owner/Operator shall submit the test results to the District's Compliance and Enforcement Division and the District's Permit Services Division no less than 45 days after the test. These records shall be kept for a period of at least 5 years from date of entry and shall be made available to District staff upon request. For S-176 only, this source test is only required when dry salt is added to the tank. For S-8, compliance with Regulation 6-301 shall be demonstrated at the outlet of A-8/A-10 baghouses. [Basis: Regulation 6-310]

8. The Owner/Operator shall perform annually a source test on S-1 and S-2 to determine compliance with Regulation 6-330 (Outlet grain loading not to exceed 0.08 grain/dscf of SO3 and H2SO4). The Owner/Operator shall submit the test results to the District's Compliance and Enforcement Division and the District's Permit Services Division no less than 45 days after the test. These records shall be kept for a period of at least 5 years from date of entry and shall be made available to District staff upon request. [Basis: Regulation 6-330]

9. Deleted (Redundant with quarterly PM10 source test requirement in Condition 20820, Part 72)

10. The Owner/Operator shall conduct a District-approved source test on a semi-annual basis on Sources S-7, S-20, S-21 or S-22, S-23, S-24, S-25, S-26, S-30, S-31, S-32, S-33, S-34, S-40, S-41 and on an annual basis on sources S-35 and S-173 to demonstrate compliance with Regulation 9-10-305 (CO not to exceed 400 ppmv, dry, at 3% O2, operating day average). The Owner/Operator shall submit the test results to the District's Compliance and Enforcement Division and the District's Permit Services Division no less than 45 days after the test. These records shall be kept for a period of at least 5 years from date of entry and shall be made available to District staff upon request.

    The Owner/Operator shall ensure that S-220 does not exceed 400 ppmv of CO, dry, at 3% O2, operating day average, measured by a properly installed CEM for CO and O2. [Basis: Regulation 9-10-305]

11. The Owner/Operator shall conduct a semi-annual District-approved source test on Sources S-43, S-44 and S-46 to demonstrate compliance with Regulation 9-9-301.1 (NOx not to exceed 55 ppmv, dry, at 15% O2, fired on refinery fuel gas). The Owner/Operator shall submit the test results to the District's Compliance and Enforcement Division and the District's Permit Services Division no less than 45 days after the test. These records shall be kept for a period of at least 5 years from date of entry and shall be made available to District staff upon request. [Basis: Regulation 9-9-301.1]

12. The Owner/Operator shall abate the VOC emissions from the S-159 Lube Oil Reservoir using the S-36 Boiler. [Basis: Cumulative Increase]

13. The Owner/Operator shall vent the VOC emissions from S-167 and S-168 Seal Oil Spargers in a closed system to the flare gas recovery header to be returned to the refinery fuel gas system. [Basis: Cumulative Increase]

14. The Owner/Operator shall use the continuous emission monitors required by Regulation 9, Rule 10, to monitor compliance for all NOx limits at the following sources:
    Process Furnaces: S-21 or S-22, S-23, S-25, S-30, S-31, S-32, S-33, S-220
    Steam Generators: S-40, S-41
    [Basis: Regulation 9-10]

15. The Owner/Operator shall use the continuous opacity monitors or an approved alternate monitoring plan (AMP) required by Regulation 1-520 to monitor compliance for the opacity limits at the FCCU/CKR Stack for the following sources:
    S-5 Fluid Catalytic Cracking Unit, Catalyst Regenerator
    S-6 Fluid Coker, Burner
    [Basis: Regulation 1-520]

16. Deleted. Requirements to prepare test plans, train employees, and install necessary equipment have been completed.

17. The Owner/Operator shall install continuous level monitors on two water seal compartments of the FCCU/CKR Dump Stack P-69, including continuous data historization for the parametric level monitors, and maintain the instrument in good operating condition at all times. The District may assume the opacity has exceeded a Ringelmann 1-1/2 when a breakthrough is recorded by the continuous level monitor, except where it can be confirmed that the dump stack was not used or an opacity excess did not occur. The Owner/Operator shall document the circumstances of such exceptions in a letter to the District within 30 days following such an indicated breakthrough. [Basis: Regulation 6-1-302, Regulation 1-441]

X. RECOMMENDATION

Issue a conditional change to the Permit to Operate to Valero Refining Company for the following equipment:

P-69 FCCU/Coker Dump Stack for the FCCU (S-5) and Coker Unit (S-6)

Thu H. Bui
Senior Air Quality Engineer
Engineering Division
Date:

THB:T:\Valero\21573\21573e\3/25/10

EVALUATION REPORT
VALERO REFINING COMPA/NY
Application #22080 - Plant # 12626

3400 East Second St.
Benicia, CA 94510

I. BACKGROUND

Valero has applied for an Authority to Construct/Permit to Operate for the following equipment:

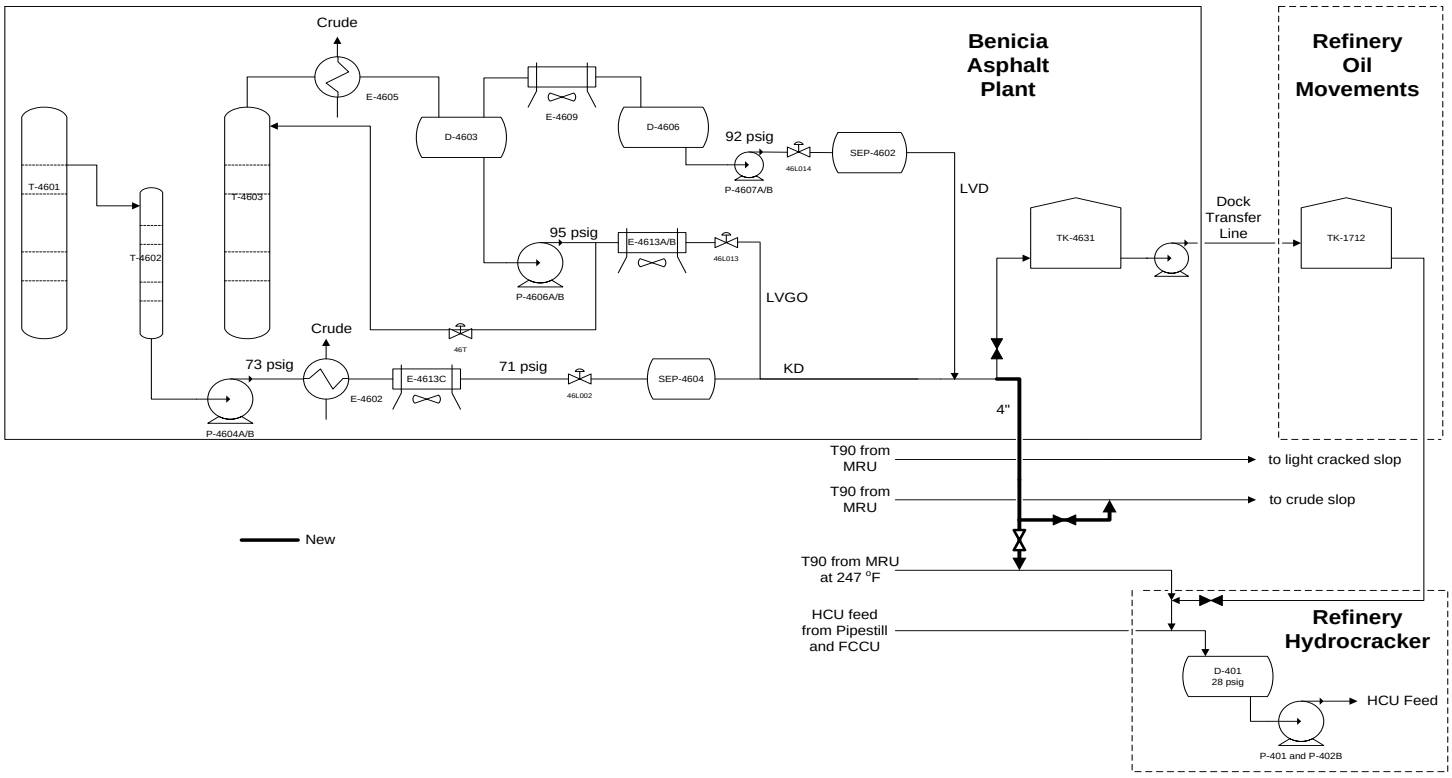
S-1003 4" Bypass Pipeline around Tank TK-4631 (S-63) to transfer Gas Oil from Valero Benicia Asphalt Plant (BAP), Facility No. A0901, S-18 Crude Unit to Valero Benicia Refinery, Facility No. B2626, S-1003 HCU or S-1006 Crude Unit

This project will install a new pipeline that transfers the BAP Gasoil (Kerosene Distillate, Light Vacuum Gas Oil, Heavy Vacuum Gas Oil and Asphalt) from Valero Asphalt Plant (BAP) to Valero Refinery Hydrocracking Unit (HCU, S-1003)) or the crude slop tanks (NuStar sources S-57 through S-62 for facility B5574, and Valero Sources S-1047, S-1048 for facility B2626). Normally, the BAP Gasoil will be sent directly to the HCU feed drum. The connection to slop tanks is used only during HCU downtime or other inventory management scenarios.

Currently, the BAP Gasoil is routed to the Refinery Gasoil storage tanks such as exempt source S-64 (TK-1712), and then the gasoil is transferred to the HCU feed drum. The original interconnecting piping between the Huntway and Exxon docklines was installed in 1982 for loading/off-loading flexibility. Subsequently, an additional connection intended for distillate transfer was installed after Valero purchased Huntway in 2001 which allowed the retirement of BAP Sources S-14 and S-15 truck loading racks. Material previously loaded onto trucks was now safely piped to the Refinery for further processing, thereby eliminating emissions associated with loading operations. . This project provides a more efficient route for the BAP gasoil to go directly to the Hydrocracker feed drum, thereby eliminating intermediate storage and the associated tank emissions.

Historically, Valero has been transferring approximately 2,665 bbl/day of KERO/LVGO/HVGO/Asphalt or up to 972,725 bbls per year. . The total annual throughput for 2009 was 561,574 barrels per year. Based on permitted maximum crude rates at BAP, the projected maximum gasoil transfer rate is estimated to be 1,110 MMbbl/year. The HCU maximum throughput is limited to 40,000 barrels/day average and 44,000 barrels/day maximum under Condition 20820, Part 53. Valero indicated there are no changes in process unit throughput, combustion (fired duty), tanks throughputs or other stationary sources associated with this application.

This project will not trigger PSD because the maximum NOx production of S-23 (HCU furnace) at maximum NOx production at maximum permitted firing (185 MMBTU/HR for 24-hours) and maximum permitted concentration (40 ppmv) would result in 175 lbs/day of NOx or 32 tons/year of NOx at maximum potential to emit, which is much less than the 40 ton/yr of NOx emission increase trigger level. The upstream and downstream units of the HCU are tanks primarily, so the POC increase, if any, will not exceed the PSD trigger level of 40 ton/yr.



II. EMISSION CALCULATIONS

No new light liquid or gas vapor VOC fugitive components are associated with this project. There are additional heavy liquid fugitive components associated with the 4" bypasss pipeline as a result of the proposed project. Per local and federal fugitive regulations, component with a high initial boiling point (>302°F) are not subject to routine fugitive emission inspections or identification.

Table 1 summarizes the estimated emission increases from heavy liquid VOC components, utilizing emission factors from Valero's 2003 light liquid and gas vapor fugitive program monitoring data. Therefore, the estimated emissions below are conservative for heavy liquid fugitive components because the light liquid fugitive components have higher VOC emissions.

Table 1

Fugitive Emissions Estimate

Component	Emission Factor (light liquid or gas vapor) (lbs/day/source)*	Emissions			
		Counts	Lb/day	Lb/yr	Ton/yr
Valves	0.00119	44	0.0524	19.11	0.0096
Flanges/Connectors	0.00166	0	0.0	0.0	0.0
PRDs **	0	1	0.0	0.0	0.0
Total			**0.0524**	**19.11**	**0.0096**

*Factors from Valero Fugitive Program CY 2003, approved by District from Valero's Actual Monitoring Data
** Since Regulation 8, Rule 28 requires that all new PRDs be abated, then emissions from the new PRDs are assumed to be zero

III. PLA/NT CUMULATIVE INCREASE SINCE 4/5/1991

This project will increase 0.0096 ton/yr of VOC emission to the plant cumulative emissions.

IV. TOXIC SCREENING A/NALYSIS

None of the toxic exceeds the toxic air contaminant trigger levels; therefore, a Toxic RSA is not required per Regulation 2-5.

V. BEST AVAILABLE CONTROL TECHNOLOGY

This application does not exceed the 10 lb POC/highest day trigger level. Therefore, BACT is not triggered per Regulation 2-2-301. However, all fugitive components from the BAP Gasoil project are subject to BACT as part of Valero's compliance commitment.

VI. OFFSETS

Offsets are required for this project because Valero is a major facility with emissions greater than 100 ton/yr for POC emissions per Regulation 2-2-302. POC emissions will require offsets at a 1.15 to 1.0 ratio. Estimated POC offsets based on the emissions in Table 1 are 0.0096 tons/year. The final fugitive component count will be determined after construction is completed and within 60 days after the project is started up. Final POC offsets for the project will be based on the final fugitive component count. At this time, Valero will defer the offsets until the annual renewal update because the POC emission increase is much less than 1 ton/yr per Regulation 2-2-421.

VII. STATEMENT OF COMPLIA/NCE

Sources of this application are subject to and expected to comply with Regulation 8-18 and 8-28 for Equipment Leak and Pressure Relief Devices. The valves, flanges, connectors, pumps and compressors from Valero BAP Gasoil Transfer project are exempt from Regulation 8-18-400 section where inspection and identification are not required. However, they are subject to Regulation 8-18-300 and 8-18-500 sections where standards and monitoring and records apply.

The Valero BAP Gasoil Transfer project is subject and expected to comply with NSPS Part 60, Subpart GGG (BAAQMD Reg. 10-59) and NSPS Part 60, Subpart VV (BAAQMD Reg. 10-52).

This project is considered to be ministerial under the District's CEQA Regulation 2-1-311 and therefore is not subject to CEQA review. The engineering review for this project requires only the application of standard permit conditions and standard emission factors in accordance with Permit Handbook Chapter 3.4. Applicant has submitted a CEQA Environmental Information Form H for the project, and has not identified any potential significant impacts.

Valero is not located within 1,000 feet of any school. The public notification requirements of Regulation 2-1-412 are not required.

BACT, Offsets, Toxics, and PSD do not apply.

VIII. CONDITIONS

S-1003 Valero BAP Gasoil Transfer Project, Fugitive Equipment, A/N 22080

1. a. The Owner/Operator shall equip all light hydrocarbon control valves installed as part of the Valero BAP Gasoil Transfer Project with live loaded packing systems and polished stems, or valves complying with Regulation 8, Rule 18 requirement. [Basis: Cumulative Increase, offsets]
   b. The Owner/Operator shall equip all flanges/connectors installed in the light hydrocarbon piping systems as a result of the Valero BAP Gasoil Transfer Project with graphitic-based gaskets unless the service requirements prevent this material. [Basis: Offsets, Cumulative Increase]
   c. The Owner/Operator shall equip all new light hydrocarbon centrifugal pumps installed as part of the Valero BAP Gasoil Transfer Project with a seal-less design or with dual mechanical seals with a heavy liquid barrier fluid, or pumps complying with Regulation 8, Rule 18 requirement. [Basis: Offsets, Cumulative Increase]
   d. The Owner/Operator shall integrate all new light liquid or gas vapor fugitive equipment installed as part of the Valero BAP Gasoil Transfer Project, in organic service, into the owner's fugitive equipment monitoring and repair program. [Basis: Compliance monitoring]

2. The Owner/Operator shall submit count of installed pumps, valves, and flanges/connectors every 180 days until completion of the project. For flanges/connectors, the owner/operator shall also provide count of the number of graphitic-based and non-graphitic gaskets used. The Owner/Operator has been permitted to install fugitive components (44 valves, 1 PRD) with a total POC emission rate of 0.0096 TPY for the entire Valero BAP Gasoil Transfer Project. If there is an increase in the total fugitive component emissions from the Valero BAP Gasoil Transfer Project, the plants cumulative emissions for the Valero BAP Gasoil Transfer Project shall be adjusted to reflect the difference between emissions based on predicted versus actual component counts. The Owner/Operator shall provide to the District all additional required offsets at an offset ratio of 1.15:1 no later than 14 days after the submittal of the final POC fugitive equipment count for the Valero BAP Gasoil Transfer Project. If the actual component count is less than the predicted, at the completion of the Valero BAP Gasoil Transfer Project, the total will be adjusted accordingly. Any ERC's applied by the facility in excess of the actual total fugitive emissions will be credited back to Owner/Operator prior to issuance of the permits. [Basis: Cumulative Increase, Offsets]

3. The Owner/Operator shall vent all pressure relief devices installed as part of the BAP Gasoil Transfer Project to a flare gas recovery system with a recovery and/or destruction efficiency of at least 98% by weight. [Basis: Regulation 8-28]

IX. RECOMMENDATION

Issue a conditional Authority to Construct to Valero Refining Company for the following equipment:

S-1003 4" Bypass Pipeline around Tank TK-4631 (S-63) to transfer Gas Oil from Valero Benicia Asphalt Plant (BAP), Facility No. A0901, S-18 Crude Unit to Valero Benicia Refinery, Facility No. B2626, S-1003 HCU or S-1006 Crude Unit.

_____
Thu H. Bui
Senior Air Quality Engineer
Engineering Division

*Date:*_____

THB:E:\Valero\22080

EVALUATION REPORT
VALERO REFINING COMPA/NY
Application #22081 - Plant # 12626

3400 East Second St.
Benicia, CA 94510

I. BACKGROUND

Valero has applied for an alteration to the Permit to Operate for the following equipment:

S-23 Hydrocracker Furnace, F-401, John Zinc, Ultra Low NOx COOLstars-15, maximum 200 MMBTU/hr

Valero plans to replace all 20 of existing low NOx burners with 20 new ultra low NOx burners. Valero also requests to clean up the permit to operate to remove A-25, a Selective Non Catalytic Reduction that has not been in service for a long time. The new burners are intended to increase the margin of compliance with the current NOx emission limits for S-23 while allowing a slightly higher excess oxygen to improve combustion stability and safety. The maximum firing rate of S-23 is limited in Condition #14318. The maximum firing rates of new burners will be equal to the existing limits. Since replacing burners is qualified as an alteration for S-23 as defined in Regulation 2-1-233.1 This project will not subject to New Source Review of Regulation 2-2.

II. EMISSION CALCULATIONS

There are no emission increases of any air pollutant for the alterations covered by this application. The maximum firing rate for the replacement burners will be equal to or less than the existing permit condition limit for each furnace.

III. PLA/NT CUMULATIVE INCREASE SINCE 4/5/1991

The cumulative increase for this application is ZERO for all pollutants.

IV. TOXIC SCREENING A/NALYSIS

Toxic emissions will not increase as a result of this application. Therefore, a toxic risk screening analysis is not required per Regulation 2-5.

V. BEST AVAILABLE CONTROL TECHNOLOGY

This application has no emission increase and does not exceed the 10 lb POC/highest day trigger level. Therefore, BACT is not triggered per Regulation 2-2-301.

VI. OFFSETS

Offsets are not triggered since there are no emission increases from this application per Regulation 2-2-302.

VII. STATEMENT OF COMPLIA/NCE

Source S-23 is subject to and expected to comply with Regulation 9-10 which meet 0.033 lb/MMBtu of NOx and 400 ppmv of CO requirements.

This project is considered to be ministerial under the District's CEQA Regulation 2-1-311 and therefore is not subject to CEQA review. The engineering review for this project requires only

the application of standard permit conditions and standard emission factors in accordance with Permit Handbook Chapter 2.1.

This project is also considered to be categorically exempt under the District's CEQA Regulation 2-1-312.2 and 2-1-312.3, and therefore not subject to CEQA review. This permit application is to install air pollution or abatement equipment to aid compliance with the NOx and CO limit of Regulation 9-10.

Valero is not located within 1,000 feet of any school. The public notification requirements of Regulation 2-1-412 are not required.

PSD does not apply.

VIII. CONDITIONS

The District will not impose any new permit conditions on these sources. All existing conditions will remain in effect. The maximum firing rates are already limited by permit condition ID# 14318. An initial source test for NOx and CO is already required by Reg. 9-10-501.

IX. RECOMMENDATION

S-23 Hydrocracker Furnace, F-401, John Zinc, Ultra Low NOx COOLstars-15, maximum 200 MMBTU/hr

_____
Thu H. Bui
Senior Air Quality Engineer
Engineering Division

*Date:*_____

THB:E:\Valero\22081\8-19-2010

EVALUATION REPORT
VALERO REFINING COMPA/NY
Application #22082 - Plant # 12626
3400 East Second St.
Benicia, CA 94510

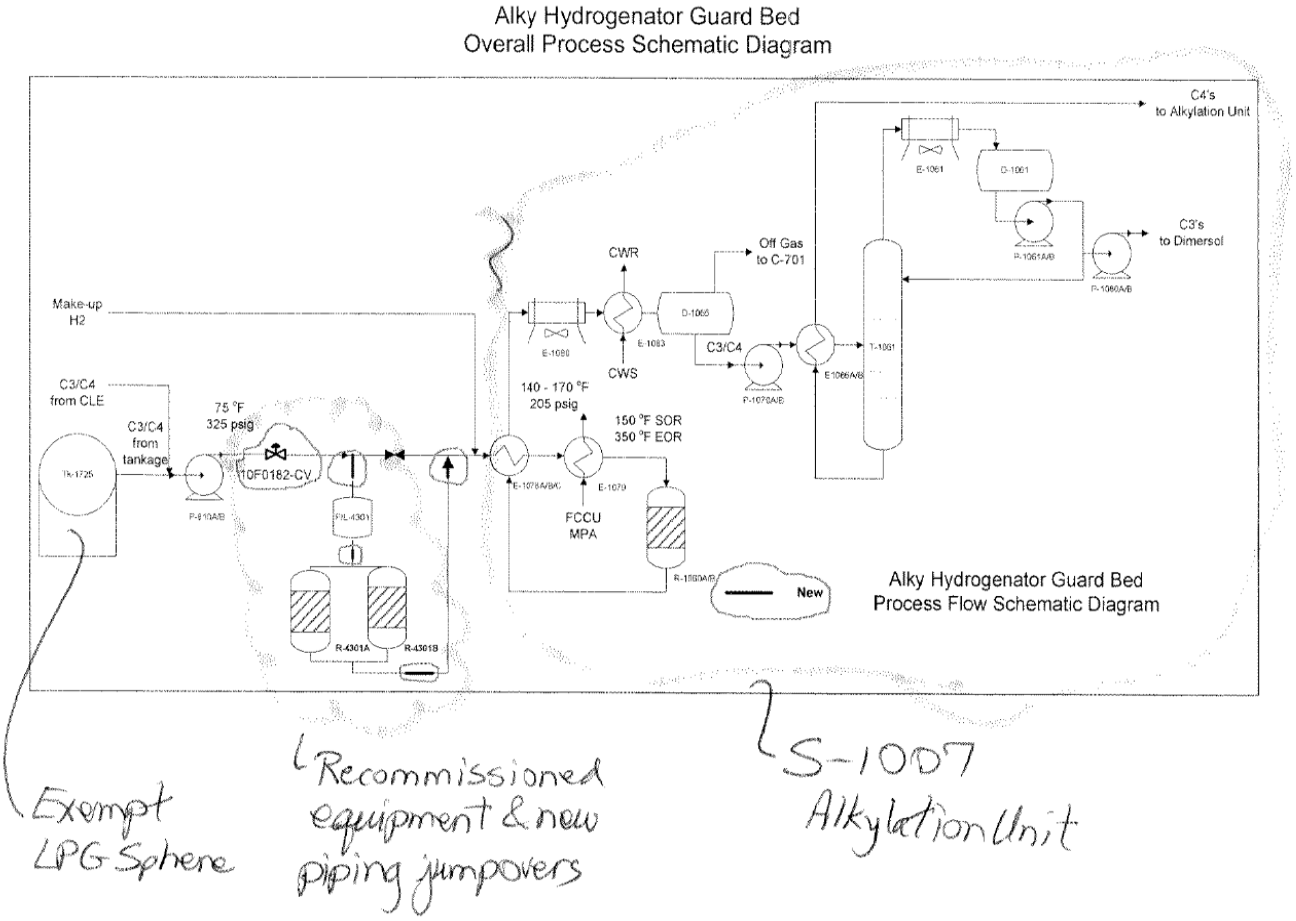
I. BACKGROUND

Valero has applied for an Authority to Construct/Permit to Operate for the following equipment:

S-1063 Alkylation Hydrogenator Guard Beds, FIL-4301 and R-4301A/B.

The Alkylation Unit Hydrogenator uses the palladium catalysts in its reactors. The Hydrogenator catalyst often requires frequent change-out because of the trace metals in the feed such as arsine, light sulfur compounds and chlorides can decrease the palladium recovery and increase the Alkylation unit acid consumption. Valero requests to reuse the filter (FIL-4301) and reactors (R-4301A/B) that were taken out of service in the MTBE unit as guard beds in the Alkylation process Valero will sandblast, remove insulation, clean, repaint and install adsorbent and inert in these guard beds for palladium catalyst protection. Valero will also replace the feed control valve and increase Alkylation unit feed safety valve set pressure to mitigate the hydraulic constraint.

This project will require a new jump-over piping to incorporate the new guard beds into the Alkylation process. The fugitive emissions for the new jump-over piping are calculated below. There are no changes in the Alkylation process unit throughput, combustion, tanks or other stationary sources.



II. EMISSION CALCULATIONS

New fugitive components associated with the Alkylation Hydrogenator Guard Bed S-1063 and its piping jump-overs will be added as a result of the proposed project. Table 1 summarizes the estimated increases in VOC emissions associated with fugitive components.

Table 1

Fugitive Emissions Estimate

Component	Emission Factor (lbs/day/source)*	Emissions			
		Counts	Lb/day	Lb/yr	Ton/yr
Valves	0.00119	104	0.1238	45.1724	0.0226
Flanges/Connectors	0.00166	89	0.1477	53.9251	0.0270
PRDs **	0	3	0.0	0.0	0.0
Total			**0..2715**	**99.0975**	**0.0496**

*Factors from Valero Fugitive Program CY 2003, approved by District from Valero's Actual Monitoring Data
** Since Regulation 8, Rule 28 requires that all new PRDs be abated, then emissions from the new PRDs are assumed to be zero

III. PLA/NT CUMULATIVE INCREASE SINCE 4/5/1991

This project will increase 0.0496 ton/yr of VOC emission to the plant cumulative emissions.

IV. TOXIC SCREENING A/NALYSIS

None of the toxic exceeds the toxic air contaminant trigger levels; therefore, a Toxic RSA is not required per Regulation 2-5.

V. BEST AVAILABLE CONTROL TECHNOLOGY

This application does not exceed the 10 lb POC/highest day trigger level. Therefore, BACT is not triggered per Regulation 2-2-301. However, all fugitive components from the Alkylation Guard Beds are subject to BACT as part of Valero's compliance commitment.

VI. OFFSETS

Offsets are required for this project because Valero is a major facility with emissions greater than 100 ton/yr for POC emissions per Regulation 2-2-302. POC emissions will require offsets at a 1.15 to 1.0 ratio. Estimated POC offsets based on the emissions in Table 1 are 0.0496 tons/year. The final fugitive component count will be determined after construction is completed and within 60 days after the project is started up. Final POC offsets for the project will be based on the final fugitive component count. At this time, Valero will defer the offsets until the annual renewal update because the POC emission increase is much less than 1 ton/yr per Regulation 2-2-421.

VII. STATEMENT OF COMPLIA/NCE

Regulation 8, Rule 18: The fugitive components summarized in Table 1 above will be subject to Sections 301, 302, 303, 304, 306, and 307 in Regulation 8, Rule 18 "Equipment Leaks". Sections 301, 302, and 304 require, among other things, that organic compound leaks, not exceed 100 ppm for general components, valves, and connections.

Regulation 10 Standards of Performance for New Stationary Sources (NSPS): The Alkylation Hydrogenator Guard Bed S-1063 will be part of the existing Alkylation process unit, which also includes the Alkylation Unit (S1007) and the Alkylation Debutanizer (S211). The existing Alkylation process unit is subject to the NSPS requirements of 40 CFR 60 Subpart GGG "Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries for which Construction, Reconstruction, or Modification Commenced After January 4, 1983, and on or Before November 7, 2006" (NSPS GGG).

The fugitive components associated with S-1063 will become part of the Alkylation process unit's affected facility for NSPS GGG, which is defined in 60.590(a)(3) as "The group of all the equipment (defined in §60.591) within a process unit". Equipment is defined as "each valve, pump, pressure relief device, sampling connection system, open-ended valve or line, and flange or other connector in VOC service…"

The fugitive components associated with the Alkylation Hydrogenator Guard Bed S-1063 will not be subject to the NSPS requirements of 40 CFR 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" (NSPS GGGa) because S-1063, by itself, does not meet the definition of "process unit" in Subpart GGGa. S-1063 is not an independent process unit, but will be part of the existing Alkylation process unit.

The addition of the Alkylation Hydrogenator Guard Bed S-1063 to the existing Alkylation process unit does not make the entire Alkylation process unit subject to the NSPS requirements of NSPS GGGa. Existing facilities (such as the Alkylation process unit) that are subject to 40 CFR 60 Subpart GGG are not subject to 40 CFR 60 Subpart GGGa in accordance to the exclusion in Subpart GGGa at Section 60.590a(d) "Facilities subject to subpart VV, subpart VVa, subpart GGG, or subpart KKK of this part are excluded from this subpart." The special provision in 60.590a(d) supersedes the definition of "modification" as set forth in NSPS Subpart A at 60.14(a) per 60.14(f), "Special provisions set forth under an applicable subpart of this part shall supersede any conflicting provisions of this section".

This project is considered to be ministerial under the District's CEQA Regulation 2-1-311 and therefore is not subject to CEQA review. The engineering review for this project requires only the application of standard permit conditions and standard emission factors in accordance with Permit Handbook Chapter 3.4. Applicant has submitted a CEQA Environmental Information Form H for the project, and has not identified any potential significant impacts.

Valero is not located within 1,000 feet of any school. The public notification requirements of Regulation 2-1-412 are not required.

BACT, Toxics, and PSD do not apply.

X. CONDITIONS

S-1063 Alkylation Guard Beds, Fugitive Equipment, A/N 22082

1. a. Deleted. (The ATC design requirements for valves were verified when the PTO was issued in September 2010).
   e. Deleted. (The ATC design requirements for valves were verified when the PTO was issued in September 2010).

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2. The Owner/Operator shall limit the total fugitive POC emissions from all new and modified equipment installed as a result of the Alkylation Hydrogenator Guard Bed Project, which includes S-1063, to no more than 0.0496 tons in any rolling 365 consecutive day period. [Basis: Cumulative Increase, Offsets]

XI. RECOMMENDATION

Issue a conditional Authority to Construct to Valero Refining Company for the following equipment:

S-1063 Alkylation Hydrogenator Guard Beds, FIL-4301 and R-4301A/B.

_____
Thu H. Bui
Senior Air Quality Engineer
Engineering Division

Date: _____

THB:E:\Valero\22082

EVALUATION REPORT
Valero Benicia Asphalt Plant
Plant Number 12626
Application Number 22574

Background

Valero Refining Company (Valero) is requesting to replace the existing Acid Gas Flare (AGF) tip at S-16 with an equivalent tip incorporating improved pilots and upgraded metallurgy. The existing tip will be refurbished and kept as a spare for future maintenance activity.

The existing STF-16" flare will be replaced with John Zink's QS-16 steam flare. The new system provides smokeless control and stainless steel design, and has 3 John Zink WindProof Pilots. Each pilot has a natural gas design flow rate of 50 SCFH, which is equivalent to 0.05 MMBtu/hour. The design capacity of all three pilots (0.15 MMBtu/hour) is less than the capacity of the existing pilots (0.35 MMBtu/hour) at S-16.

Because the flare tip replacement project does not alter any upstream operations that are abated by the acid gas flare system and the natural gas consumption will be lower at the new tip than the existing one, the project will not result in any emission increase.

Emission Calculations

There will be no increase in emissions as a result of this application.

Plant Cumulative Increase

There will be no increase in emissions as a result of this application.

Toxics Risk Screening Analysis

A toxics risk analysis is not required for this application since the emissions are not expected to increase as a result of this application per Regulation 2, Rule 5-New Source Review of Toxic Air Contaminants.

Statement of Compliance

S-16 is expected to continue to comply with all applicable requirements specified in the most recent facility Title V permit.

This application will not trigger BACT, offsets, or PSD since there will be no increase in emissions as a result of this application per Regulation 2, Rule 2.

This application is categorically exempt from CEQA under Section 2-1-312.6 since the project is a minor alteration of the existing source involving no expansion of use beyond previously existing.

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

Permit Conditions

S-16 will continue to be subject to Permit Condition # 20806, and no changes will be made to this condition as a result of this application.

Recommendation

Waive the Authority to Construct and issue the Permit to Operate to the flare tip replacement project at the following source to Valero (Plant 12626):

S-16 Acid Gas Flare: John Zink QS-16 Steam Flare System, 16" tip, 3 Windproof High Performance Pilots, 0.15 MMBtu/hour.

by date
Xuna Cai
Air Quality Engineer

And by date
Thu Bui
Senior Air Quality Engineer

EVALUATION REPORT
Valero Benicia Asphalt Plant
Plant Number 12626
Application Number 22602

Background

Valero Refining Company (Valero) is requesting to change the permit condition for the following sources at its Benicia Refinery:

S-7	**F-103 Jet Fuel HF, 53 MMBtu/hr**
S-20	**F-104 Naphtha HF, 62 MMBtu/hr**
S-21	**F-301 Hydrogen, 614 MMBtu/hr**
S-22	**F-351 Hydrogen, 614 MMBtu/hr**
S-23	**F-401 Gas Oil HC, 200 MMBtu/hr**
S-24	**F-601 Cat Feed HF, 33 MMBtu/hr**
S-25	**F-701 Cat Feed, 230 MMBtu/hr**
S-26	**F-801 HCN HF, 33 MMBtu/hr**
S-30	**F-2901 PFR Preheat, 463 MMBtu/hr total**
S-31	**F-2902 PFR Preheat, 463 MMBtu/hr total**
S-32	**F-2903 PFR Preheat, 463 MMBtu/hr total**
S-33	**F-2904 PFR Preheat, 463 MMBtu/hr total**
S-34	**F-2905 PFR Regen Gas, 74 MMBtu/hr**
S-35	**F-2906 PFR React Gas, 14 MMBtu/hr**
S-40	**SG-2301 Steam Gen, 218 MMBtu/hr**
S-41	**SG-2302 Steam Gen, 218 MMBtu/hr**
S-173	**F-902 Coker Steam Superheat, 20 MMBtu/hr**
S-220	**F-4460 MRU Hot Oil, 351 MMBtu/hr**

These boilers and process heaters are subject to Permit Condition Number 21233, which is for Regulation 9-10 refinery-wide compliance. Parts 6A and 7of the condition require the facility to submit source test results within 45 days of the test, and allow an extension of 15 days with APCO approval upon request. In this application, Valero requests for the 15-day submittal extension of the source test results. The District is granting this request since our planning division is currently proposing the 45 days allowance and the 15-day extension with request on the Manual of Procedure as part of updating Regulation 9, Rule 10 for NOx and CO from Boilers, Steam Generators and Process Heaters in Petroleum Refineries. Therefore, Parts 6A and Part 7 will be modified to allow a total of 60 days to submit the source test results.

In addition, Valero has submitted another application (Application 22609) to make the same changes under its Benicia Asphalt (Plant 13193).

Valero and WSPA have repeatedly requested this change prior to the Tittle V permit renewal. Valero stated that because the source test requirements affect all refineries in the Bay Area and with limited number of reliable source testing consultants in the Bay Area, it takes longer for its consultants to provide source test results and therefore, causing the delays of the result submittals to the District.

Emission Calculations

There will be no increase in emissions as a result of this application.

Plant Cumulative Increase

There will be no increase in emissions as a result of this application.

Toxics Risk Screening Analysis

A toxics risk analysis is not required for this application since the emissions are not expected to increase as a result of this application per Regulation 2, Rule 5-New Source Review of Toxic Air Contaminants.

Statement of Compliance

S-7, S-20 through S-26, S-30 through 35, S-40, S-41, S-173, and S-220 are expected to continue to comply with all applicable requirements specified in the most recent facility Title V permit.

This application will not trigger BACT, offsets, or PSD since there will be no increase in emissions as a result of this application per Regulation 2, Rule 2.

This application is not subject to CEQA since the project is a ministerial action conducted using the fixed standards and objective measurements outlined in the Permit Handbook Chapter 2.1.

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

Permit Conditions

Permit Condition 21233, Parts 6A and 7 will be modified as shown in the underline/strikeout format below.

Permit Condition 21233

Valero Refining Company – California
3400 E. Second Street
Benicia, Ca 94510
Application 11307 (B2626)
Application 11356 (A0901, 13193)
S-20 (B2626) Modified by Application 12701
S-19 (A0901) Modified by Application 13011 and 15805
S-7 (B2626) Modified by Application 15961
S-19 (A0901) Modified by Application 22724
Application 22602 (B2626)
Application 22609 (A0901)
Plant B2626 and A0901
Regulation 9-10 Refinery-Wide Compliance

*1. The following sources are subject to the refinery-wide NOx emission rate and CO concentration limits in Regulation 9-10: (Basis: Regulation 9-10-301 & 305)

Facility No. B2626, Valero Refining Company

S#	Description	NOx CEM
7	F-103 Jet Fuel HF, 53 MMBtu/hr	No
20	F-104 Naphtha HF, 62 MMBtu/hr	No
21	F-301 Hydrogen, 614 MMBtu/hr	Yes
22	F-351 Hydrogen, 614 MMBtu/hr	Yes
23	F-401 Gas Oil HC, 200 MMBtu/hr	Yes
24	F-601 Cat Feed HF, 33 MMBtu/hr	No
25	F-701 Cat Feed, 230 MMBtu/hr	Yes
26	F-801 HCN HF, 33 MMBtu/hr	No
30	F-2901 PFR Preheat, 463 MMBtu/hr total	Yes
31	F-2902 PFR Preheat, 463 MMBtu/hr total	Yes
32	F-2903 PFR Preheat, 463 MMBtu/hr total	Yes
33	F-2904 PFR Preheat, 463 MMBtu/hr total	Yes
34	F-2905 PFR Regen Gas, 74 MMBtu/hr	No
35	F-2906 PFR React Gas, 14 MMBtu/hr	No
40	SG-2301 Steam Gen, 218 MMBtu/hr	Yes
41	SG-2302 Steam Gen, 218 MMBtu/hr	Yes
173	F-902 Coker Steam Superheat, 20 MMBtu/hr	No
220	F-4460 MRU Hot Oil, 351 MMBtu/hr	Yes

Facility No. A0901 (13193), Valero Benicia Asphalt Plant

S#	Description	NOx CEM
20	Steam Boiler, 14.7 MMBtu/hr	No
21	Steam Boiler H-2B, 14.7 MMBtu/hr	No

A. Compliance with the daily refinery wide average NOx emission limit, 0.033 lb NOx/MMBtu fired duty is achieved through the use of an approved Alternate Compliance

Plan using NOx IERCs in accordance with the provisions in Regulation 2-9-303.

B. The owner/operator of each source listed in Part 1 above shall determine compliance with Regulation 9-10 as follows:

1) Calculate NOx emissions from each furnace using measured fuel gas rates, and either:

   a. CEM data or

   b. NOx emission factors from Part 5A

2) The daily refinery wide average emission rate shall be determined by dividing the combined total emissions from sources listed in Part 1 above by the combined total heat input.

3) Sufficient NOx IERC's will be provided in accordance with the provisions of Regulation 2-9-303 to ensure compliance with the refinery wide average NOx emission limit of 0.033 lb NOx/MMBtu fired duty.

*2. The Owner/Operator of each source with a maximum firing rate greater than 25 MMBtu/hr listed in Part 1 shall properly install, properly maintain, and properly operate an O2 monitor and recorder. (Basis: Regulation 9-10-502)

*3. The Owner/Operator shall operate each source listed in Part 1, which does not have a NOx CEM, within specified ranges of operating conditions (firing rate and oxygen content) as detailed in Part 5. The ranges shall be established by utilizing data from District-approved source tests. (Basis: Regulation 9-10-502)

A. The NOx Box for units with a maximum firing rate of 25 MMBtu/hr or more shall be established using the procedures in Part 4.

B. The NOx Box for units with a maximum firing rate less than 25MMBtu/hr shall be established as follows: High-fire shall be the maximum rated capacity. Low-fire shall be 20% of the maximum rated capacity (except for S-35, for which the low-fire shall be 8% of the maximum rated capacity). There shall be no maximum or minimum O2.

*4. The Owner/Operator shall establish the initial NOx box for each source subject to Part 3 by December 1, 2005. The NOx Box may consist of two operating ranges in order to allow for operating flexibility and to encourage emission minimization during standard operation. (Basis: Regulation 9-10-502) The procedure for establishing the NOx box is

A. Conduct District approved source tests for NOx and CO, while varying the oxygen concentration and firing rate over the desired operating ranges for the furnace;

B. Determine the minimum and maximum oxygen concentrations and firing rates for the desired operating ranges (Note that the minimum O_2 at low-fire may be different than the

minimum O_2 at high-fire. The same is true for the maximum O_2). The Owner/Operator shall also verify the accuracy of the O2 monitor on an annual basis.

C. Determine the highest NOx emission factor (lb/MMBtu) over the preferred operating ranges while maintaining CO concentration below 200 ppm; the Owner/Operator may choose to use a higher NOx emission factor than tested.

D. Plot the points representing the desired operating ranges on a graph. The resulting polygon(s) are the NOx Box, which represents the allowable operating range(s) for the furnace under which the NOx emission factor from part 5a is deemed to be valid.

1). The NOx Box can represent/utilize either one or two emission factors.

2) The NOx Box for each emission factor can be represented either as a 4- or 5-sided polygon The NOx box is the area within the 4- or 5-sided polygon formed by connecting the source test parameters that lie about the perimeter of successful approved source tests. The source test parameters forming the corners of the NOx box are listed in Part 5.

E. Upon establishment of each NOx Box, the Owner/Operator shall prepare a graphical representation of the box. The representation shall be made available on-site for APCO review upon request. The box shall also be submitted to the BAAQMD with permit amendments.

*5. Except as provided in part 5B & C, the Owner/Operator shall operate each source within the NOx Box ranges listed below at all times of operation. This part shall not apply to any source that has a properly operated and properly installed NOx CEM. (Basis: Regulation 9-10-502)

A. NOx Box ranges. The limits listed below are based on a calendar day averaging period for both firing rate and O2%.

Source No.	Emission Factor (lb/MMBtu)	Min O_2 at Low Firing (O2% , MMBtu/hr)	Max O_2 at Low Firing (O2% , MMBtu/hr)	Min O_2 at High Firing (O2% , MMBtu/hr)	Mid O_2 at Mid/High Firing (polygon) (O2% , MMBtu/hr)	Max O_2 at High Firing (O2% , MMBtu/hr)
Plant 12626						
7	0.35	3, 16	17, 10	6, 30	N/A	11, 38
20	0.28	2, 19	12, 23	2, 37	2, 50	5, 47
24	0.757	11,7	14, 8	3, 27	6, 12	7, 29
26	0.194	13, 9	17, 7	6, 21	8, 17	12, 24
34	0.250	17, 2	20, 2	4, 26	N/A	7, 38
35	0.200	(Note 1), 1	(Note 1), 1	(Note 1), 14	N/A	(Note 1), 14
173	0.050	(Note 1), 4	(Note 1), 4	(Note 1), 20	N/A	(Note 1), 20

Source No.	Emission Factor (lb/MMBtu)	Min O_2 at Low Firing (O2% , MMBtu/hr)	Max O_2 at Low Firing (O2% , MMBtu/hr)	Min O_2 at High Firing (O2% , MMBtu/hr)	Mid O_2 at Mid/High Firing (polygon) (O2% , MMBtu/hr)	Max O_2 at High Firing (O2% , MMBtu/hr)
Plant A0901 (13193)						
S-20	0.055	(Note 1), 2.9	(Note 1), 2.9	(Note 1), 14.7	N/A	(Note 1), 14.7
S-21	0.055	(Note 1), 2.9	(Note 1), 2.9	(Note 1), 14.7	N/A	(Note 1), 14.7

Note 1: Per Part 3B, Oxygen limits do not apply to sources with maximum firing rates less than 25 MMBtu/hr.

B. Part 5A does not apply to low firing rate conditions (i.e., firing rate less than or equal to 20% of the unit's rated capacity), during startup or shutdown periods, or periods of curtailed operation (ex. during heater idling, refractory dry out, etc.) lasting 5 days or less. During these conditions the means for determining compliance with the refinery wide limit shall be accomplished using the method described in 9-10-301.2 (i.e. units out of service & 30-day averaging data).

C. Part 5A does not apply during any source test required or permitted by this condition. See Part 7 for the consequences of source test results that exceed the emission factors in Part 5.

*6. NOx Box Deviations. (Basis: Regulation 9-10-502)

A. The Owner/Operator may deviate from the NOx Box (either the firing rate or oxygen limit) provided that the Owner/Operator conducts a District approved source test that reasonably represents the past operation outside of the established ranges. The source test representing the new conditions shall be conducted no later than the next regularly scheduled source test period, or within eight months, whichever is sooner. The source test results will establish whether the source was operating outside of the emission factor utilized for the source. The source test results shall be submitted to the District Source Test Manager within 60 days of the test.

1) Source Test = < Emission Factor

If the results of this source test do not exceed the higher NOx emission factor in Part 5, or the CO limit in Part 9, the unit will not be considered to be in violation during this period for operating out of the "box."

The facility may submit an accelerated permit program permit application to request an administrative change of the permit condition to adjust the NOx Box operating range(s), based on the new test data.

2) Source Test > Emission Factor

If the results of this source test exceed the permitted emission concentrations or emission rates then the actions described below must be followed:

▪ Utilizing the measured emission concentration or rate, the Owner/Operator shall perform an assessment of compliance with Regulation 9-10-301 as follows:

1. "Out of Box" Condition - for the day(s) in which the "out of box" condition(s) occurred, the Owner/Operator shall ensure sufficient NOx IERCs are provided to ensure the facility is in compliance with the refinery wide limit. The Owner/Operator will be in violation of Regulation 9-10-301 for each day there are insufficient NOx IERCs provided to bring the refinery wide average into compliance with Regulation 9-10-301.

2. Within the Box - for the case when the source is operated within the "box" but source test results indicate a higher emission factor, the Owner/Operator shall apply the higher emission factor retroactively to the date of the previous source test and provide sufficient NOx IERCs for that time period to ensure the facility is in compliance with the refinery wide limit specified in Regulation 9-10-301. The Owner/Operator will be in violation of Regulation 9-10-301 for each day there are insufficient NOx IERCs provided to bring the refinery wide average into compliance with Regulation 9-10-301.

▪ The facility may submit a permit application to request an alteration of the permit condition to change the NOx emission factor and/or adjust the operating range, based on the new test data.

B. Reporting. The Owner/Operator must report conditions outside of box within 96 hours of occurrence.

*7. For each source subject to Part 3, the Owner/Operator shall conduct source tests on the schedule listed below. The source tests are performed in order to measure NOx, CO, and O2 at the as-found firing rate, or at conditions reasonably specified by the APCO. The source test results shall be submitted to the District Source Test Manager within 60 days of the test. (Basis: Regulation 9-10-502)

A. Source Testing Schedule

1) Heater < 25 MMBtu/hr

Annual source test. The time interval between source tests shall not exceed 16 months. The source test results shall be submitted to the District Source Test Manager within 60 days of the test.

2) Heaters >= 25 MMBtu/hr

Two source tests per consecutive 12 month period. The time interval between source tests shall not exceed 8 months and not be less than 5 months apart. The source test results shall be submitted to the District Source Test Manager within 60 days of the test.

3) If a source has been shutdown longer than the period allowed between source testing periods (e. g. <25 MMBtu/hr - > 16 mos or > 25 MMBtu/hr - > 8 mos), the owner/operator shall conduct the required source test within 30 days of start up of the source.

B. Source Test Results > NOx Box Emission Factor

If the results of any source test under this part exceed the permitted concentrations or emission rates the Owner/Operator shall follow the requirements of Part 6A2. If the Owner/Operator chooses not to submit an application to revise the emission factor, the Owner/Operator shall conduct another Part 7 source test, at the same conditions, within 90 days of the initial test.

*8. For each source listed in Part 1 with a NOx CEM installed that does not have a CO CEM installed pursuant to Part 9, the Owner/Operator shall conduct semi-annual District approved CO source tests at as-found conditions. The time interval between source tests shall not exceed 8 months. District conducted CO emission tests associated with District-conducted NOx CEM field accuracy tests may be substituted for the CO semi-annual source tests. (Basis: Regulation 9-10-502)

*9. For any source listed in Part 1 with a maximum firing limit greater than 25 MMBtu/hr for which any two source test results over any consecutive five year period are greater than or equal to 200 ppmv CO at 3% O2, the Owner/Operator shall properly install, properly maintain, and properly operate a CEM to continuously measure CO and O2. The Owner/Operator shall install the CEM within the time period allowed in the District's Manual of Procedures. (Basis: Regulation 9-10-502, 1-522)

*10. In addition to records required by Regulation 9-10-504, the Owner/Operator must maintain records of all source tests conducted to demonstrate compliance with Parts 1 and 5. These records shall be kept on site for at least five years from the date of entry in a District approved log and be made available to District staff upon request. (Basis: Regulation 9-10-504)

End of Condition

Recommendation

Grand the change of permit condition to Valero for the following sources at Plant 12626:

S-7 F-103 Jet Fuel HF, 53 MMBtu/hr
S-20 F-104 Naphtha HF, 62 MMBtu/hr
S-21 F-301 Hydrogen, 614 MMBtu/hr
S-22 F-351 Hydrogen, 614 MMBtu/hr
S-23 F-401 Gas Oil HC, 200 MMBtu/hr
S-24 F-601 Cat Feed HF, 33 MMBtu/hr
S-25 F-701 Cat Feed, 230 MMBtu/hr
S-26 F-801 HCN HF, 33 MMBtu/hr
S-30 F-2901 PFR Preheat, 463 MMBtu/hr total
S-31 F-2902 PFR Preheat, 463 MMBtu/hr total
S-32 F-2903 PFR Preheat, 463 MMBtu/hr total
S-33 F-2904 PFR Preheat, 463 MMBtu/hr total
S-34 F-2905 PFR Regen Gas, 74 MMBtu/hr
S-35 F-2906 PFR React Gas, 14 MMBtu/hr
S-40 SG-2301 Steam Gen, 218 MMBtu/hr
S-41 SG-2302 Steam Gen, 218 MMBtu/hr
S-173 F-902 Coker Steam Superheat, 20 MMBtu/hr
S-220 F-4460 MRU Hot Oil, 351 MMBtu/hr

by date
Xuna Cai
Air Quality Engineer

EVALUATION REPORT
Valero Refining Company
Application #22710 - Plant #12626

3400 E. Second St.
Benicia, CA 94510

I. BACKGROUND

In November 2005, Valero entered into a Clean Air Act Settlement with the U.S. Environmental Protection Agency and several state air quality agencies. This settlement is more commonly known as the "Consent Decree". The Consent Decree requires that the following source comply with certain SO2 continuous emission monitor performance requirements.

S-6 Fluid Coker unit abated by S-1059 and/or S-1060 Pipestill Furnaces, F-105/F-106 and Selective Catalyst Reduction Systems A-1059 and/or A-1060

Source S-6, Fluid Coker, is subject to the SO2 standards per the Consent Decree, Paragraphs 67 and 90 as shown in the excerpts from the Consent Decree shown below.

VI. SO2 Emission Reduction from FCCU and McKee Sulfuric Acid Plant

Program Summary: ***Valero and Tesoro shall implement a program to reduce SO2 emissions from their FCCUs, which shall include the installation of wet gas scrubber (WGS) technology systems on selected FCCU and otherwise limiting SO2 emissions from other FCCUs, including, in certain cases, through the use of SO2-reducing catalyst additives and/or hydrotreating. Valero shall also install a scrubber to reduce SO2 emissions from the McKee Refinery Sulfuric Acid Plant.***

B. Benicia

67. By no later than the turnaround currently scheduled for the Benicia Fluid Coker during 2011, Valero shall complete installation and, within one hundred eighty (180) days thereafter, begin operation of a regenerative scrubber to control SO2 emissions from the Benicia Fluid Coker. Valero shall design and operate the regenerative scrubber and comply with emission limits of no greater than 25 ppmvd, measured as a 365-day rolling average and 50 ppmvd, measured as a 7-day rolling average, both at 0% O2 or, in the alternative, Valero shall construct and operate such a scrubber and comply with concentration-based emission limits based upon at least a 95% reduction in SO2 emissions attributable to the Benicia Fluid Coker, such emission limits are to be established by EPA after Valero conducts an optimization study and demonstration program under Paragraph 88. Notwithstanding the foregoing, if Valero demonstrates to EPA's satisfaction that the total installed cost for such a regenerative scrubber is more than 105% of the current (at the time of design) total installed cost for a regenerative scrubber designed to achieve a 93% reduction in SO2 emissions attributable to the Benicia Fluid Coker and upon EPA approval of such design, in consideration of Appendix L and Valero's making incremental design improvements that result in maximum SO2 control and a total installed cost of no more than 105% of the total installed cost for a regenerative scrubber designed to achieve a 93% reduction in SO2 emission, Valero shall construct and operate such scrubber and comply with concentration emission limits based upon at least a 93% reduction in SO2 emissions attributable to the Benicia Fluid Coker, such emission limits are to be established by EPA after Valero conducts an optimization study and demonstration program under Paragraph 88. If Valero determines that the regenerative scrubber is not viable, Valero shall instead install a conventional WGS to reduce SO2 emissions from the Benicia Fluid Coker; provided however that the conventional WGS must be designed and operated and shall then comply with an SO2 emission limit attributable to the Benicia Fluid Coker of no greater than 25 ppmvd, measured as a 365-day rolling average and 50 ppmvd, measured as a 7-day rolling average, both at 0% O2.

N. Monitoring Emissions and Demonstrating Compliance

90. CEMS will be used to demonstrate compliance with the respective SO2 concentration emission limits established pursuant to this Part VI. Valero and Tesoro, as applicable, shall make CEMS data available to EPA and any appropriate Plaintiff-Intervener upon demand as soon as practicable. Except as specified in Paragraph 93, Valero shall install, certify, calibrate, maintain and operate all CEMS required by this paragraph in accordance with the provisions of 40 C.F.R. § 60.13 that are applicable to CEMS (excluding those provisions applicable only to continuous opacity monitoring systems) and Part 60, Appendices A and F, and the applicable performance specification test of 40 C.F.R. Part 60, Appendix B. With respect to 40 C.F.R. Part 60 Appendix F, in lieu of the requirements of 40 C.F.R. Part 60, Appendix F §§ 5.1.1, 5.1.3 and 5.1.4, the Companies must conduct either a RAA or a RATA on each CEMS at least once every three (3) years. The Companies must also conduct a CGA each calendar quarter during which a RAA or a RATA is not performed. With respect to their Benicia and Golden Eagle Refineries, Valero and Tesoro, as applicable, may conduct a FAT, as defined in BAAQMD regulations or procedures, in lieu of the required RAA or CGA.

93. Within 90 days of the Date of Entry, Valero shall submit to EPA a complete site specific monitoring plan for utilizing a combination of SO_2/TRS CEMS upstream of the CO boiler at the Benicia Refinery. A new CEMS must be installed in the existing ductwork upstream of the CO boiler in order to monitor SO_2/TRS in the FCCU flue gas prior to mixing with the Coker Unit flue gas. The existing ductwork configuration may make it impossible to meet all Appendix A requirements for CEMS locations. Valero will locate the CEM in the most appropriate location available.

Valero installed a regenerative scrubber under District's Application # 16973, Valero Improvement Project Amendment. In this application, Valero requests to incorporate into the District's condition the monitor accuracy test requirement that allow Valero to perform RATA on each CEM at least once every three years as specified in Paragraph 90 of the Consent Decree instead of once every year as required by 40 CFR Part 60, Appendix F. The District will grant this request as required by Valero's Consent Decree.

II. EMISSION CALCULATIONS

There are no changes in emissions due to this application. This application is to add the accuracy test requirements on SO2 CEMs and will not result in a decrease or an increase in emissions.

III. PLA/NT CUMULATIVE INCREASE

There are no net changes to the plant cumulative emissions.

IV. TOXIC SCREENING A/NALYSIS

This proposed change of conditions (adding new permit conditions) will not cause any increase of toxic emissions. Therefore, a toxic risk screen is not required per Regulation 2-5.

V. BEST AVAILABLE CONTROL TECHNOLOGY

BACT is triggered for new or modified sources that emit criteria pollutants in excess of 10 lbs/day. However, Regulation 2-1-234 defines a modified source as one that results in an increase in daily or annual emissions of a regulated air pollutant. For this application, there is no change in emissions. Therefore, BACT does not apply per Regulation 2-2-301.

VI. OFFSETS

Offsets are not required for this project because there is no emission increase for the proposed change in conditions per Regulation 2-2-302.

VII. STATEMENT OF COMPLIA/NCE

Source S-6, Fluid Coker Unit

This application will not change the compliance for S-6. This application only adds the testing requirement for SO2 CEM to make sure the monitor is operating properly. Compliance with Regulation 1, Regulation 6, Rule 1 (and SIP Regulation 6), Regulation 9, Rule 1 and 40 CFR 63 Subpart UUU (Petroleum Refinery MACT II) will not be changed.

This project is considered to be categorically exempt under the District's CEQA Regulation 2-1-312.1 because it is an application for a change of conditions for existing permitted sources and does not involve any increases in emissions or physical modifications.

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

IX. CONDITIONS

Condition # 20820, VIP Application No. 5864, Amended by VIP Amendments, Application No. 16937, Amended by Application No. 15606 to revise the NMOC baseline, Amended by Application No. 22710 to incorporate Consent Decree SO2 CEMS requirements.

PS FURNACES (S-1059 A/ND S-1060)

61. The Owner/Operator shall abate emissions from Sources S-5, FCCU, and S-6, Fluid Coker, with PS Furnaces, S-1059 and/or S-1060, which are followed by Pre-scrubber/Regenerative Amine Scrubber, A-1047 during all periods of operation, except during start-up, shutdown, bypass and emergency bypass periods as defined in Part 65. Vapor flow rate from A-1047 shall not exceed 360,000 SCFM, dry, at 0% O2, averaged over any 365 consecutive days. [Basis: Cumulative Increase]

62. The Owner/Operator shall fire only refinery fuel gas, CO gas and/or natural gas in the S-1059 and S-1060 PS Furnaces. [Basis: BACT]

63. Total combustion emissions from S-1059 and S-1060 PS Furnaces, shall not exceed the following emissions limits, except as allowed in Parts 65, 66, 67 and 68: [Basis: Cumulative Increase, BACT, Offsets]

Emissions Limit Table for Parts 63, 66, 67 and 68

Pollutant	Concentrations	Emissions
NOx	42.8 ppmvd @ 3% O2 365-day avg.	610.6 tpy[2]
NOx	85.6 ppmvd @ 3% O2 7-day avg.	6,194 lbs/day, 7-day avg.
NOx	150 ppmvd[1] @ 3% O2 1-calendar day avg.	10,344 lbs/day[1]
SO2	21.4 ppmvd @ 3% O2 365-day avg.	393.2 tpy
SO2	42.8 ppmvd @ 3% O2 7-day avg.	4,309 lbs/day, 7-day avg.
SO2	440 ppmvd[1] @ 3% O2 1-calendar day avg.	22.1 ton/day[1]
CO	35.2 ppmvd @ 3% O2 365-day avg.	209.5 tpy
CO	100 ppmvd[1] @ 3% O2 1-calendar day avg.	4,402 lbs/day[1]

PM10	40 lbs/hr[1] as determined by BAAQMD ST-15 or EPA Method 17 in conjunction with EPA Methods 1, 2,3 and 4	114.8 tpy
NMOC[3]	10 ppmvd as tested by BAAQMD modified Method ST-7 or a combination of EPA Methods 18 and 25A	14.47tpy

[1] These values may be adjusted based on source test results as specified in Parts 66, 67 and 68.
[2] Emissions include startup, shutdown, emergency bypass or bypass scenarios.
[3] NMOC: Non-methane organic compounds

a. The Owner/Operator shall monitor compliance with emissions limits above by using District approved continuous emission monitor (CEM) data for NOx, CO, O2 and SO2, source test data for PM10 and NMOC, and A-1047 flow rates. [Basis Monitoring, BACT]
b. The Owner/Operator shall install, calibrate, maintain, and operate a District-approved continuous opacity monitoring system (COMS) for reasonable assurance of compliance with Regulation 6-310 or submit an alternative monitoring plan (AMP) for opacity at the outlet of the FCCU/CKR stack. The owner/operator shall operate A-1047 Pre-scrubber/Regenerative Amine Scrubber that abate S-1059 and S-1060 PS Furnaces with no more than one 6-minute average in an hour that exceeds 30% opacity. An exceedance of the opacity limit shall be deemed an exceedance of the particulate limit in Regulation 6-1-310. [Basis: Regulation 2-6-503]

c. The Owner/Operator shall submit an annual report to the Compliance and Enforcement Division and the Engineering Division no later than 45 days following the end of each calendar year. The report shall include the actual daily emissions based on CEM data for NOx, CO and SO2, and A-1047 flow rate. In addition, the report shall include the estimated daily emissions of PM10 and NMOC, based on emission factors (lb/MMdscf) determined from source test data and applied to the actual average A-1047 flow rate. Also, the report shall include the annual totals of each pollutant to demonstrate compliance with the above limits. The report shall also include the total daily heat input for S-1059 and S-1060 PS Furnaces. [Basis: Reporting Requirements]
d. Except during periods of startup, shutdown, bypass and emergency bypass as defined in Part 65, the Owner/Operator shall maintain ammonia emissions (ammonia slip) from the SCR units (A-1059 and A-1060) at or below 10 ppmv of ammonia, dry, corrected to 3% oxygen, averaged over any rolling consecutive 3-hour period. [Basis: Toxics, BACT]
e. The Owner/Operator shall perform an initial source test in accordance with the requirements set forth in Part 73 to demonstrate compliance with the ammonia limitation in part 63d. [Basis: Toxics, Source Tests]

64. The Owner/Operator shall equip the S-1059 and S-1060 PS Furnaces with a District approved continuous fuel flow meter and recorder in order to determine refinery fuel gas consumption. (Prior to the Permit to Operate's issuance, the District will determine whether the fuel flow meter is a parametric monitor or not). [Basis: Monitoring]

65. Definitions of Startup, shutdown, emergency bypass and bypass:
    a. Startup of the SCRs is defined as the introduction of CO gas from S-5 FCCU or S-6 CKR to S-1059 and S-1060 PS Furnaces, not the beginning of fuel gas firing. The start up period of A-1059 and A-1060 SCRs may last up to 12 hours. NOx emissions on a concentration and mass basis will not be included in the 1-day, 7-day and 365-day average for this scenario.
    b. Shutdown of the SCRs is defined as the cessation of CO fuel into S-1059 and S-1060 PS Furnaces. The shutdown period of A-1059 and A-1060 SCRs may last up to 8 hours. NOx emissions on a concentration and mass basis will not be included in the 1-day, 7-day and 365-day average for this scenario.

c. Emergency bypass of the SCRs is defined as when both SCR units are damaged and the Owner/Operator must replace the catalyst. The emergency bypass of A-1059 and A-1060 SCRs may last up to 7 days (168 hours) to permit catalyst replacement and restoration of abatement efficiency. NOx emissions on a concentration and mass basis will not be included in the 1-day, 7-day and 365-day average for this scenario.
d. Bypass of the SCRs is defined as when loading coke into the CKR before startup or unloading coke following a CKR shutdown, while the FCCU is operating or FCCU is not operating. The bypass of A-1059 and A-1060 SCRs may last up to 96 hours to avoid coke dust entrainment in the PS Furnaces and SCRs. NOx emissions on a concentration and mass basis will be included in the 365-day average, but will be excluded in the 1-day, and 7-day average for this scenario. [Basis: Definition, Cumulative Increase]

66. Except during periods of startup, shutdown, bypass and emergency bypass as defined in Part 65, the Owner/Operator shall maintain emissions from S-1059 and S-1060 PS Furnaces at or below the following levels: (a) Nitrogen Oxides (NOx) emissions – 42.8 ppmv, dry, corrected to 3% oxygen, any 365 consecutive days average, and (b) Nitrogen Oxides (NOx) emissions – 85.6 ppmv dry, corrected at 3% oxygen, any 7–calendar days average, and (c) Nitrogen Oxides (NOx) emissions – 150 ppmv dry, corrected to 3% oxygen, any 1-calendar day average. The daily limit shall be established based on the results of a District-approved source test or District-certified CEM data. The test report must be submitted to the District within 150 days of initial startup of S-1059 and S-1060. [Basis: BACT]

67. Except during periods of startup and shutdown, bypass and emergency bypass as defined in Part 65, the Owner/Operator shall maintain emissions from S-1059 and S-1060 PS Furnaces at or below the following levels: (a) SO2 emissions – 21.4 ppmv, dry, corrected to 3% oxygen, any 365 consecutive days average, and (b) SO2 emissions – 42.8 ppmv dry, corrected at 3% oxygen, any 7–calendar days average, and (c) SO2 emissions – 440 ppmv dry, corrected to 3% oxygen, any 1-calendar day average. The daily limit shall be established based on the results of a District-approved source test or District-certified CEM data. The test report must be submitted to the District within 150 days of initial startup of S-1059 and S-1060. [Basis: BACT]

68. Except during periods of startup and shutdown, bypass and emergency bypass as defined in Part 65, the Owner/Operator shall maintain emissions from S-1059 and S-1060 PS Furnaces at or below the following levels: (a) CO emissions – 100 ppmv, dry, corrected to 3% oxygen, as determined by CEM, 1-calendar day average, and (b) PM10 emissions - 40 lbs/hr, as tested by BAAQMD Method ST-15 or EPA Method 17 in conjunction with EPA Methods 1, 2, 3 and 4 and (c) NMOC emissions – 14.47tons/yr and 10 ppmv, dry, as tested by BAAQMD modified Method ST-7 or a combination of EPA Methods 18 and 25A. The CO limit shall be established based on the results of a District-approved source test or District-certified CEM data. The PM10 may be adjusted based on source test results or more reliable information. The test report must be submitted to the District within 150 days of initial startup of S-1059 and S-1060. [Basis: BACT]

69a. For sources S-1059 and S-1060, the Owner/Operator shall install, calibrate, maintain, and operate a District-approved continuous emission monitor and recorder for NOx, SO2, CO, and O2. The Owner/Operator shall install, calibrate, maintain, and operate a District-approved flow meter at the outlet of the A-1047 FCCU/CKR stack. (This is not a parametric monitor as defined in Regulation 1-238). [Basis: CEM Monitoring]

69b. CEMS will be used to demonstrate compliance with the respective SO2 concentration emission limits established pursuant to Part VI of the Consent Decree. Valero shall make CEMS data available

to EPA and any appropriate Plaintiff-Intervener upon demand as soon as practicable. Except as specified in Paragraph 93 of the Consent Decree, Valero shall install, certify, calibrate, maintain and operate all CEMS required by this paragraph in accordance with the provisions of 40 CFR § 60.13 that are applicable to CEMS (excluding those provisions applicable only to continuous opacity monitoring systems) and Part 60, Appendices A and F, and the applicable performance specification test of 40 CFR Part 60, Appendix B. With respect to 40 CFR Part 60 Appendix F, in lieu of the requirements of 40 CFR Part 60, Appendix F §§ 5.1.1, 5.1.3 and 5.1.4, Valero must conduct either a RAA or a RATA on each CEMS at least once every three (3) years. Valero must also conduct a CGA each calendar quarter during which a RAA or a RATA is not performed. With respect to their Benicia Refinery, Valero may conduct a FAT, as defined in BAAQMD regulations or procedures, in lieu of the required RAA or CGA. [Basis: EPA Consent Decree, Paragraph 90]

70. No later than 90 days from the startup of the S-1059, S-1060, A-1059, A-1060 and A-1047, the Owner/Operator shall conduct a District-approved source test to determine initial compliance with the limits in parts 63, 66, 67, and 68 for NOx, SO2, CO, NMOC, and PM10. The Owner/Operator shall conduct the source tests in accordance with Part 73. The Owner/Operator shall submit the source test results to the Source Test Section and Engineering Division no later than 150 days after the initial startup date. [Basis: Compliance determination via source tests]

71. The Owner/Operator shall maintain the total heat input for S-1059 at or below 4,634,400 million BTUs (HHV) during any rolling 12-month period, and the total heat input for S-1060 at or below 2,268,840 million BTUs (HHV) during any rolling 12-month period. [Basis: Cumulative Increase]

72. The Owner/Operator shall conduct a District-approved source test at least once per quarter to demonstrate subsequent compliance with the NMOC and PM10 mass rates specified in part 63. The quarterly source tests shall be conducted at least 2 months apart and not more than 4 months apart. The Owner/Operator shall submit the source test results to the Source Test Section and Engineering Division no later than 60 days after the source test. After acquiring one year of source test data, the Owner/Operator may switch to semi-annual or annual source testing if test variability is low upon District's approval. [Basis: Periodic Monitoring]

73. The Owner/Operator shall obtain approval for all source test procedures from the District's Source Test Section prior to conducting any tests. The owner/operator shall comply with all applicable testing requirements for continuous emissions monitors as approved by the District's Source Test Section. The owner/operator shall notify the District's Source Test Section, in writing, of the source test protocols and projected test dates at least 7 days prior to testing. [Basis: Source test compliance verification and accuracy]

SULFURIC ACID MIST (SAM)

74. The Owner/Operator of sources S-1059, S-1060, A-1059, A-1060, A-1047, and S-1061 shall not emit more than 7 tons per year of sulfuric acid mist (SAM). [Basis: PSD]

75. Within 90 days of initial startup, the Owner/Operator shall conduct a District approved source test to demonstrate compliance with the SAM emissions in Part 74. For purposes of SAM, the applicant shall also test for SO2, SO3, SAM and ammonium sulfates. The Owner/Operator shall conduct the source tests in accordance with Part 73. The test results shall be forwarded to the District within 150 days of the initial startup date. The test should verify emission compliance at 80% or more of maximum firing on CO and refinery fuel gas for S-1059, S-1060 PS Furnaces and at 80% or more of maximum firing on refinery fuel gas for S-1061 Hydrogen Reformer Furnace.

If Sources S-1059, S-1060 and S-1061 cannot achieve 80% or more of maximum firing on CO and/or refinery fuel within 90 days of initial startup, the Owner/Operator shall conduct another District's approved source test no later than 2 months after operating in that mode to demonstrate compliance with the SAM emissions in Part 74. [Basis: compliance demonstration, PSD avoidance]

Contemporaneous Emissions reduction credit

76. The owner/operator of sources S-3, S-4, and A-1 through A-5 shall completely shutdown the equipment no later than 90 days after startup of S-1059 and S-1060 PS Furnaces, A-1059, A-1060 PS Furnace SCRs, A-1047 FCCU/CKR Prescrubber/Regenerative Amine Scrubber. The owner/operator shall enter into the record log the date when the unit was shutdown.

    The owner/operator of sources S-21 and S-22 shall completely shutdown one of the units no later than 90 days after startup of S-1061 and S-1062 Hydrogen Reformer Furnace and Hydrogen Unit with PSA. The owner/operator shall enter into the record log the date when the unit was shutdown. (Basis: offsets)

    1. The owner/operator shall conduct the accuracy tests listed below on the CEMS used to comply with Part 6 unless that CEMS is otherwise subject to the requirements of 40 CFR 60 Subparts A and J. These accuracy tests are allowed in lieu of the requirements of 40 CFR Part 60, Appendix F §§ 5.1.1, 5.1.3, and 5.1.4.
        a. Conduct either a RAA or a RATA on each CEMS at least once every three years.
        b. Conduct a CGA on each CEMS each calendar quarter during which a RAA or a RATA is not performed.
        c. Conduct a FAT, as defined in BAAQMD regulations or procedures, if desired, in lieu of any required RAA or CGA.

        (Basis: EPA Consent Decree §§ 121)

IX. RECOMMENDATION

Issued a condition change to the Permit to Operate to Valero for the following equipment:

S-6 Fluid Coker unit abated by S-1059 and/or S-1060 Pipestill Furnaces, F-105/F-106 and Selective Catalyst Reduction Systems A-1059 and/or A-1060

_____

Thu H. Bui
Senior Air Quality Engineer
Permit Services Division
Date: _____

THB:disk-t\Valero\22710e

Evaluation Report
A/N 22998
G# 6764 (Plant 12626, Source 165)
Valero Refinery, 3400 E. 2nd St., Benicia

Background

Valero Refining has applied to increase the gasoline throughput at their existing gasoline dispensing facility at the Benicia refinery. No hardware changes are proposed under this application.

Valero Refining currently operates a 6,000 gallon underground gasoline tank with one VST EVR gasoline nozzle equipped with OPW EVR two-point Phase I and a VST EVR Phase II vapor recovery system with the Veeder-Root Vapor Polisher. This equipment is permitted as Source 165 at Plant 12626 and is subject to condition #22323, which limits annual gasoline throughput to 92,400 gallons per year and #20666 for the OPW EVR Phase I system and #24298 for the VST EVR Phase II system. They also operate a 10,000 gallon diesel tank with one nozzle. This equipment is exempt from District permit and vapor recovery requirements.

Valero Refining is requesting that their throughput limit be raised to 111,000 gal/yr, an increase of 20,600 gal/yr.

Emissions

This request will result in the following emissions increase:

(20.6 Mgal/yr) (0.67 #/Mgal) = 13.8 # VOC/yr increase

New Source Review

The emissions increase from this project is less than 10 # VOC/day. Per Section 2-2-301, BACT is not required for this project.

Valero has a cumulative increase > 35 tpy POC. Per Section 2-2-302, they are required to provide emissions offsets for any increase at a 1.15:1 ratio.

Required offsets: (13.8 # VOC) (1.15) = 15.9 # VOC offsets

In an email dated June 17th, 2011, Valero Refining authorized the District to deducted these offsets (in addition to offsets for other projects deferred under Section 2-2-421) to be deducted from Banking Certificate #833.

Permit Conditions

Condition #22323 will be modified as follows:

COND# 22323 ----------

1. Pursuant to BAAQMD Toxic Section Policy, the owner/operator shall ensure that the annual gasoline

throughput does not exceed ~~92,000~~ 111,000 gallons in any consecutive 12 month period.

Recommendation

All fees have been paid. Recommend that an A/C be issued for the above project.

By _____ date_____

Scott Owen
Supervising AQ Engineer

EVALUATION REPORT
VALERO REFINING COMPA/NY
Application #23701 - Plant # 12626

3400 East Second St.
Benicia, CA 94510

I. BACKGROUND

Valero has applied for an alteration to the Permit to Operate for the following equipment:

S-22 Hydrogen Reformer Furnace, F-351, John Zinc, Ultra Low NOx COOLstars-15, maximum 614 MMBTU/hr

Valero plans to replace all 980 of existing low NOx burners with 980 new ultra low NOx burners without exceeding the maximum condition limit. The new burners are designed to reduce routine maintenance for the burners and refractory, improve combustion efficiency and maintain a better margin of compliance with the NOx limits set forth in Regulation 9-10-301 and Permit Condition # 24197, Parts 31 and 32. The maximum heat input rate of S-22 is limited in Condition #24197, Part 37 for 106 million therms (combined S-21 from Train A and S-22 from Train B). The maximum firing rates of new burners will be equal to the existing limits, which is 614 MMBtu/hr as specified in Condition # 24197, Part 38. Since replacing burners is qualified as an alteration for S-22 as defined in Regulation 2-1-233.1, this project will not be subject to New Source Review of Regulation 2-2.

Valero requested the Authority to Construct be extended for 6 years since the cost of the ultra low NOx burners are high. Valero will be replacing approximately 140 burners per year for 6 years. This request will be granted as long as S-22 continues to comply with BACT or comply with Regulation 2-1-407.3 if the substantial use of the authority to construct has begun.

II. EMISSION CALCULATIONS

There are no emission increases of any air pollutant for the alterations covered by this application. The maximum firing rate for the replacement burners will be equal to or less than the existing permit condition limit for each furnace.

III. PLA/NT CUMULATIVE INCREASE SINCE 4/5/1991

The cumulative increase for this application is ZERO for all pollutants.

IV. TOXIC SCREENING A/NALYSIS

Toxic emissions will not increase as a result of this application. Therefore, a toxic risk screening analysis is not required per Regulation 2-5.

V. BEST AVAILABLE CONTROL TECHNOLOGY

This application has no emission increase. BACT does not apply to S-22 for alteration.

VI. OFFSETS

Offsets are not triggered since there are no emission increases from this application per Regulation 2-2-302.

VII. STATEMENT OF COMPLIA/NCE

Source S-22 is subject to and expected to comply with Regulation 9-10 which meet 0.033 lb/MMBtu of NOx and 400 ppmv of CO requirements.

This project is considered to be ministerial under the District's CEQA Regulation 2-1-311 and therefore is not subject to CEQA review. The engineering review for this project requires only the application of standard permit conditions and standard emission factors in accordance with Permit Handbook Chapter 2.1.

This project is also considered to be categorically exempt under the District's CEQA Regulation 2-1-312.2 and 2-1-312.3, and therefore not subject to CEQA review. This permit application is to install air pollution or abatement equipment to aid compliance with the NOx and CO limit of Regulation 9-10.

Valero is not located within 1,000 feet of any school. The public notification requirements of Regulation 2-1-412 are not required.

The permit may or may not trigger PSD due to Greenhouse Gases Emissions. The applicant submitted a PSD Applicability Analysis using "NSR Reform" methods (*see* 67 Fed. Reg. 80,186). In accordance with the March 8, 2011 Partial PSD Delegation Agreement, Section III.1, the District does not have the authority to make PSD applicability determinations using NSR Reform methods. Per the delegation agreement, EPA shall make the PSD applicability determination and issue any necessary PSD permits if a source seeks a PSD applicability determination using NSR Reform methods.

The District sent the letter dated January 31, 2012 to EPA along with the PSD applicability determination from Valero for the burner replacement project. This letter serves as a courtesy notification to EPA that Valero has requested to use a PSD Applicability Analysis based on NSR Reform methods, which is subject to EPA review.

XII. CONDITIONS

The District will not impose any new permit conditions on these sources. All existing conditions will remain in effect. The maximum firing rates are already limited by permit condition ID# 24197. An initial source test for NOx and CO is already required by Reg. 9-10-501.

XIII. RECOMMENDATION

Issue a conditional Authority to Construct to replace burners to Valero for the following equipment:

S-22 Hydrogen Reformer Furnace, F-351, John Zinc, Ultra Low NOx COOLstars-15, maximum 614 MMBTU/hr

_____

Thu H. Bui
Senior Air Quality Engineer
Engineering Division
Date: _____

THB:E:\Valero\23701\1-31-2012

EVALUATION REPORT
VALERO REFINING COMPA/NY
Application #23841 - Plant # 12626

3400 East Second St.
Benicia, CA 94510

I. BACKGROUND

Valero has applied for a condition change to the Permit to Operate for the following equipment:

S-129 Crude/Product Dock abated by A-29, Adsorption Vapor Recovery System

Condition 1709 was written for S-129 marine loading operation before Regulation 8, Rule 44, Marine Tank Vessel Operations, was adopted in January 4, 1989. Some of the condition's languages are outdated and superseded by requirements of the current District Regulation 8, Rule 44. Valero would like to clean up some of the languages in Part 8, and delete redundancy requirements in Parts 4, 9, 10, 11 and 12. Part 4 is redundant with Regulation 8-44-501 recordkeeping requirement. Part 9 requires leak test on vessels that load more than twice a year, which is less stringent than the current Regulation 8-44-305, which requires equipment leak inspection during every loading operation instead of only on equipment that loaded at least twice a year. Part 10, 11and 12 are related to Part 9.

The District would like to clarify the total gasoline throughput loaded at S-129 by imposing a maximum 93.9 million of barrels per year in Condition, part 1b. This limit was listed in Title V, Table IIA as maximum capacity. Record has demonstrated that the current permit Condition Part 1a. allows total emissions of 43.4 tons POC/yr, which is derived by multiply 9.39 million barrels by the controlled emission factor of 0.22 lb/1000 gallon loaded (specified as the controlled ship emission factor in Part 2) . The District will retain Part 2 to memorialize the basis of total emissions. Other than that, Part 2 is not an enforceable condition.

Since S-129 is equipped with an existing NMHC concentration analyzer, measured as C4, the District will also add the requirement of instantaneous alarm set point concentration at 6,000 ppm and shutdown at 9,000 ppm as part of Condition 1709. Valero chooses to use instantaneous limits to provide an early indication if the adsorption system is not performing adequately for alarm setting and shutdown automatically since the current NMHC analyzer is not directly connect to the data logger at Valero. The alarm set point (6,000 ppm) is 13% less than the 4 hour average concentration of 6,719 ppm determined below. The shutdown set point (9,000 ppm) is 23% greater than the 4 hours average concentration of 6,917 ppm. These setting would provide assurance that the 4 hour average concentration limit would not be exceeded.

II. EMISSION CALCULATIONS

There are no emission increases of any air pollutant for the condition changes covered by this application. The changes should be consistent with the requirements of Regulation 8, Rule 44.

The potential to emit limit of 43.3 tons/yr total non-methane hydrocarbon emissions due to gasoline loading of Condition # 1709, Part 1 was based on the 9.39 MM barrels x 0.22 lb/1000 gallons (controlled ship emission factor). District Regulation 8-44, adopted on January 4, 1989 and revised on December 5, 2005, now required all marine loading operations to meet 2 lb/1000 gallons loaded or reduce emissions by at least 95% by weight.

On April 13, 1992, the District performed the initial source test at A-29 for 11 hours and 8 minutes. The results are listed below:

- Emission factor = 2.33 lbs/1000 bbls or 0.055 lbs/1000 gals
- Control efficiency = 97.8 %, which met the 95% control efficiency of Regulation 8-44-304
- Uncontrolled emission factor = 0.055 lbs/1000 gals / (1-0.978) = 2.52 lbs/1000 gals

According to Regulation 8-44-304, S-129 is required to meet 95%, which is:

- 2.52 lb/1000 gals x (1-0.95) = 0.126 lb/1000 gals

Using the correlation between measured NMHC and the mass emission limits for gasoline truck loading equation in Regulation 8-33-309.13.1, similarly:

$$Cmax = \frac{(PML)}{(MWs)}\ (3183800)$$

-

- Where:
- *Cmax* = Parametric concentration limit expressed as the instrument span
- gas utilized, parts per million (ppm)
- *PML* = Permitted mass emission limit expressed as pounds per
- thousand gallons loaded, (lb/1000 gal) = 0.126 lbs/1000 gals
- *MWs* = Molecular weight of the span gas utilized, pounds per pound
- Mole = 58 for butane
- (3183800) is a multiplying factor that represents a combination of terms consisting of conversion factors for decimal fraction to percent, percent to parts per million, the molar volume, gallons to cubic feet, pounds per thousand gallons and a 10% tolerance. It is
- C max = (0.126 lbs/1000 gals) x 3,183,800 / 58 lb/mol = 6,917 ppm as C4, 4 hour average

III. PLA/NT CUMULATIVE INCREASE SINCE 4/5/1991

The cumulative increase for this application is ZERO for all pollutants.

IV. TOXIC SCREENING A/NALYSIS

Toxic emissions will not increase as a result of this application. Therefore, a toxic risk screening analysis is not required per Regulation 2-5.

V. BEST AVAILABLE CONTROL TECHNOLOGY

This application has no emission increase. BACT does not apply to S-129 per Regulation 2-2-301.

VI. OFFSETS

Offsets are not triggered since there are no emission increases from this application per Regulation 2-2-302.

VII. STATEMENT OF COMPLIA/NCE

Source S-129 is subject to and expected to comply with all requirements of Regulation 8-44, including the requirement of Regulation 8-44-304, which meets 5.7 grams per cubic meter (2 pounds per 1000 barrels) of organic loaded or reduce emission by at least 95% by weight

Source S-129 is subject to 40 CFR 63, Subpart CC Refinery Operations, which requires that marine terminal be subject to 40 CFR 60, Subpart Y Marine Terminals. However, Subpart Y exempts S-129 from MACT requirement because the source is an existing source, which emits less than 10 tons/yr of individual HAP and 25 tons/yr of combined HAP. Subpart Y also exempts S-129 from RACT requirement because the source is an existing source, which has a low throughput of less than 10 MM barrels of gasoline loaded. S-129 will only be required by Subpart Y to record keeping and reporting its throughputs. Valero wants to operate its marine terminal below 10 MM barrels to qualify for 40 CFR 60, Subpart Y exemption from the standard through the use of low throughput, the District will impose additional condition limiting its throughput to 9.39 MM barrels of gasoline in Part 1b.

Under the authority of section 183(f) of the Clean Air Act, the Coast Guard has issued regulations to ensure the safety of equipment operations of vapor control systems that control vapors of crude oil, gasoline blends or benzene emitted from a tank vessel's cargo tanks. The facility vapor control systems are required to meet the Code of Federal Regulation 33 CFR 154, Subpart E of the Navigation and Navigable Waters, Facilities Transferring Oil or Hazardous Material in Bulk. The vessels are required to meet 46 CFR Part 39 for Shipping, Vapor Control. Other applicable regulations for vessel vapor control systems and loading operations are contained in 33 CRD section 155.750 (Oil transfer procedures), 33 CFR section 156.120 (Requirements for transfer, 33 CFR section 156.170 (Equipment tests and inspections) and 46 CFR section 35.35-30(c) (Declaration of inspection).

This project is considered to be categorically exempt under the District's CEQA Regulation 2-1-312.1 and therefore not subject to CEQA review. This permit application is to modify permit conditions for existing or permitted sources or facilities that do not involve any increases in emissions or physical modifications.

Valero is not located within 1,000 feet of any school. The public notification requirements of Regulation 2-1-412 are not required.

PSD does not apply.

XIV. CONDITIONS

Condition 1709
For Source S-129 Marine Bulk Plant (LD-129)
Abated by A-29 Dock Vapor Recovery Unit (DVRU) Carbon Adsorption System
Exxon Application #99, Amended by Application 23841

1a. The owner/operator shall limit the total non-methane hydrocarbon emissions due to gasoline (mogas) loading across the marine dock to 43.4 tons/yr excluding shore-side fugitive emissions. This limit is based on a throughput of 9.39 million barrels of gasoline loaded per year and the controlled ship loading emission factor in Part 2 (0.22 lbs/1000 gals). [Basis: Cumulative Increase]

1b. The owner/operator shall not exceed 9.39 million barrels of gasoline loaded during any consecutive 12-month period. [Basis: Remain exempt from 40 CFR Part 63, Subpart Y standard of NESHAP for Marine Tank Vessel Loading Operations, Cumulative Increase]

2. The owner/operator shall calculate the organic emissions as the sum of the volume of gasoline loaded on each vessel multiplied by the appropriate emission factor listed below. These emission factors are not enforceable. The uncontrolled and

controlled emission factors are retained to document the basis used for 43.4 tons/yr POC in Part 1a. [Basis: Cumulative Increase]

EMISSION FACTOR	UNCONTROLLED LB VOC/1000 GAL	CONTROLLED LB VOC/1000 GAL
Ship	1.80	0.22
Barge	3.40	0.30

3. The owner/operator shall abate emissions from Source S-129 with Abatement Device A-29 during all periods of operation. The owner/operator of S-219 and A-29 shall ensure the control efficiency of A-29 is at least 95%, by weight, or the VOC emission shall not exceed 2 lb/1000 bbl loaded (non-methane). [Basis: Cumulative Increase, Regulation 8-44-304]
4. Deleted. [Redundant with Regulation 8-44-501]
5. The owner/operator shall install a continuous emission monitor and recorder for NMHC concentrations at the A-29 discharge emission point. The owner/operator shall maintain and operate the NMHC analyzer as set forth in the manufacture's operating manual. The owner/operator shall install an audio alarm set to activate when the A-29 carbon bed exhaust NMHC concentration exceeds 6,000 ppm as butane (C4). The alarm is used to provide an early indication that the carbon adsorption system may not be performing adequately. The owner/operator shall shutdown the S-129 loading operation if the NMHC concentration exceeds 9,000 ppm as butane (C4). [Basis: Cumulative Increase, Regulation 8-44-304, SIP Regulation 8-44-301; CAM 40 CFR 64.2(b)(1)(vi)]
6. The owner/operator shall record the relief valve set pressures for each marine vessel loaded and maintain a continuous pressure recording of all controlled gasoline (mogas) loading. [Basis: Cumulative Increase]
7. The owner/operator shall submit a quarterly report of daily loadings and emissions on a District approved format. [Basis: Cumulative Increase]
8. Deleted [Basis: Superseded by Regulation 8, Rule 44, which prohibits uncontrolled loading of regulated materials. Replaced with Part 6 loading pressure limitation.] [Basis: Cumulative Increase]
9. Delete. [Superseded by more stringent marine vessel leak repair requirements in Regulation 8-44-305.2, 305.3, and 305.4 (RACT) and U.S. Coast Guard requirements for vapor-tight marine vessels (http://www.uscg.mil/hq/cg5/cg522/cg5223/docs/Marine_Vapor_Control_Requirements.doc)]
10. Deleted. [See Part 9]
11. Deleted. [See Part 9]
12. Deleted. [Superseded by more stringent marine vessel leak testing and repair requirements in Regulation 8-44-305.2, 305.3, and 305.4 (RACT)]
13. Deleted. [Basis: Source test completed]
14. Deleted. [Basis: The District approved source testing facility prior to permit issuance]
15. Deleted. [Basis: The owner/operator install and operated the equipment prior to banking of any emission reduction credit]
16. Deleted. [Basis: Condition is redundant with Standard Condition I.D.]

XV. RECOMMENDATION

Issue a conditional change to the Permit to Operate to Valero for the following equipment:

S-129 Crude/Product Dock abated by A-29, Adsorption Vapor Recovery System

_____
Thu H. Bui
Senior Air Quality Engineer
Engineering Division

Date: _____

THB:E:\Valero\23841\3-6-2012

EVALUATION REPORT
Valero Benicia Refinery
Plant Number 12626
Application Number 24094

Background

Valero Refining Company (Valero) is requesting to change the permit condition for the following sources at its Benicia Refinery:

S-34 F-2905 PFR Regen Gas, 74 MMBtu/hr
S-35 F-2906 PFR React Gas, 14 MMBtu/hr
S-40 SG-2301 Steam Gen, 218 MMBtu/hr
S-41 SG-2302 Steam Gen, 218 MMBtu/hr

These boilers and process heaters are subject to Permit Condition Number 21233, which is for Regulation 9-10 refinery-wide compliance. Regulation 9-10 was amended and approved on December 15, 2010 to allow the use of alternate 30-day period representative of normal operation for the NOx determination. Valero is requesting to change the condition for four refinery sources (S-34, S-35, S-40 and S-41) with intermittent use so that they can be allowed to use a more representative normal NOx emissions and heat inputs instead of the previous 30-day period. That is when these sources are not in operation, their NOx contributions to the refinery wide emission should be zero (zero mass emission and zero heat input). Additionally, because the revised Regulation 9-10 was immediately effective on December 15, 2010 and the change had an immediate impact on the daily average refinery emissions calculation, Valero is requesting that the change be retroactively effective to December 15, 2010.

Sources S-34 and S-35 are Naphtha Reforming Unit (NRU) catalyst regeneration and dryer reactivation furnaces and are operated only when the NRU is required to regenerate. Sources S-40 and S-41 are utility package boilers and operate only when refinery needs steam. These sources are in operation for only about 50% of the year based on limited process demand. The remainder of the time, they are out of service (shut down).

Annual On-Line Operating Day Percentages

Source No.	Source Name	2008	2009	2010
S-34	F-2905 @ NRU	56%	55%	39%
S-35	F-2906 @ NRU	64%	62%	44%
S-40	SG-2301 @ Utility	67%	59%	44%
S-41	SG-2302 @ Utility	61%	58%	69%

Since Regulation 9-10 added the provision to use an alternate 30-day period representative of normal operation, the District will grant Valero the requests as explained above by adding another condition to clarify the NOX emission procedures for sources S-34, S-35, S-40 and S-41.

The requests from this application were previous submitted along with another NOx Box change (Application # 23454). Due the delayed timing of the NOx Box review, these requests were splitted from the original application. As a result, the retroactive effective date and NOx calculation procedure for shut down sources from this application will share the same Title V permit application # 23453 with the NOx Box change.

Emission Calculations

There will be no increase in emissions as a result of this application.

Plant Cumulative Increase

There will be no increase in emissions as a result of this application.

Toxics Risk Screening Analysis

A toxics risk analysis is not required for this application since the emissions are not expected to increase as a result of this application per Regulation 2, Rule 5-New Source Review of Toxic Air Contaminants.

Statement of Compliance

S-34, S-35, S-40 and S-41are expected to continue to comply with all applicable requirements of Regulation 9-10 and all requirements specified in the most recent facility Title V permit.

This application will not trigger BACT, offsets, or PSD since there will be no increase in emissions as a result of this application per Regulation 2, Rule 2.

This application is not subject to CEQA since the project is a ministerial action conducted using the fixed standards and objective measurements outlined in the Permit Handbook Chapter 2.1.

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

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

Permit Conditions

Permit Condition # 25158 for sources:
S-34 F-2905 PFR Regen Gas, 74 MMBtu/hr
S-35 F-2906 PFR React Gas, 14 MMBtu/hr
S-40 SG-2301 Steam Gen, 218 MMBtu/hr

S-41 SG-2302 Steam Gen, 218 MMBtu/hr

1. Effective December 15, 2010, the owner/operator of Sources S-34, S-35, S-40 and S-41 shall use zero NOx emissions (pound) and zero heat inputs (MMBtu) to determine the NOx contribution to Regulation 9-10-301 facility-wide NOx emission limit (0.033 lb/MMBtu) when the source is routinely in the temporary out of service operation (temporary shut down because of no demand). (Basis: Cumulative Increase, Regulation 9-10)

2. Effective December 15, 2010, the owner/operator of Sources S-34, S-35, S-40 and S-41 shall determine the NOx contribution using the option described in 9-10-301.4 when the source is in curtailed or startup, or shutdown operation. (Basis: Cumulative Increase, Regulation 9-10)

Recommendation

Issue a conditional change in the Permit to Operate to Valero for the following sources:

S-34 F-2905 PFR Regen Gas, 74 MMBtu/hr
S-35 F-2906 PFR React Gas, 14 MMBtu/hr
S-40 SG-2301 Steam Gen, 218 MMBtu/hr
S-41 SG-2302 Steam Gen, 218 MMBtu/hr

Thu H. Bui
Senior Air Quality Engineer
Engineering Division
Date:

THB:T:\Valero\24094\24094e\1/19/12

EVALUATION REPORT
VALERO REFINING CO.
Application #24329 - Plant #12626

3400 E. Second St.
Benicia, CA 94510

I. BACKGROUND

Valero has applied for condition changes to Conditions 815, 11030, 12727, 18794, 19466, 20820, 22156, 24080 and 24198 as parts of the Valero Improvement Project (VIP-A/N 15606) and VIP Amendment (A/N 16937) completed.

This application will update the latest fugitive POC emissions in Condition 20820, parts 1 and 2. The remaining balance of fugitive POC emission will be documented for future projects yet to be constructed, including the S-1062 Hydrogen Unit with Pressure Swing Adsorption.

The following permit conditions will be completely deleted from the Title V Permit and Permit to Operate will be permanently archived:

1. **Condition 815, S-1006 Crude Unit:** Old crude unit throughput of 135, 000 barrels per day superseded by implementation of the VIP/VIP Amendments new limit of 165,000 barrels/day average.
2. **Condition 11030, S-3 and S-4 CO furnaces:** CO furnaces and their thermal DeNox systems (A-52 and A-53) plus the ESPs abatement (A-1 through A-5) were shut down on December 31, 2010. PS Furnaces S-1059 and S-1060 replaced the CO furnaces on January 2011 with new Condition 20820.
3. **Condition 12727, S-232 and S-233 ESP Fines System:** The PS Furnaces, S-1059 and S-1060, are abated by SCRs, A-1059 and A-1060, and subsequently by a pre-scrubber/scrubber system, A-1047; therefore the condition for the ESP fines system (S-232 and S-233) is not needed.
4. **Condition 18794, , S-1004 Catalytic Reformer:** The total Naphtha throughput (12,739 KB/yr (34.9 KB/D) and 39.8 KB/D) at S-1003 was superseded by a new increased throughput in Condition 20820, Parts 55 and 56 upon implementation of the VIP/VIP Amendments .
5. **Condition 19466, Title V monitoring:** Condition 19466 superseded by Condition 20820, which has the latest requirements.
6. **Condition 22156, A-1 through A-5 ESPs:** ESPs A-1 through A-5 were removed from service since December 31, 2010.

The following permit conditions will be changed from the Title V Permit:

1. Condition 20820:
   a. Delete Part 1, update fugitive emission based on completed project in the VIP/VIP Amendments: FCCU/CKR Scrubber (A-1047), PS Furnaces (S-1059 and S-1060); CARB Phase III (S-209, S-210, S-1003, S-1011, S-1014 and S-1024); Butamer (S-1034, S-1035, S-1049 and S-1050); ULSD Units (S-1036, S-1051 and S-1052); and Alkylation Guard Bed (S-1063).

   b. Parts 2a and 2b, update the total fugitive emission for projects that were completed as listed above. The original VIP was approved by CEQA at 3 TPY of fugitive emissions. The VIP Amendments was approved for an additional 3 TPY. Therefore the total fugitive

emissions is 6 TPY for all projects listed under VIP/VIP Amendments. Five out of six projects were completed. The only one left is the replacement of the one of the Hydrogen Reformer Furnace and its associated Pressure Swing Adsorption Unit. Below is the summary of completed sources and their fugitive emissions:

Project Under VIP/VIP Amendments	Final Counts, POC Emissions (TPY)
ULSD (A/N 13244, Cond. 22949, Part 2)	1.21
Butamer (A/N 17876, Cond. 24080, Part 2)	2.08
CARB Phase III (A/N 18582, Cond. 9296 Part F2)	0.22
Alkylation Guard Bed (A/N 22082, Cond. 24737, Part 2)	0.121
Flue Gas Scrubber (A/N 16937)	0.49
Total Actual as Built (Cond. 20820, Part 2a)	4.12

VIP/VIP Amendment Offsets	6.0
Remaining Balance (Cond. 20820, Part 2c)	1.88

c. Part 2c will specify the total NMOC fugitive emission (1.9 TPY) that is allotted for the remaining project in VIP/VIP Amendments application.
d. Parts 21 and 23 are deleted because Valero already processes more than 135, 000 BBLs of crude, which triggers all modifications within VIP/VIP Amendments. New limits are now superseded old limits.
e. Part 21e is deleted and replaced by Part 63f.
f. Part 22 is deleted and replaced by Part 63g.
g. Part 23, removed past effective date portion of the condition.
h. Part 24 is updated to reflect the current emission limit after the VIP/VIP Amendments modification.
i. Parts 28 and 29 are deleted because the completed project offsets are reconciled.
j. Parts 34 through 41 are changed in term of numbering identification to clarify the remaining vessels, reactors and miscellaneous units.
k. Parts 42, 50, 51, 55 and 56, notes are deleted when the VIP project is started up.
l. Parts 61 and 63b., added the language to allow the steam injection operation when necessary to minimize the plume visibility as required by CEQA agreement.
m. Part 63, added a footnote that NMOC is equivalent to POC for the purpose of this condition.
n. Part 63b, added the note that the AMP for opacity requirement was submitted to EPA on October 27, 2010 by Valero.
o. Part 63c, clarify the PM10 emissions calculation and exclude the air resulting from total process air flow rate because steam injection operation at the FCCU/CRK scrubber occurs only at the stack's exhaust.
p. Part 63d, deleted the ammonia slip initial source test requirement.
q. Part 64, the fuel flow meter is a parametric monitor as determined by the District.
r. Part 65, clarify the startup, shut down and emergency bypass language.
s. Parts 66 and 67, delete the initial startup submittal of source test.

t. Part 68, added the CO emission limit that was mentioned in Part 63.
u. Part 70, delete initial source test for NOx, SO2, CO, NMOC and PM10 since they were completed.
v. Part 75, deleted the requirement of 80% or more of maximum firing rate during initial source test since they were completed.
w. Part 76, delete the shutdown record requirement since the sources were shut down on December 31, 2010.

2. Condition 24080:
   a. For clarification, Valero would like to add the throughput limit of 5000 barrels/day as Part 3 and record keeping as Part 4 for S-1034, S-1035, S-1049 and S-1050 under Butamer project.

3. Condition 24198: Deleted Part 16, all requirements have been complete. Added Part 17 per A/N 21573 for Dump Stack, P-69 monitoring requirements.

II. EMISSION CALCULATIONS

This application will not result in an emission increase.

III. PLA/NT CUMULATIVE INCREASE SINCE 4/5/1991

There are no net changes to the plant cumulative emissions.

IV. TOXIC SCREENING A/NALYSIS

This application will not result in an increase in toxic air contaminant emissions from existing levels. Therefore, a Toxic Risk Screening Analysis is not required per Regulation 2-5.

V. BEST AVAILABLE CONTROL TECHNOLOGY

This application will not result in any emission increase from existing levels. Therefore, BACT is not triggered per Regulation 2-2-301.

VI. OFFSETS

This application does not result in emission increases. Therefore, offsets are not needed per Regulation 2-2-302.

VII. STATEMENT OF COMPLIA/NCE

Sources S-1059 and S-1060, PS Furnaces

- Sources S-1059 and S-1060 are subject to and expected to be in compliance with Regulation 1-Public Nuisance. No person shall discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons or the public; or which endangers the comfort, repose, health or safety of any such persons or the public, or which causes, or has a natural tendency to cause, injury or damage to business or property.

- Sources S-1059 and S-1060 are subject to and expected to comply with the requirement of Regulation 6 – Particulate Matter and Visible Emissions. Visible particulate emissions are limited by section 6-1-301 which prohibits visible emissions greater than or equal to Ringelmann No. 1

for no more than 3 minutes in an hour, and 302 limits the source to less than 20% opacity. Section 305 prohibits fallout of visible particles onto neighboring properties in sufficient quantities to cause annoyance to any other person. In addition, Regulation 6-1-311 limits PS Furnaces' PM_{10} emissions to be less than 40 lb/hr.

- Sources S-1059 and S-1060 (fugitive emissions) are subject to Regulation 8, Rule 18- Equipment Leaks. The equipment should comply with the Standards of Regulation 8, Rule 18 for Valves, Compressors and Flanges. The VOC leak standards for valves, pumps and flanges are the same and are set at 100 ppmvd.

VALVES -- Most valves will use graphite packing, which is the best material available to achieve low emissions in a wide variety of applications. These new components will be included in the Valero Benicia Refinery's quarterly inspection and maintenance program in compliance with BAAQMD Regulation 8, Rule 18, with a leak criteria of 100 ppmvd expressed as methane measured at 1 centimeter (cm). This meets BAAQMD BACT guidelines for POCs.

PUMPS -- The pumps will be equipped with double mechanical seals with barrier fluid. The pumps will be included in the Valero Benicia Refinery's quarterly inspection and maintenance program in compliance with BAAQMD Regulation 8, Rule 18, and BAAQMD BACT guidelines for POCs with a leak criteria of 100 ppmvd expressed as methane measured at 1 centimeter (cm).

FLA/NGES/CONNECTORS -- The flanges/connectors will use graphite or equivalent designed flange gaskets to reduce POC fugitive emissions. These new flanges/connectors will be included in the Valero Benicia Refinery's quarterly inspection and maintenance program in compliance with BAAQMD Regulation 8, Rule 18, with a leak criteria of 100 ppmvd expressed as methane measured at 1 centimeter (cm). This meets BAAQMD BACT guidelines for POCs

- Sources S-1059 and S-1060 (fugitive emissions) are subject to Regulation 8, Rule 28- Episodic Releases from Pressure Release Devices at Petroleum Refinery and Chemical Plants. This rule requires that new and modified pressure release valves shall meet all applicable requirements of Regulation 2, Rule 2, including BACT. Valero will comply with this rule by normally venting all pressure relief valves to a recycle compressor to recover the gas, or a flare with a recovery/destruction efficiency greater than or equal to 98% during overflow or emergency situation.

- The emission limitations, monitoring, and sampling requirements from Regulation 9-1 apply to the FCCU (S-5) and the Coker Unit (S-6). Regulation 9, Rule 1, Section 310, Emission Limitations for Fluid Catalytic Cracking Units, Fluid Cokers, and Coke Calcining Kilns, limits SO_2 emissions sources S-5 and S-6 to 1,000 ppmvd. The Valero refinery will continue to comply with the requirements of Regulation 9, Rule 1 (Inorganic Gaseous Pollutants, Sulfur Dioxide).

- Regulation 9, Rule 1, Section 301 and Regulation 9, Rule 2, Section 301 limits ground-level concentrations of H2S for the whole refinery. Section 9-2-301 states that "a person shall not emit during any 24 hour period, hydrogen sulfide in such quantities as to result in ground level concentrations in excess of 0.06 ppm averaged over three consecutive minutes or 0.03 ppm averaged over any 60 consecutive minutes. Valero refinery will continue to comply with the requirements of Regulation 9, Rule 2 (Inorganic Gaseous Pollutants, Hydrogen Sulfide).

- Sources S-1059 and S-1060 are subject to and expected to comply with the requirement of Regulation 9, Rule 10 –304 and 305 – Nitrogen Oxides and Carbon Monoxide from Boilers, Steam Generators and Process Heaters in Petroleum Refineries. Emission limits, monitoring, and

reporting requirements in this regulation apply to sources S-1059 and S-1060. Regulation 9, Rule 10, Section 304.1 limits NO_x emissions to 150 ppmvd at 3 percent O_2, dry, and Section 305 limits CO emissions to 400 ppmvd at 3 percent O_2, dry. Valero refinery will continue to comply with the requirements of Regulation 9, Rule 10.

- Sources S-1059 and S-1060 are subject to and expected to comply with the following Regulation 10: New Source Performance Standards (NSPS), (40 CFR, Part 60)

a. 40 CFR, Part 60, Subpart A - General Provisions
b. 40 CFR, Part 60, Subpart GGG/VV and GGGa/VVa Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries

- Sources S-1059 and S-1060 are subject to and expected to comply with the following Section 112 of the Clean Air Act, National Emission Standards for Hazardous Air Pollutants (NESHAP)

a. 40 CFR Part 61, Subpart A – General Provisions
b. 40 CFR Part 63, Subpart CC – Petroleum Refineries
c. 40 CFR Part 63, Subpart A – General Provisions
d. 40 CFR Part 63, Subpart UUU – Petroleum Refineries: Catalytic Cracking Units, Catalytic Reforming Units and Sulfur Recovery Units, or
e. 40 CFR Part 63, Subpart DDDDD – Industrial, Commercial and Institutional Boilers and Process Heaters. The Washington DC Circuit Court vacated this rule on June 8, 2007. Where there is no MACT for a new source and the deadline for promulgation of a standard by the EPA is past, local agencies must determine on a case-by-case basis, MACT for the new source, in accordance with 40 CFR 63.52(a). The emission limit for these sources in the vacated standard was 400 ppm CO. There were no other limits for gaseous-fueled boilers.

This project qualifies for a CEQA categorical exemption of Regulation 2-1-312.1 for applications to modify permit conditions for existing or permitted sources or facilities that do not involve any increases in emissions or physical modifications, and therefore is not subject to CEQA review.

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

Toxics, BACT, offsets, and PSD are not triggered.

VIII. CONDITIONS

Condition # 20820, VIP Application No. 5864
Amended by VIP Amendments, Application No. 16937
Amended by Application No. 15606 to revise the NMOC baseline
Amended by Application No. 15606 to revise the NMOC baseline
Amended by Application No. 22710 to add Consent Decree RATA allowance for S-1059 and S-1060, Feb 2011
Application 24379 (August 2012): Consolidated Consent Decree Requirements
Application 24656 (September 2012): Consolidated LPFG H2S and TRS Requirements
Application 24450 (October 2012): Reduction of source test frequency for S-1059 and S-1060
Application 24329 (October 2012): VIP/VIP Amendments Condition Cleanup. Fugitive Equipment update after completion of VIP PROJECTS: FCCU/CKR SCRUBBER, PS FURNACES (S-1059 A/ND S-1060), CARB Phase III (S-209, S-210, S-1003, S-1011, S-

1014, and S-1024), BUTAMER (S-1034, S-1035, S-1049, and S-1050), ULSD UNIT (S-1036, S-1051, and S-1052), and ALKY GUARD BED (S-1063)

FUGITIVE EQUIPMENT

1.a. Deleted (completed. All new light hydrocarbon control valves installed as part of these VIP were equipped with live-loaded packing system and polished stems, or equivalent.

b. Deleted (Completed All new flanges/connectors installed as part of these VIP projects were equipped with graphitic gaskets unless prevented by service requirements). Deleted (Completed All new light hydrocarbon centrifugal pumps installed as part of these VIP projects are of seal-less design or are equipped with dual mechanical seals, or equivalent). Deleted (Completed All new light hydrocarbon centrifugal pumps installed as part of these VIP projects are of seal-less design or are equipped with dual mechanical seals, or equivalent). Deleted (Completed All fugitive equipment installed as part of these VIP projects has been incorporated into the facility LDAR Program).

2. a. The Owner/Operator has been permitted to install fugitive components for these VIP projects with a total NMOC emission rate of 4.12 TPY. . [Basis: Cumulative Increase, Toxics]

b. FUGITIVE EQUIPMENT - VIP PROJECTS NOT YET CONSTRUCTED

i. The Owner/Operator shall equip all light hydrocarbon control valves to be installed as part of the VIP with live loaded packing systems and polished stems, or equivalent. [Basis: BACT, Cumulative Increase, offsets]

ii. The Owner/Operator shall equip all flanges/connectors to be installed as part of the VIP light hydrocarbon piping systems with graphitic-based gaskets unless the service requirements prevent this material. [Basis: BACT, Offsets, Cumulative Increase]

iii. The Owner/Operator shall equip all new hydrocarbon centrifugal compressors to be installed as part of the VIP with “wet” dual mechanical seals with a heavy liquid barrier fluid, or dual dry gas mechanical seals buffered with inert gas. [Basis: BACT, Offsets, Cumulative Increase]

iv. The Owner/Operator shall equip all new light hydrocarbon centrifugal pumps to be installed as part of the VIP with a seal-less design or with dual mechanical seals with a heavy liquid barrier fluid, or equivalent. [Basis: BACT, Offsets, Cumulative Increase]

v. The Owner/Operator shall integrate all new fugitive equipment to be installed as part of the VIP, in organic service, into the owner’s fugitive equipment monitoring and repair program. [Basis: Compliance monitoring]

c. The Owner/Operator shall submit a count of installed pumps, compressors, valves, and flanges/connectors every 180 days until completion of the project. The Owner/Operator has been permitted to install fugitive components with a total NMOC emission rate of 1.88 TPY. If there is an increase in the total fugitive component emissions, the plant’s cumulative emissions for the project shall be adjusted to reflect the difference between emissions based on predicted versus actual emissions. The Owner/Operator may have enough remaining

contemporaneous emissions reduction credits (ERC's) to cover any increase in NMOC fugitive emissions beyond the original projection. If not, the Owner/Operator shall provide to the District all additional required offsets at an offset ratio of 1.15:1 no later than 14 days after the submittal of the final NMOC fugitive equipment count. If the actual component count is less than the predicted, at the completion of the project, the total will be adjusted accordingly. Any ERC's applied by the facility in excess of the actual total fugitive emissions will be credited back to Owner/Operator prior to issuance of the permits. [Basis: Cumulative Increase, Toxics]

FUEL GAS SYSTEM

3. Deleted. (Replaced by LPFG Condition 25342, Parts 1a, 1b, 1c and 2e)

4. Deleted. (Replaced by LPFG Condition 25342, Part 2b)

5. Deleted. (Replaced by LPFG Condition 25342, Part 3a)

6. Deleted. (Replaced by LPFG Condition 25342, Parts 4c and 5c)

HYDROGEN REFORMER FURNACE (S-1061)

7. The Owner/Operator shall fire only refinery fuel gas and/or natural gas in the S-1061 Hydrogen Reformer Furnace. [Basis: BACT]

8. Total combustion emissions from this combustion source (S-1061), abated by SCR, shall not exceed the following annual limits in any calendar year: [Basis: Cumulative Increase, Offsets]

Pollutant	Annual (tons)
NOx	25.3
CO	30.8
SO2	28.0
PM10	10.7
NMOC	9.9

   a. The Owner/Operator shall determine the annual emissions using continuous emission monitor (CEM) data for NOx, CO, O2, TRS, H2S and using source test data and fuel consumption for PM10 and NMOC. [Basis: Monitoring]

   b. The Owner/Operator shall submit an annual report to the Compliance and Enforcement Division and Engineering Division no later than 45 days following the end of each calendar year. The report shall include the actual daily emissions based on CEM data for NOx, CO, TRS, H2S, O2, and the daily emissions of PM10 and NMOC based on the most recent source test data. Also, the report shall include the annual totals of each pollutant to demonstrate compliance with the above limits. The report shall also include the total daily heat input for S-1061 Hydrogen Reformer Furnace. [Basis: Reporting Requirements]

9. The Owner/Operator shall equip the S-1061 Hydrogen Reformer Furnace with a District approved continuous fuel flow monitor and recorder in order to determine fuel consumption. (This is not a parametric monitor as defined in Regulation 1-238.) [Basis: Monitoring]

10. Startups and shutdowns of the S-1061 Hydrogen Reformer Furnace shall not exceed 24 consecutive hours. The 24-consecutive-hour startup period is in addition to furnace dryout/warmup periods,which shall not exceed 72 consecutive hours. [Basis: Time allowances for startup and shutdown periods]

11. Except during startup and shutdown, the Owner/Operator shall maintain emissions of nitrogen oxides from the S-1061 Hydrogen Reformer Furnace at or below 5 ppmv, dry, corrected to 3% oxygen (0.0059 lb/MM Btu), averaged over any 3 consecutive hours. [Basis: BACT]

12. Except during periods of startup and shutdown, the Owner/Operator shall maintain emissions from the S-1061 Hydrogen Reformer Furnace at or below the following levels: (a) CO emissions - 10 ppmv, dry, corrected to 3% oxygen (0.0072 lb/MM Btu), averaged over 3 hours, and (b) PM10 emissions - 0.0025 lb/MMBtu, averaged over 3 hours, and (c) NMOC emissions - 0.0023 lb/MMBtu, averaged over 3 hours.

13. The Owner/Operator shall monitor compliance with Parts 11 and 12 by using a District-approved CEM for NOx and CO, respectively. The Owner/Operator shall perform an annual source test and monitor fuel consumption data for PM10 and NMOC to demonstrate compliance with Part 12. [Basis: BACT]

14. Except during periods of startup and shutdown, the Owner/Operator shall maintain ammonia emissions (ammonia slip) from the SCR unit (A-1061) at or below 10 ppmv of ammonia, dry, corrected to 3% oxygen, averaged over any rolling consecutive 3-hour period. [Basis: Toxics, BACT]

15. The Owner/Operator shall perform an initial source test in accordance with the requirements set forth in Part 17 to demonstrate compliance with the ammonia limitation in part 14. [Basis: Toxics, Source Tests]

16. For source S-1061, the Owner/Operator shall install, calibrate, maintain, and operate a District-approved continuous emission monitor and recorder for NOx, CO, O2, fuel gas TRS and H2S. [Basis: CEM Monitoring]

17. No later than 60 days from the startup of the S-1061 Hydrogen Reformer Furnace, the Owner/Operator shall conduct a District-approved source test to determine initial compliance with the limits in parts 11, and 12 for NOx, CO, NMOC and PM10. The Owner/Operator shall conduct the source tests in accordance with part 20. The Owner/Operator shall submit the source test results to the Source Test Section and Engineering Division no later than 60 days after the source test. [Basis: Compliance determination via source tests]

18. The Owner/Operator shall maintain the total heat input for S-1061 at or below the following limits: (1) 8,584,800 million BTUs (HHV) in any 365 consecutive day period and (2) 980 million BTUs (HHV) over any one hour period. [Basis: Cumulative Increase]

19. The Owner/Operator shall conduct an annual source test to demonstrate subsequent compliance with the NMOC and PM10 mass rates specified in part 12. The Owner/Operator shall conduct the source tests in accordance with part 20. The Owner/Operator shall submit the source test results to the Source Test Section and Engineering Division no later than 60 days after the source test. [Basis: Periodic Monitoring]

20. The owner/operator shall obtain approval for all source test procedures from the District's Source Test Section prior to conducting any tests. The owner/operator shall comply with all applicable testing requirements for continuous emissions monitors as approved by the District's Source Test Section. The owner/operator shall notify the District's Source Test Section, in writing, of the source test protocols and projected test dates at least 7 days prior to testing. [Basis: Source test compliance verification and accuracy]

FCCU/CKR SCRUBBER A/ND MAIN STACKS

21. Deleted. [Basis: FCCU/CKR Scrubber and Main Stack triggers removed because they have been activated and no longer apply. The interim FCCU/CKR Scrubber and Main Stack emission limits have been superseded by the FCCU/CKR Scrubber emission limits of Part 63, 66, 67, and 68 based upon activation of the triggers.]
    a. Deleted. [Basis: FCCU/CKR Scrubber and Main Stack triggers removed because they have been activated and no longer apply.]
    b. Deleted. [Basis: FCCU/CKR Scrubber and Main Stack triggers removed because they have been activated and no longer apply.]

    c. Deleted. [Basis: FCCU/CKR Scrubber and Main Stack triggers removed because they have been activated and no longer apply.]
    d. Deleted. [Basis: FCCU/CKR Scrubber and Main Stack triggers removed because they have been activated and no longer apply.]
    e. Deleted. [Basis: FCCU/CKR Scrubber and Main Stack triggers removed because they have been activated and no longer apply.]

22. Deleted. [Basis: Renumbered as Condition 20820 Part 63g]

CARGO CARRIER and DOCK

23. Ship and barge emissions associated with the import of crude and gas oil across the plant's main Benicia crude dock, combined with the ship emissions associated with the export of product coke across the Plant's Benicia coke dock, will not exceed the following annual calendar year limits: [Basis Cumulative Increase, Offsets]

Pollutant	Base Line	VIP Increase	Total Annual (tons)
NOx	96.14	39.98	136.12
SOx	32.87	16.19	49.06
NMOC	7.34	3.22	10.56
PM10	5.43	2.39	7.82
CO	13.83	5.88	19.71

24. To accommodate any unforeseen changes in shipping requirements, the above total annual limits for each pollutant may be further increased to accommodate a shift in crude imports from pipeline to ships. All increases in combustion emissions from ships will need to be offset through contemporaneous emissions reductions. The VOC contingency has been provided as part of Application #5846. The emission reduction credits (ERC's) for the other pollutants will be provided by a corresponding reduction in the FCCU/CRK Scrubber stack annual emission limit (Part 63). However, in no event shall the Owner/Operator allow the total additional increase for the contingency to exceed the contingency allowance presented below. [Basis: Cumulative Increase, Offsets]

Pollutant	Base Line plus	VIP Increase	Contingency Total Annual (tons)
NOx	136.12	32.95	169.07
SOx	49.06	15.76	64.82
NMOC	10.56	3.10	13.66
PM10	7.82	2.06	9.88
CO 19.71	5.21	24.92	

25. The Owner/Operator shall use the following emission factors for determining compliance with parts 23 and 24. [Basis: Compliance Verification]

    Crude and Gas Oil Ship Receipts at Main Benicia Crude Dock in pounds per 1000 BBL (lb/kBBL):
    5.1 NOx, 1.8 SOx, 0.29 PM10, 0.42 NMOC, 0.76 CO.

    Crude and Gas Oil Barge Receipts at Main Benicia Crude Dock in lb/kbbl:
    12.78 NOx, 0.16 SOx, 0.56 PM10, 0.29 NMOC, 1.27 CO.

    Coke Exports via Ship at Valero Coke Dock in lb/1000 tons:
    44.2 NOx, 33.1 SOx, 3.6 PM10, 3.4 NMOC, 6.2 CO.

26. The Owner/Operator shall submit calendar year reports to the District, due the 45th day following the end of the year, detailing the annual emissions to document compliance with parts 23 and 24. [Basis: Annual Report]

27. The owner/operator shall maintain daily records (calendar day), in a District approved log, for: (1) the total number of deliveries of crude oil by ship and barge, (2) the total number of deliveries of PGO by ship and barge, and (3) the total number of shipments of coke by ship. The daily throughput of crude oil transferred at the plant's dock from the cargo ship or barge to the crude storage tanks (Facility B5574 S-57 through S-62, Facility B2626 S-1047 and S-1048) shall be recorded in a District approved log. All records shall be retained for a period of at least five years from the date of entry. This log shall be kept on site and made available to District staff upon request. [Basis: Recordkeeping]

OFFSETS

28. Deleted. [Completed. Offsets for VIP shipping have been provided.]

29. [Completed. Offsets for VIP fugitives and crude tankage have been provided.]

STORAGE TA/NKS

30. For the S-1047 and S-1048 Storage Tanks (external floating roof), the Owner/Operator shall comply with all applicable NSPS requirements of 40 CFR Part 60, Subpart Kb and the requirements of District Regulation 8-5. [Basis: BACT, NSPS]

31. Owner/Operator shall not store any material in S-1047 or S-1048 storage tanks other than crude oil if the new material will result in an emission increase of NMOC or an increase in toxicity. This prohibition includes (but is not limited to) the storage of a new material with a: a) Higher vapor pressure at actual storage temperature; (b) lower initial boiling point: (c) larger percentage of a toxic component; (d) new toxic compounds. Owner/Operator shall notify the District, in writing, of any proposed product storage changes, as prohibited herein, and received written authorization from the APCO in advance of any such use. [Basis: Cumulative Increase, Toxics]

32. The Owner/Operator shall limit the combined material throughput at storage tanks, Facility B5574 S-57 through S-62, and Facility B2626 S-1047 and S-1048, to no more than 171.5 kbbl/day (annual daily average) or 62.6 Million Barrels per year.
[Basis: Cumulative Increase]

33. The Owner/Operator shall maintain the daily combined material throughput at storage tanks, and Facility B5574 S-57 through S-62, and Facility B2626 S-1047 and S-1048, in a District approved log to demonstrate compliance with part 32. The Owner/Operator shall keep these records on site and make them available for District inspection for a period of at least 5 years from the date on which a record is made. [Basis: Recordkeeping]

MISCELLA/NEOUS UNITS, VESSELS A/ND REACTORS

34. Deleted. [Basis: Initial source test has been completed.]

35. Deleted, [Basis: redundant with Part 58.]

36. For each remaining new fractionation/stripping process vessel (S-1037 through S-1045), the Owner/Operator shall not operate the sources beyond the following throughput limitation: [Basis: Cumulative Increase]
100 kbbl/day, Daily Average, each vessel.

Note: S-1034 and S-1035 have already been permitted as part of the Butamer Unit per Condition 24080. S-1036 has been permitted as part of the ULSD Unit per Condition 22949.

37. Upon startup of each remaining new source in part 36, the Owner/Operator shall submit documentation of the final design throughput for the source. The Owner/Operator may

adjust the throughput limit for each source in part #36 as long as it does not exceed the 100 kbbl/day, daily average. [Basis: Cumulative Increase]

38. The Owner/Operator shall maintain the daily material throughputs for each remaining new fractionation/stripping source, S-1037 through S-1045, in a District approved log. The Owner/Operator shall keep these records on site and make them available for District inspection for a period of at least 5 years from the date on which a record is made. [Basis: Recordkeeping]

39. For each remaining new hydrofining reactor process vessel (S-1053 through S-1056), the Owner/Operator shall not operate the sources beyond the following throughput limitation: [Basis: Cumulative Increase]
    100 kbbl/day, Daily Average, each vessel.

    Note: S-1049 and S-1050 have already been permitted as part of the Butamer Unit per Condition 24080. S-1051 and S-1052 have already been permitted as part of the ULSD Unit per Condition 22949.

40. Upon startup of each remaining new source, the Owner/Operator shall submit documentation of the final design throughput for the source. The Owner/Operator may adjust the throughput limit for each source in part 39 as long as it does not exceed 100 kbbl/day, daily average. [Basis: Cumulative Increase]

41. The Owner/Operator shall maintain the daily material throughputs for each remaining new hydrofining source, S-1053 through S-1056, in a District approved log. The Owner/Operator shall keep these records on site and make them available for District inspection for a period of at least 5 years from the date on which a record is made. [Basis: Recordkeeping]

42. For each individual sulfur plant train, S-1 and S-2, the Owner/Operator shall not operate the sources beyond the following sulfur production limits: [Basis: Cumulative Increase, odors]
    240 short tons per day, daily maximum
    87,600 short tons per year

43. The Owner/Operator shall maintain the daily sulfur production at each individual sulfur plant train, S-1 and S-2, in a District approved log. The Owner/Operator shall keep these records on site and make them available for District inspection for a period of at least 5 years from the date on which a record is made. [Basis: Recordkeeping]

44. For the sulfur storage pit and product tank, S-157 and S-236, the Owner/Operator shall not operate the sources beyond the following throughput limits: [Basis: Cumulative Increase, Odors]

    480 short tons per day, daily maximum
    175,200 short tons per year

45. The Owner/Operator shall maintain the daily material throughput at the sulfur storage pit and product tank, S-157 and S-236, in a District approved log. The Owner/Operator shall

maintain these records on site and make them available for District inspection for a period of at least 5 years from the date on which a record is made. [Basis: Recordkeeping]

46. For the FCCU, S-5, the Owner/Operator shall not operate the source beyond the following throughput limits:
[Basis: Cumulative Increase]
80 kbbl per day, daily maximum
77 kbbl per day, annual average

47. The Owner/Operator shall maintain the daily material throughput at the FCCU, S-5, in a District approved log. The Owner/Operator shall keep these records on site and make them available for District inspection for a period of at least 5 years from the date on which a record is made. [Basis: Recordkeeping]

48. For the coke silos, S-8, the Owner/Operator shall not operate the source beyond the following limits:
[Basis: Cumulative Increase]
2,400 tons per day, daily maximum
876 ktons per year

49. The Owner/Operator shall maintain the daily material throughput at the coke silos, S-8, in a District approved log. The Owner/Operator shall keep these records and make them available for District inspection for a period of at least 5 years from the date on which a record is made.
[Basis: Recordkeeping]

50. The Owner/Operator shall not operate the S-9 Crude Blow down system or the S-1006 Pipestill Unit beyond the following crude throughput limits: [Basis: Cumulative Increase]
180 kbbl per day, daily maximum
165 kbbl per day, annual average

51. The Owner/Operator shall maintain the daily crude throughput at the S-9 Crude blow down system and the S-1006 pipestill unit in a District approved log. The Owner/Operator shall keep these records on site and make them available for District inspection for a period of at least 5 years from the date on which a record is made.
Note: Condition #815, part 2 covers the recordkeeping and reporting requirement for S-1006. This condition will be deleted when the VIP project is started up.

52. To demonstrate compliance with the throughput limit specified in part 50, the Owner/Operator shall submit a report to the District's Compliance and Enforcement Division and Engineering Division on a monthly basis. The Owner/Operator shall forward the report to the District no later than 30 days after the close of each month. [Basis: Recordkeeping]

53. For the feed drums and the hydrocracker unit, S-51, S-52 and S-1003, the Owner/Operator shall not operate the source beyond the following throughput limits: [Basis: Cumulative Increase]
    44 kbbl per day, daily maximum
    40 kbbl per day, annual average

54. The Owner/Operator shall maintain the daily material throughput at the feed drums and the hydrocracker unit, S-51, S-52 and S-1003, in a District approved log. The Owner/Operator shall keep these records on site and make them available for District inspection for a period of at least 5 years from the date on which a record is made. [Basis: Recordkeeping]

55. For the powerformer unit, S-1004, the Owner/Operator shall not operate the source beyond the following throughput limits: [Basis: Cumulative Increase]
    39.8 kbbl per day, daily maximum
    14.5 MMBBL per year

56. The Owner/Operator shall maintain the daily feed throughput at the powerformer unit, S-1004, in a District approved log. The Owner/Operator shall keep these records on site and make them available for District inspection for a period of at least 5 years from the date on which a record is made.
    [Basis: Recordkeeping]

57. For the hydrogen plants, S-1010 and S-1062 combined, the Owner/Operator shall not operate the source beyond the following throughput: [Basis: Cumulative Increase]
    190 MMSCF per day, daily maximum
    69,350 MMSCF per year

58. The Owner/Operator shall maintain the daily throughput of product hydrogen at the hydrogen plants, S-1010 and S-1062 combined, in a District approved log. The Owner/Operator shall keep these records on site and make them available for District inspection for a period of at least 5 years from the date on which a record is made. [Basis: Recordkeeping]

59. For the dimersol unit, S-1012, the Owner/Operator shall not operate the source beyond following throughput limits:
    [Basis: Cumulative Increase]
    7 kbbl per day, daily maximum
    2.555 MMBBL per year

60. The Owner/Operator shall maintain the daily feed throughput at the Dimersol Unit, S-1012, in a District approved log. The Owner/Operator shall keep these records on site and make them available for District inspection for a period of at least five years. [Basis: Recordkeeping]

PS FURNACES (S-1059 A/ND S-1060)

61. The Owner/Operator shall abate emissions from Sources S-5, FCCU, and S-6, Fluid Coker, with PS Furnaces, S-1059 and/or S-1060, which are followed by Pre-scrubber/Regenerative Amine Scrubber, A-1047 during all periods of operation, except during start-up, shutdown, bypass and emergency bypass periods as defined in Part 65. Vapor flow rate from A-1047 shall not exceed 360,000 SCFM, dry, at 0% O2, averaged over any 365 consecutive days, except during periods of operation of the plume abatement system to minimize plume visibility as required by CEQA. [Basis: Cumulative Increase, Consent Decree VI.B Paragraph 67]

62. The Owner/Operator shall fire only refinery fuel gas, CO gas and/or natural gas in the S-1059 and S-1060 PS Furnaces. [Basis: BACT]

63. Total combustion emissions from S-1059 and S-1060 PS Furnaces shall not exceed the following emissions limits, except as allowed in Parts 65, 66, 67 and 68: [Basis: Cumulative Increase, BACT, Offsets]

Emissions Limit Table for Parts 63, 66, 67 and 68

Pollutant	Concentrations	Emissions
NOx	42.8 ppmvd @ 3% O2 365-day avg.	610.6 tpy[2]
NOx	85.6 ppmvd @ 3% O2 7-day avg.	6,194 lbs/day, 7-day avg.
NOx	150 ppmvd[1] @ 3% O2 1-calendar day avg.	10,344 lbs/day[1]
SO2	21.4 ppmvd @ 3% O2 365-day avg.	393.2 tpy
SO2	42.8 ppmvd @ 3% O2 7-day avg.	4,309 lbs/day, 7-day avg.
SO2	440 ppmvd[1] @ 3% O2 1-calendar day avg.	22.1 ton/day[1]
CO	35.2 ppmvd @ 3% O2 365-day avg.	209.5 tpy
CO	100 ppmvd[1] @ 3% O2 1-calendar day avg.	4,402 lbs/day[1]
PM10	40 lbs/hr[1] as determined by BAAQMD ST-15 or EPA Method 17 in conjunction with EPA Methods 1, 2, 3 and 4	114.8 tpy
NMOC[3]	10 ppmvd as tested by BAAQMD modified Method ST-7 or a combination of EPA Methods 18 and 25A	14.47 tpy

[1] These values may be adjusted based on source test results as specified in Parts 66, 67 and 68.

[2] Emissions include startup, shutdown, emergency bypass or bypass scenarios.

[3] NMOC: Non-methane organic compounds. For the pusposes of this condition, NMOC is equivalent to precursor organic compounds (POC).

a. The Owner/Operator shall monitor compliance with emissions limits above by using District approved continuous emission monitor (CEM) data for NOx, CO, O2 and SO2, source test data for PM10 and NMOC, and A-1047 flow rates. [Basis Monitoring, BACT]

b. The Owner/Operator shall install, calibrate, maintain, and operate a District-approved continuous opacity monitoring system (COMS) for reasonable assurance of compliance with Regulation 6-310 or submit an alternative monitoring plan (AMP) for opacity at the outlet of the FCCU/CKR stack. The owner/operator shall operate A-1047 Pre-scrubber/Regenerative Amine Scrubber that abate S-1059 and S-1060 PS Furnaces with no more than one 6-minute average in an hour that exceeds 30% opacity. An exceedance of the opacity limit shall be deemed an exceedance of the particulate limit in Regulation 6-1-310. [Basis: Regulation 2-6-503, AMP submitted to EPA on October 27, 2010]

c. The Owner/Operator shall submit an annual report to the Compliance and Enforcement Division and the Engineering Division no later than 45 days following the end of each calendar year. The report shall include the actual daily emissions based on CEM data for NOx, CO and SO2, and A-1047 flow rate, excluding ambient air resulting from operation of the plume abatement system. In addition, the report shall include the estimated daily emissions of PM10 and NMOC. NMOC emissions will be based on an emission factors (lb/MMdscf) determined from source test data and applied to the actual average A-1047 flow rate, excluding ambient air resulting from operation of the plume abatement system. PM10 emissions will be based on quarterly source test data (lbs/hr) multiplied by daily hours of operation of the S-1059 and S-1060 PS Furnaces. Also, the report shall include the annual totals of each pollutant to demonstrate compliance with the above limits. The report shall also include the total daily heat input for S-1059 and S-1060 PS Furnaces. [Basis: Reporting Requirements]

d. Except during periods of startup, shutdown, bypass and emergency bypass as defined in Part 65, the Owner/Operator shall maintain ammonia emissions (ammonia slip) from the SCR units (A-1059 and A-1060) at or below 10 ppmv of ammonia, dry, corrected to 3% oxygen, averaged over any rolling consecutive 3-hour period. [Basis: Toxics, BACT]

e. Deleted. [Basis: Initial source test for ammonia slip has been completed.]

f. If FCCU/CKR Scrubber Stack emissions for a calendar year are less than the above limits, the owner/operator may apply the surplus reduction, if required, as an offset for the shipping contingency under part 24. [Basis: Offsets]

g. In accordance with Regulation 2-4-301.1, sulfur dioxide (SO2) emission reductions greater than those required by any District regulation and EPA Consent Decree, resulting from the installation of A-1047 FCCU/CKR Prescrubber/Regenerative Amine Scrubber, shall be eligible for banking after being demonstrated by source testing or other means acceptable to the APCO. The baseline emissions shall be calculated in accordance with Regulation 2-2-605. [Basis: Banking]

64. The Owner/Operator shall equip the S-1059 and S-1060 PS Furnaces with a District approved continuous fuel flow meter and recorder in order to determine refinery fuel gas consumption. (Prior to the Permit to Operate's issuance, the District will determine whether the fuel flow meter is a parametric monitor or not). [Basis: Monitoring]

65. Definitions of Startup, shutdown, emergency bypass and bypass:
    a. Startup of the SCRs is defined as the introduction of CO gas from S-5 FCCU or S-6 CKR to S-1059 and S-1060 PS Furnaces, not the beginning of fuel gas firing. The startup period of A-1059 and A-1060 SCRs may last up to 12 hours per startup event. NOx emissions on a concentration and mass basis will not be included in the 1-day, 7-day and 365-day average for this scenario.
    b. Shutdown of the SCRs is defined as the cessation of CO fuel into S-1059 and S-1060 PS Furnaces. The shutdown period of A-1059 and A-1060 SCRs may last up to 8 hours per shutdown event. NOx emissions on a concentration and mass basis will not be included in the 1-day, 7-day and 365-day average for this scenario.
    c. Emergency bypass of the SCRs is defined as when both SCR units are damaged and the Owner/Operator must replace the catalyst. The emergency bypass of A-1059 and A-1060 SCRs may last up to 7 days (168 hours) per each bypass event to permit catalyst replacement and restoration of abatement efficiency. NOx emissions on a concentration and mass basis will not be included in the 1-day, 7-day and 365-day average for this scenario.
    d. Bypass of the SCRs is defined as when loading coke into the CKR before startup or unloading coke following a CKR shutdown, or during CKR burner level stabilization during CRK startup while the FCCU is operating or FCCU is not operating. The bypass of A-1059 and A-1060 SCRs may last up to 96 hours to avoid coke dust entrainment in the PS Furnaces and SCRs. NOx emissions on a concentration and mass basis will be included in the 365-day average, but will be excluded in the 1-day, and 7-day average for this scenario.
    [Basis: Definition, Cumulative Increase]

66. Except during periods of startup, shutdown, bypass and emergency bypass as defined in Part 65, the Owner/Operator shall maintain emissions from S-1059 and S-1060 PS Furnaces at or below the following levels: (a) Nitrogen Oxides (NOx) emissions – 42.8 ppmv, dry, corrected to 3% oxygen, any 365 consecutive days average, and (b) Nitrogen Oxides (NOx) emissions – 85.6 ppmv dry, corrected at 3% oxygen, any 7–calendar days average, and (c) Nitrogen Oxides (NOx) emissions – 150 ppmv dry, corrected to 3% oxygen, any 1-calendar day average. The daily limit shall be established based on the results of a District-approved source test or District-certified CEM data. [Basis: BACT]

67. Except during periods of startup and shutdown, bypass and emergency bypass as defined in Part 65, the Owner/Operator shall maintain emissions from S-1059 and S-1060 PS Furnaces at or below the following levels: (a) SO2 emissions – 21.4 ppmv, dry, corrected to 3% oxygen, any 365 consecutive days average, and (b) SO2 emissions – 42.8 ppmv dry, corrected at 3% oxygen, any 7–calendar days average, and (c) SO2 emissions – 440 ppmv dry, corrected to 3% oxygen, any 1-calendar day average. The daily limit shall be established based on the results of a District-approved source test or District-certified CEM data. [Basis: BACT, Consent Decree VI.B Paragraph 67 (for Part 67a and 67b)]

68. Except during periods of startup and shutdown, bypass and emergency bypass as defined in Part 65, the Owner/Operator shall maintain emissions from S-1059 and S-1060 PS Furnaces at or below the following levels: (a) CO emissions – 35.2 ppmv, dry, corrected to 3%

oxygen, any 365 consecutive days average, and (b) CO emissions – 100 ppmv, dry, corrected to 3% oxygen, as determined by CEM, 1-calendar day average, and (c) PM10 emissions - 40 lbs/hr, as tested by BAAQMD Method ST-15 or EPA Method 17 in conjunction with EPA Methods 1, 2, 3 and 4 and (d) NMOC emissions – 14.47 tons/yr and 10 ppmv, dry, as tested by BAAQMD modified Method ST-7 or a combination of EPA Methods 18 and 25A. The CO limit shall be established based on the results of a District-approved source test or District-certified CEM data. The PM10 may be adjusted based on source test results or more reliable information. [Basis: BACT]

69. For sources S-1059 and S-1060, the Owner/Operator shall install, calibrate, maintain, and operate a District-approved continuous emission monitor and recorder for NOx, SO2, CO, and O2. The Owner/Operator shall install, calibrate, maintain, and operate a District-approved flow meter at the outlet of the A-1047 FCCU/CKR stack. (This is not a parametric monitor as defined in Regulation 1-238). [Basis: CEM Monitoring]
69a. Deleted. (Startup source test requirements)
69b. Deleted. (Replaced by Consent Decree Condition 24245, Part 14)

70. Deleted. [Basis: Initial source test for NOx, SO2, CO, NMOC, and PM10 has been completed.]

71. The Owner/Operator shall maintain the total heat input for S-1059 at or below 4,634,400 million BTUs (HHV) during any rolling 12-month period, and the total heat input for S-1060 at or below 2,268,840 million BTUs (HHV) during any rolling 12-month period. [Basis: Cumulative Increase]

72. The Owner/Operator shall conduct a District-approved source test annually to demonstrate subsequent compliance with the NMOC and PM10 emission limits specified in part 63. The time interval between source tests shall not exceed 16 months. The Owner/Operator shall submit the source test results to the Source Test Section and Engineering Division no later than 60 days after the source test. The District may revert the source test from annually to quarterly if any subsequent test result is more than 50% of the limit. [Basis: Periodic Monitoring]

73. The Owner/Operator shall obtain approval for all source test procedures from the District's Source Test Section prior to conducting any tests. The owner/operator shall comply with all applicable testing requirements for continuous emissions monitors as approved by the District's Source Test Section. The owner/operator shall notify the District's Source Test Section, in writing, of the source test protocols and projected test dates at least 7 days prior to testing. [Basis: Source test compliance verification and accuracy]

SULFURIC ACID MIST (SAM)

74. The Owner/Operator of sources S-1059, S-1060, A-1059, A-1060, A-1047, and S-1061 shall not emit more than 7 tons per year of sulfuric acid mist (SAM). [Basis: PSD]

75. Within 90 days of initial startup, the Owner/Operator shall conduct a District approved source test to demonstrate compliance with the SAM emissions in Part 74. For purposes of SAM, the applicant shall also test for SO2, SO3, SAM and ammonium sulfates. The Owner/Operator shall conduct the

source tests in accordance with Part 73. The test results shall be forwarded to the District within 150 days of the initial startup date. The test should verify emission compliance at 80% or more of maximum firing on refinery fuel gas for S-1061 Hydrogen Reformer Furnace. The initial source test has been completed for S-1059 and S-1060.

If Source S-1061 cannot achieve 80% or more of maximum firing on CO and/or refinery fuel within 90 days of initial startup, the Owner/Operator shall conduct another District's approved source test no later than 2 months after operating in that mode to demonstrate compliance with the SAM emissions in Part 74. [Basis: compliance demonstration, PSD avoidance]

Contemporaneous Emissions reduction credit

76. Deleted. [Basis: Sources S-3, S-4, and A-1 through A-5 have been completely shut down on December 31, 2010.]

77. The owner/operator of sources S-21 and S-22 shall completely shutdown one of the units no later than 90 days after startup of S-1061 and S-1062 Hydrogen Reformer Furnace and Hydrogen Unit with PSA. The owner/operator shall enter into the record log the date when the unit was shutdown. (Basis: offsets)

CONDITION 24080

Application 18750 (Oct 2008). S-1034 (Deisobutanizer), S-1035 (Stripper), S-1049 (Reactor), S-1050 (Reactor) Alkylation/Butamer Unit
Application 17876 (October 2011) Butamer Project
Application 24386 (May 2012), Delete completed fugitive requirements. Update final fugitive count and emissions.
Application 24329 (October 2012), VIP Cleanup – Relocation of S-1034 Production Limit and Recordkeeping from Condition 20820

FUGITIVE EQUIPMENT

1. a. Deleted. (Completed. All new light hydrocarbon control valves installed as part of the VIP-Butamer project were equipped with live-loaded packing systems and polished stems, or equivalent).
   b. Deleted. (Completed. All new flanges/connectors installed in light hydrocarbon piping systems as part of the VIP-Butamer project were equipped with graphitic gaskets unless prevented by service requirements.).
   c. Deleted. (All new light hydrocarbon centrifugal pumps installed as part of the VIP-Butamer project are of seal-less design or are equipped with dual mechanical seals, or equivalent.).
   d. Deleted. (Completed. All fugitive equipment installed as part of the VIP-Butamer project (A/N 17876) has been incorporated into the facility LDAR Program.)

2. The Owner/Operator has been permitted to install fugitive components (with a total POC emission rate of 2.08 TPY for the entire VIP-Butamer project. The final project fugitive

component count was submitted on March 22, 2010. [Basis: Cumulative Increase, Toxics]

3. For the S-1034 Butamer Unit Deisobutanizer (T-4801), the Owner/Operator shall not operate the sources beyond the following IC4 production rate limitation:
   5 kbbl/day, Daily Average.
   [Basis: Cumulative Increase]

4. The Owner/Operator shall maintain the daily IC4 production rate for S-1034 Butamer Unit Deisobutanizer (T-4801), in a District approved log. The Owner/Operator shall keep these records on site and make them available for District inspection for a period of at least 5 years from the date on which a record is made. [Basis: Recordkeeping]

Condition 24198
APPLICATION 16937 (Jan 2009), VIP Amendments. Condition supersedes Condition 19466.
APPLICATION 21573 (Mar 2010) P-69 Dump Stack condition is added to the FCCU S-5 and Coker Unit S-6
APPLICATION 24329 (October 2012), VIP Cleanup

1. The Owner/Operator shall operate S-160 Seal Oil Sparger only when abated by A-13/A-26 Vapor Recovery Compressor to be returned to the refinery fuel gas system. (Basis: Cumulative Increase)

2. The Owner/Operator shall abate emissions from S-8 coke storage tanks by A-8 and/or A-10 baghouses at all times. (Basis: Cumulative Increase)

3. The Owner/Operator shall monitor and record on a monthly basis the visible emissions from Sources S-1, S-2, S-8, S-11 and S-176to demonstrate compliance with Regulation 6-301 (Ringelmann 1 or 20% opacity). For S-176 only, this monitoring is only required when dry salt is added to the tank. For S-8, compliance with Regulation 6-301 shall be demonstrated at the outlet of A-8/A-10 baghouses. These records shall be kept for a period of at least 5 years from date of entry and shall be made available to District staff upon request. [Basis: Regulation 6-301]

4. The Owner/Operator shall notify the District in writing by fax or email no less than three calendar days in advance of any scheduled startup or shutdown of any process unit and as soon as feasible for any unscheduled startup or shutdown of a process unit, but no later than 48 hours or within the next normal business day after the unscheduled startup/shutdown. The notification shall be sent in writing by fax or email to the Director of Enforcement and Compliance. The requirement is not federally enforceable. [Basis: Regulation 2-1-403]

5. The Owner/Operator shall abate the emissions from the S-1059 and S-1060, PS Furnaces by SCRs A-1059 and/or A-1060 and Prescrubber/Regenerative Amine Scrubber A-1047, except during startup, shutdown, emergency bypass and bypass periods, and the Owner/Operator shall exhaust those emissions through the FCCU/CKR stack (P-1059). [Basis: Regulation 6-1-301 and Regulation 6-1-304].

6. Deleted. [Basis: Redundant with quarterly PM10 source test requirement in Condition 20820, Part 72]

7. The Owner/Operator shall perform an annual source test on Sources S-8 and S-176 to demonstrate compliance with Regulation 6-310 (outlet grain loading no greater than 0.15 grain/dscf). The Owner/Operator shall submit the test results to the District's Compliance and Enforcement Division and the District's Permit Services Division no more than 60 days after the test. These records shall be kept for a period of at least 5 years from date of entry and shall be made available to District staff upon request. For S-176 only, this source test is only required when dry salt is added to the tank. For S-8, compliance with Regulation 6-301 shall be demonstrated at the outlet of A-8/A-10 baghouses. [Basis: Regulation 6-310]

8. The Owner/Operator shall perform annually a source test on S-1 and S-2 to determine compliance with Regulation 6-330 (Outlet grain loading not to exceed 0.08 grain/dscf of SO3 and H2SO4). The Owner/Operator shall submit the test results to the District's Compliance and Enforcement Division and the District's Permit Services Division no more than 60 days after the test. These records shall be kept for a period of at least 5 years from date of entry and shall be made available to District staff upon request. [Basis: Regulation 6-330]

9. Deleted. [Basis: Redundant with quarterly PM10 source test requirement in Condition 20820, Part 72]

10. The Owner/Operator shall conduct a District-approved source test on a semi-annual basis on Sources S-7, S-20, S-21 or S-22, S-23, S-24, S-25, S-26, S-30, S-31, S-32, S-33, S-34, S-40, S-41 and on an annual basis on sources S-35 and S-173 to demonstrate compliance with Regulation 9-10-305 (CO not to exceed 400 ppmv, dry, at 3% O2, operating day average). The Owner/Operator shall submit the test results to the District's Compliance and Enforcement Division and the District's Permit Services Division no more than 60 days after the test. These records shall be kept for a period of at least 5 years from date of entry and shall be made available to District staff upon request.

    The Owner/Operator shall ensure that S-220 does not exceed 400 ppmv of CO, dry, at 3% O2, operating day average, measured by a properly installed CEM for CO and O2. [Basis: Regulation 9-10-305]

11. The Owner/Operator shall conduct a semi-annual District-approved source test on Sources S-43, S-44 and S-46 to demonstrate compliance with Regulation 9-9-301.1 (NOx not to exceed 55 ppmv, dry, at 15% O2, fired on refinery fuel gas). The Owner/Operator shall submit the test results to the District's Compliance and Enforcement Division and the District's Permit Services Division no more than 60 days after the test. These records shall be kept for a period of at least 5 years from date of entry and shall be made available to District staff upon request. [Basis: Regulation 9-9-301.1]

12. The Owner/Operator shall abate the VOC emissions from the S-159 Lube Oil Reservoir using the S-36 Boiler. [Basis: Cumulative Increase]

13. The Owner/Operator shall vent the VOC emissions from S-167 and S-168 Seal Oil Spargers in a closed system to the flare gas recovery header to be returned to the refinery fuel gas system. [Basis: Cumulative Increase]

14. The Owner/Operator shall use the continuous emission monitors required by Regulation 9, Rule 10, to monitor compliance for all NOx limits at the following sources:
    Process Furnaces: S-21 or S-22, S-23, S-25, S-30, S-31, S-32, S-33, S-220
    Steam Generators: S-40, S-41
    [Basis: Regulation 9-10]

15. The Owner/Operator shall use the continuous opacity monitors or an approved alternate monitoring plan (AMP) required by Regulation 1-520 to monitor compliance for the opacity limits at the FCCU/CKR Stack for the following sources:
    S-5 Fluid Catalytic Cracking Unit, Catalyst Regenerator
    S-6 Fluid Coker, Burner
    [Basis: Regulation 1-520]

16. Deleted. Requirements to prepare test plans, train employees, and install necessary equipment have been completed.

17. The Owner/Operator shall install continuous level monitors on two water seal compartments of the FCCU/CKR Dump Stack P-69, including continuous data historization for the parametric level monitors, and maintain the instrument in good operating condition at all times. The District may assume the opacity has exceeded a Ringelmann 1-1/2 when a breakthrough is recorded by the continuous level monitor, except where it can be confirmed that the dump stack was not used or an opacity excess did not occur. The Owner/Operator shall document the circumstances of such exceptions in a letter to the District within 30 days following such an indicated breakthrough. [Basis: Regulation 6-1-302, Regulation 1-441

X. RECOMMENDATION

Issue conditional changes to the Permit to Operate to Valero Refining Company for the following equipment:

S-1004 Catalytic Reformer
S-1006 Crude Unit
S-1059 Pipestill Furnace, F-105
S-1060 Pipestill Furnace, F-106

Thu H. Bui
Senior Air Quality Engineer
Engineering Division
Date:

THB:T:\Valero\24329\24329e\10/18/12

EVALUATION REPORT
VALERO REFINING COMPANY
Application #24379 - Plant # 12626

3400 East Second St.
Benicia, CA 94510

I. BACKGROUND

Valero has applied for condition changes to the Permits to Operate for the following equipment:

S-1 Claus Sulfur Recovery Unit A
S-2 Claus Sulfur Recovery Unit B
S-5 FCCU Catalyst Regnerator
S-17 Butane Flare
S-26 Cat Naphtha Hydrofiner Heater (F-801)
S-157 Sulfur Storage Pit
S-200 Wastewater Treatment Equipment

This application is considered as an Administrative Change because there is no emission increase associated with incorporating or correcting the permit conditions related to Valero's Consent Decree. The Consent Decree referenced in this condition is: Case No. SA-05-CA-0569-RF; United States of America v. Valero Refining Company – California, et. Al. in the United States District Court,/Western Division of Texas, San Antonio Division, Lodged 6/15/2005 and entered 11/23/2005. Valero would like to use Condition # 24245 to keep track of all consent decree permit conditions. The details of the changes are listed below:

Condition 125 for S-1 Claus Sulfur Recovery Unit A: Part 9 and 10 were replaced by Condition #24245, Parts 36, 37, 38, 39, 40 and 41, which are taken from the Consent Decree XII.A Paragraphs 220(15.), 221, 224, 225, 226 and 227, respectively.

Condition 126 for S-2 Claus Sulfur Recovery Unit B: Part 9 and 10 were replaced by Condition #24245, Parts 36, 37, 38, 39, 40 and 41, which are taken from the Consent Decree XII.A Paragraphs 220(15.), 221, 224, 225, 226 and 227, respectively.

Condition 11879 for Source S-131, S-150, S-194, S-195, S-197, S-198, S-199 and S-200 Wastewater Treatment Equipment abated by A37 Carbon Canisters and/or A-57 and/or A-68 Thermal Oxidizers: Part 18 was replaced by Condition #24245, Parts 47, 48, 49 and 50, which are taken from the Consent Decree X.E Paragraphs 141, 142, 143 and 144, respectively.

Condition 11880 for Source S-193, S-196, S-205 and S-206 Wastewater Diversion and Surge Tanks abated by A36 Carbon Canisters and/or A-65 Thermal Oxidizer: Part 16 was replaced by Condition #24245, Parts 47, 48, 49 and 50, which are taken from the Consent Decree X.E Paragraphs 141, 142, 143 and 144, respectively.

Condition 20820 for Sources S-5 and S-6 abated by S-1059, S-1060 Pipestill Furnaces and A-1059 and A-1060 SCRs: Part 69b was replaced by Condition #24245, Part 14, which are taken from the Consent Decree VI.B Paragraph 90.

Condition 24329 for Source S-5 FCCU Catalyst Regenerator abated by S-1059, S-1060 Pipestill Furnaces and A-1059 and A-1060 SCRs: Parts 1 through 7 were replaced by Condition #24245,

Parts 17 through 22, which are taken from the Consent Decree VII Paragraphs 94, 95, 96, 100, 101 and 102.

Condition 24245, Parts 1-7 for various sources were replaced by the following Parts because the District wants to use word for word conditions as written in the Consent Decree:
Part 1 for S-18 South Flare and S-19 North Flare was replaced by Part 35, 42 and 43, which was taken from the Consent Decree XII.C Paragraph 235.

Part 2 for S-18 South Flare and S-19 North Flare was replaced by Parts 44 and 45, which was taken from the Consent Decree XII.C Paragraph 241.

Part 3 for combustion exemption in flaring device of process upset gases was replaced by Parts 35 and 46, which was taken from the Consent Decree XII.C Paragraph 241.

Part 4 for "affected facilities" was replaced by Parts 9, 29, 30 and 34, which were taken from the Consent Decree Paragraphs 13, 115, 118 and 122. Part 29 through 34 were incorporated to include the Consent Decree requirements for SO2 and NSPS Subpart A & J for heaters and boilers. Part 30 indicated the NSPS compliance date of December 31, 2010 for S-26 Cat Naphtha Hydrofiner Heater.

Part 5 for notification exemption of "affected facility" was replaced by Part 32, which was taken from the Consent Decree IX Paragraph 120.

Part 6 for compliance demonstration of "affected facility" was replaced by Part 33, which was taken from the Consent Decree IX Paragraph 121.

Part 7 for accuracy test of "affected facility" was replaced by Part 33, which was taken from the Consent Decree IX Paragraph 121.

Condition 24245 Parts 8 through 12 were incorporated to include the Consent Decree requirements for NOx emission reduction from Heaters and Boilers.

Condition 24245 Parts 13 through 16 were incorporated to include the Consent Decree requirement for SO2 emission reduction at S-6 Fluid Coker.

Condition 24245 Part 17 through 24 were incorporated to include the Consent Decree requirements for CO, Opacity and Particulate emissions from S-5 FCCU.

Condition 24245 Part 25 through 28 were incorporated to include the Consent Decree requirements for NSPS Subpart A & J related to SO2 emission from S-5 FCCU Regenerators.

Condition 24245 Part 35 was incorporated to include the Consent Decree requirements of NSPS Subpart J for S-17 Butane Tank Flare, which became applicable by December 31, 2011.

II. EMISSION CALCULATIONS

There are no emission increases of any air pollutant for the condition changes covered by this application.

III. PLANT CUMULATIVE INCREASE SINCE 4/5/1991

The cumulative increase for this application is ZERO for all pollutants.

IV. TOXIC SCREENING ANALYSIS

Toxic emissions will not increase as a result of this application. Therefore, a toxic risk screening analysis is not required per Regulation 2-5.

V. BEST AVAILABLE CONTROL TECHNOLOGY

This application has no emission increase. BACT does not apply to all sources mentioned above per Regulation 2-2-301.

VI. OFFSETS

Offsets are not triggered since there are no emission increases from this application per Regulation 2-2-302.

VII. STATEMENT OF COMPLIANCE

This project is considered to be categorically exempt under the District's CEQA Regulation 2-1-312.1 and therefore not subject to CEQA review. This permit application is to modify permit conditions for existing or permitted sources or facilities that do not involve any increases in emissions or physical modifications.

Valero is not located within 1,000 feet of any school. The public notification requirements of Regulation 2-1-412 are not required.

PSD does not apply.

XVI. CONDITIONS

Condition# 125

Valero Refining Company - California
3400 E. Second Street
Benicia, Ca 94510

S-1 Sulfur Recovery Unit A
Previous Applications: 26227 (1977), 26878 (1979), 29808 (1984), 17850 (1997), 8028 (Oct 2003) 8427 (Dec 2003), 14443 (Aug 2006), 14604 (Oct 2006), 24379 (August 2012): Consolidated Consent Decree Requirements.

For Source S-1 Claus (F-1301A, Natural Gas)

1. The Owner/Operator shall provide reasonable access to 24 hour sulfur production data whenever the APCO or his/her designated representative performs compliance determination on the Sulfur Recovery Unit (SRU), Tail Gas Clean-up Unit and main stack. [Basis: Banked POC credits]
2. Deleted [Basis: H2S monitor installation completed for S-1.]3. Except during upset conditions, the Owner/Operator shall not open the motor operated valve (MOV-001), which allows Tail Gas from S-1 to flow to the incinerator (F-1302A; A-14), when either of the sour gas feed valves (F002, F004) to source (S-1) are open. A closed block valve or blind in the pertinent lines shall be considered sufficient to fulfill this requirement. [Basis: Regulation 9-1-313.2, odors]
4. Except during upset conditions, the Owner/Operator shall route and clean the tail gases from the S-1 Sulfur Recovery Unit to the Beavon and Flexsorb SE Tail Gas Treatment Units (A-24, A-62 and A-56). The Owner/Operator shall return the recovered hydrogen sulfide to the S-1 and/or S-2 SRU for recovery as elemental sulfur. [Basis: Regulation 9-1-313.2, odors]
5. The total emissions from natural gas firing in both A-24 and A-62 Reducing Gas Generators shall not exceed the following limits:

Pollutant	lb/hr	tons/yr
NOx:	1.842	8.064
CO:	1.547	6.774
POC:	0.102	0.444
PM10:	0.140	0.613
SO2:	0.011	0.048

(Basis: Offsets, Cumulative Increase)

6. The Owner/Operator of A-24 shall fire the Reducing Gas Generator only with natural Gas not to exceed a maximum heat release of 9.1 MMBtu/hr, a maximum natural gas fuel rate of 13,500 SCFH, and a maximum annual natural gas consumption of 108 MMSCF (12,275 annual average). (Basis: Cumulative Increase, Toxics)
7. Within 60 days of the start up of the parallel operation of A-24 and A-62 Tail Gas Treatment Units, the Owner/Operator shall conduct an initial District approved source test to demonstrate the emission changes caused by the operation of the two Beavon Process Reducing Gas Generators simultaneously. This source test shall measure the NOx, CO, POC, PM10 and SO2 emissions before and after the startup of the second Tail Gas Treatment unit. Reasonable steps shall be taken in the refinery to maximize natural gas firing to both units. The Owner/Operator shall submit the results of the source test to the Source Test Section within 60 days of the source test. (Basis: Compliance determination, Cumulative Increase, Offsets)
8. The owner/operator shall conduct a District approved source test annually to demonstrate compliance with the NOx limits of Part 5. The Owner/Operator shall submit the results of the source test to the Source Test Section within 60 days of the source test. (Basis: Cumulative Increase, Offsets)
9. Deleted (Initial H2S source test completed and Consent Decree requirement replaced by Consent Decree Condition 24245 Parts 36, 37, 38, 39, and 41).

Deleted (Replaced by Consent Decree Condition 24245 Parts 36, 37, 38, 39, and 41).

Condition# 126

Valero Refining Company - California
3400 E. Second Street
Benicia, Ca 94510

S-2 Sulfur Recovery Unit B
Previous Applications: 26227(1977), 26878(1979), 29808
(1984), 17850 (1997), 8028 (Oct 2003) 8427 (Dec 2003), 14443 (Aug 2006), 14604 (Oct 2006), 24379 (August 2012): Consolidated Consent Decree Requirements.

For Source S-2 Claus (F-1301B, Natural Gas]

1. The Owner/Operator shall provide reasonable access to 24 hour sulfur production data whenever the APCO or his/her designated representative performs compliance determinations on the Sulfur Recovery Unit (SRU), Tail Gas Clean-up Unit and main stack. [Basis: BAAQMD 9-1-313.2]
2. Deleted [Basis: H2S monitor installation completed for S-2.][3. Except during upset conditions, the Owner/Operator shall not open the motor operated valve (MOV-003), that allows Tail Gas from S-2 to flow to the incinerator (F-1302B; A-15) when either of the sour gas feed valves (F052, F054) to source S-2 are open. A closed block valve or blind in the pertinent lines shall be considered sufficient to fulfill this requirement. [Basis: Regulation 9-1-313.2]
4. Except during upset conditions, the Owner/Operator shall route and clean the tail gases from the S-2 Sulfur Recovery Unit to the Beavon and Flexsorb SE Tail Gas Treatment Units (A-24, A-62 and A-56). The Owner/Operator shall return the recovered hydrogen sulfide the S-1 and/or S-2 SRU for recovery as elemental sulfur. [Basis: Regulation 9-1-313.2]
5. The total emissions from natural gas firing in both A-24 and A-62 Reducing Gas Generators shall not exceed the following limits:

Pollutant	lb/hr	tons/yr
NOx:	1.842	8.064
CO:	1.547	6.774
POC:	0.102	0.444
PM10:	0.140	0.613
SO2:	0.011	0.048

(Basis: Offsets, Cumulative Increase)

6. The Owner/Operator of A-62 shall fire the Reducing Gas Generator only with natural Gas not to exceed a maximum heat release of 9.1 MMBtu/hr, a maximum natural gas fuel rate of 13,500 SCFH, and a maximum annual natural gas consumption of 108 MMSCF (12,275 annual average). (Basis: Cumulative Increase, Toxics)
7. Within 60 days of the start up of the parallel operation of A-24 and A-62 Tail Gas Treatment Units, the Owner/Operator shall conduct an initial District approved source test to demonstrate the emission changes caused by the operation of the two Beavon Process Reducing Gas Generators simultaneously. This source test shall measure the NOx, CO, POC, PM10 and SO2 emissions before and after the startup of the second Tail Gas Treatment unit. Reasonable steps shall be taken in the refinery to maximize natural

gas firing to both units. The Owner/Operator shall submit the results of the source test to the Source Test Section within 60 days of the source test. (Basis: Compliance determination, Cumulative Increase, Offsets)

8. The owner/operator shall conduct a District approved source test annually to demonstrate compliance with the NOx limits of Part 5. The Owner/Operator shall submit the results of the source test to the Source Test Section within 60 days of the source test. (Basis: Cumulative Increase, Offsets)
9. Deleted (Initial H2S source test completed and Consent Decree requirement replaced by Consent Decree Condition 24245 Parts 36, 37, 38, 39, and 41).

10. Deleted (Replaced by Consent Decree Condition 24245 Parts 36, 37, 38, 39, and 41).

Condition# 11879

For Source S-131, S-150, S-194, S-195, S-197, S-198, S-199 and S-200 Wastewater Treatment Equipment abated by A37 Carbon Canisters and/or A-57 and/or A-68 Thermal Oxidizers
Application 16938/16939 (Title V) Consolidated WWTP Conditions
Application 15934/19793 (Title V) Diversion Area Thermal Oxidizer A-65
Application 20690/22052 (Title V) Added A-68 Thermal Oxidizer WWTP
Application 24379 (August 2012): Consolidated Consent Decree Requirements

2. The Owner/Operator shall abate sources S-131, S-150, S-194, S-195, S-197, S-198, S-199 and S-200 by A-37 Carbon Canisters (two 700 lb (minimum) canisters in series) and/or A-57 and/or A-68 Thermal oxidizers at all times when the sources are in service, except during inspection, maintenance and wastewater sampling. [Basis: Cumulative Increase]

2. The Owner/Operator shall limit the total combined effluent from S-194, S-195, S-197 and S-198 to not exceed 3000 gallons per minute. The owner/operator shall maintain records for each day of total combined flow rate of influent wastewater and made available for inspection by the District for at least five years following the date the data is recorded. [Basis: Cumulative Increase, recordkeeping]

3. The Owner/Operator shall limit the emissions of nitrogen oxides (NOx) from the A-57 or A-68 Thermal Oxidizer to no more than 50 ppm each, by volume, dry, corrected to 15% oxygen, as determined by the applicable BAAQMD Source Test Method. [Basis: RACT, source Test Method 13A]

4. The Owner/Operator shall limit the emissions of carbon monoxide (CO) from the A-57 or A-68 Thermal Oxidizer to no more than 350 ppm each, by volume, dry, corrected to 15% oxygen, as determined by the applicable BAAQMD Source Test Method. [Basis: RACT, Source Test Method 6]

5. The owner/operator shall operate A-57 and A-68 to meet the following VOC destruction efficiency requirements, depending on the applicable inlet VOC concentration:
    a. VOC destruction efficiency > 98.5% if A-57 or A-68 inlet VOC concentration > 2,000 ppmv;
    b. VOC destruction efficiency > 97% if A-57 or A-68 inlet VOC concentration > 200 to < 2,000 ppmv;

c. VOC destruction efficiency > 90% if A-57 or A-68 inlet VOC concentration < 200 ppmv.

(basis: Cumulative Increase; BACT)

6. The Owner/Operator shall operate A-57 and A-68 Thermal Oxidizer at a minimum temperature of 1400 degrees Fahrenheit. The District may adjust this minimum temperature if source test data demonstrate that an alternate temperature is necessary for maintaining compliance with Parts 3, 4, 5, and 10. [Basis: Cumulative Increase]

7. To determine compliance with the temperature requirement in Part 6, the Owner/Operator shall equip the A-57 and A-68 Thermal Oxidizers with a temperature measuring device capable of continuously measuring and recording the oxidation temperature in A-57 and A-68. The Owner/Operator shall install and maintain the temperature measuring device in accordance with manufacturer's recommendations. [Basis: Regulation 2-1-403]

8. The Owner/Operator shall equip the A-37 Carbon Canisters with District approved analyzers that continuously indicate and record the flow rate and total hydrocarbon VOC concentration in the outlet gas stream of the second canister. [Basis: Cumulative Increase]

9. The Owner/Operator shall install a flow indicator or equivalent device on the vent streams from S-131, S-150, S-194, S-195, S-197, S-198, S-199 and S-200 to the A-37 Carbon Canisters and/or the A-57 and/or A-68 Thermal Oxidizers to ensure that the vapors from the wastewater sources are being routed to the control equipment. [Basis: Cumulative Increase]

10. The Owner/Operator shall limit the total combined non-methane hydrocarbon (NMHC) emissions at the outlets of the second carbon canisters of A-36 and A-37 and from the Thermal Oxidizers A-57, A-65 and A-68 to no more than 15 pounds per day, as averaged over one month. [Basis: Regulation 2-1-403]

11. To demonstrate compliance with Part 10 for A-37, the Owner/Operator shall determine the NMHC from the carbon canisters using the flow rates and total hydrocarbon analyzer readings at the outlets of the second carbon canisters of in accordance with ST-7 of the District's Manual of Procedures Volume IV. The Owner/Operator shall use District approved monitors. The Owner/Operator shall calculate the NMHC concentration by subtracting the average known methane content concentration of 2500 parts per million (PPM) from the total hydrocarbon analyzer reading measured at the outlets of the second carbon canisters of A-37. Alternatively, the methane contents concentration can also be obtained by actual gas samples. [Basis: Cumulative Increase]

12. To demonstrate compliance with Part 10 for A-57 and A-68, the Owner/Operator shall determine the NMHC emissions from the Thermal Oxidizers based upon the results of the District approved initial source test(s). [Basis: Cumulative Increase]

13. To demonstrate compliance with Part 10, the Owner/Operator shall maintain the following records in a District approved log. These records shall be kept on site and made available for District inspection for a period of at least 60 months from the date on which a record is made. [Basis: Cumulative Increase]
    a. Daily NMHC emission rate in pounds per day.
    b. Daily NMHC emission rate, as averaged over one month, in pounds per day.

c. Carbon canister daily flow rate and outlet NMHC concentrations.
d. Carbon canister changeout dates.
e. Total volume of gas recorded between carbon canister changeouts.

15. The Owner/Operator shall not fire more than 95,738 gallons of propane at the Thermal Oxidizer A-68 during any consecutive 12 month periods. [Basis: cumulative increase]

15. The temperature limit in Part 6 shall not apply during an "Allowable Temperature Excursion", provided that the temperature controller set point complies with the temperature limit. An Allowable Temperature Excursion is one of the following:
a. A temperature excursion not exceeding 20 degrees F (below the setpoint); or
b. A temperature excursion for a period or periods which when combined are less than or equal to 15 minutes in any hour; or
c. A temperature excursion for a period or periods which when combined are more than 15 minutes in any hour, provided that all three of the following criteria are met.
i. the excursion does not exceed 50 degrees F (below the setpoint);
ii. the duration of the excursion does not exceed 24 hours; and
iii. the total number of such excursions does not exceed 12 per calendar year.

Two or more excursions greater than 15 minutes in duration occurring during the same 24-hour period shall be counted as one excursion toward the 12-excursion limit. (basis: Regulation 2-1-403)

16. For each Allowable Temperature Excursion that exceeds 20 degrees F (below the setpoint) and 15 minutes in duration, the Permit Holder shall keep sufficient records to demonstrate that they meet the qualifying criteria described above. Records shall be retained for a minimum of five years from the date of entry, and shall be made available to the District upon request. Records shall include at least the following information:
a. Temperature controller setpoint;
b. Starting date and time, and duration of each Allowable Temperature Excursion;
c. Measured temperature during each Allowable Temperature Excursion;
d. Number of Allowable Temperature Excursions per month, and total number for the current calendar year; and
e. All strip charts or other temperature records.

(basis: Regulation 2-1-403)

17. The owner/operator shall maintain the following records for each month of operation of the Thermal Oxidizers A-57 and A-68: [Basis: Recordkeeping]
a. The hours and times of operation and which sources A-68 is controlling
d. Temperature of A-57 and A-68
e. The fuel usage of A-68

All measurements, records and data required to be maintained by the operator shall be retained and made available for inspection by the District for at least five years following the date the data is recorded.

18. Deleted. (Replaced by Consent Decree Condition 24245 Parts 47, 48, 49, and 50).

Condition # 11880
For Sources S-193, S-196, S-205 and S-206 Wastewater Diversion and Surge Tanks
Abated by A-36 Carbon Canisters and A-65 Thermal Oxidizer
Updated by Application 15934/19793 (Title V) Diversion Area Thermal Oxidizer A-65
Updated by Application 20690/22052 Added A-68 Thermal Oxidizer WWTP
Application 24379 (August 2012): Consolidated Consent Decree Requirements

2. The Owner/Operator shall abate S-193, S-196, S-205 and S-206 using two 1200 lb (minimum) carbon canisters in series (A-36) and/or A-65 thermal oxidizer at all times. [Basis: Cumulative Increase]

2. The Owner/Operator shall limit the combined non-methane hydrocarbons (NMHC) emissions at the outlets of the second carbon canisters of A-36 and A-37, and from the Thermal Oxidizers A-57,A-65 and A-68 to no more than 15 pounds per day, as averaged over one month. [Basis: Regulation 2-1-403]

3. To demonstrate compliance with Part 2 for A-36, the Owner/Operator shall determine the NMHC flow rates and NMHC concentrations at the outlets of the second carbon canisters of A-36 in accordance with ST-7 of the District's Manual of Procedures Volume IV. The Owner/Operator shall use District approved monitors. NMHC concentration shall be calculated by subtracting the average known methane content of 2500 parts per million (PPM) from the total hydrocarbon analyzer reading measured at the outlets of the second carbon canisters of A-36. Alternatively, the methane contents can also be obtained by actual gas samples. [Basis: Cumulative Increase]

   To demonstrate compliance with Part 2 for A-65, the Owner/Operator shall determine the NMHC emissions from the Thermal Oxidizer based upon the results of the District-approved initial source test(s). [Basis: Cumulative Increase]

4. To demonstrate compliance with Part 2, the Owner/Operator shall maintain the following records in a District approved log. These records shall be kept on site and made available for District inspection for a period of at least 60 months from the date on which a record is made. [Basis: Cumulative Increase]
   a. Daily NMHC emission rate in pounds per day.
   b. Daily NMHC emission rate, as averaged over one month, in pounds per day.
   c. Carbon canister daily flow rate and outlet NMHC concentrations.
   d. Carbon canister changeout dates
   f. Total volume of gas recorded between carbon canister changeouts.

5. Deleted. [Basis: The inspection and maintenance program for fugitive components is covered under Regulation 8, Rule 18.]

6. Deleted. [Basis: The inspection and maintenance program for fugitive components is covered under Regulation 8, Rule 18.]

7. The Owner/Operator shall equip the A-36 Carbon Canisters with District approved analyzers that continuously indicates and record the flow rate and total hydrocarbon VOC concentration in the outlet gas stream of the second canister. [Basis: Cumulative Increase]

13. The Owner/Operator shall not fire more than 284,950 gallons of propane at the Thermal Oxidizer A-65 during any consecutive 12 month periods. [Basis: cumulative increase]

14. The Owner/Operator shall not emit more than 50 ppmvd NOx at 15% O2 from Thermal Oxidizer A-65. [Basis: RACT, Source Test Method 13A]

15. The Owner/Operator shall not emit more than 350 ppmvd CO at 15% O2 from Thermal Oxidizer A-65. [Basis: RACT, Source Test Method 6]

16. The Owner/Operator shall operate A-65 at a minimum temperature of 1400 degrees F. The District may adjust this minimum temperature, if source test data demonstrates that an alternate temperature is necessary for or capable of maintaining compliance with Parts 2, 9 and 10 above. [basis: Regulation 2-1-403]

17. To determine compliance with the temperature requirement in Part 11, the Owner/Operator shall equip A-65 with a temperature measuring device capable of continuously measuring and recording the temperature in A-65. The Owner/Operator shall install and maintain the temperature measuring device in accordance with manufacturer's recommendations. [basis: Regulation 2-1-403]

13. The temperature limit in Part 11 shall not apply during an "Allowable Temperature Excursion", provided that the temperature controller set point complies with the temperature limit. An Allowable Temperature Excursion is one of the following:
    a. A temperature excursion not exceeding 20 degrees F (below the setpoint); or
    b. A temperature excursion for a period or periods which when combined are less than or equal to 15 minutes in any hour; or
    c. A temperature excursion for a period or periods which when combined are more than 15 minutes in any hour, provided that all three of the following criteria are met.
        i. the excursion does not exceed 50 degrees F (below the setpoint);
        ii. the duration of the excursion does not exceed 24 hours; and
        iii. the total number of such excursions does not exceed 12 per calendar year.

    Two or more excursions greater than 15 minutes in duration occurring during the same 24-hour period shall be counted as one excursion toward the 12-excursion limit. (basis: Regulation 2-1-403)

14. For each Allowable Temperature Excursion that exceeds 20 degrees F (below the setpoint) and 15 minutes in duration, the Permit Holder shall keep sufficient records to demonstrate that they meet the qualifying criteria described above. Records shall be retained for a minimum of five years from the date of entry, and shall be made available to the District upon request. Records shall include at least the following information:
    a. Temperature controller setpoint;
    b. Starting date and time, and duration of each Allowable Temperature Excursion;
    c. Measured temperature during each Allowable Temperature Excursion;
    d. Number of Allowable Temperature Excursions per month, and total number for the current calendar year; and
    e. All strip charts or other temperature records.

    (basis: Regulation 2-1-403)

15. The owner/operator shall maintain the following records for each month of operation of the Thermal Oxidizer A-65: [Basis: Recordkeeping]
    a. The hours and times of operation and which sources A-65 is controlling Temperature of A-65
    c. The fuel usage of A-65

All measurements, records and data required to be maintained by the operator shall be retained and made available for inspection by the District for at least five years following the date the data is recorded.

16. Deleted. (Replaced by Consent Decree Condition 24245 Parts 47, 48, 49, and 50).

17. The owner/operator shall operate A-65 to meet the following VOC destruction efficiency requirements, depending on the applicable inlet VOC concentration:
    a. VOC destruction efficiency > 98.5% if A-65 inlet VOC concentration > 2,000 ppmv;
    b. VOC destruction efficiency > 97% if A-65 inlet VOC concentration > 200 to < 2,000 ppmv;
    c. VOC destruction efficiency > 90% if A-65 inlet VOC concentration < 200 ppmv.
    (basis: Cumulative Increase; BACT)

Condition # 20820, VIP Application No. 5864,
Amended by VIP Amendments, Application No. 16937,
Amended by Application No. 15606 to revise the NMOC baseline.
Amended by Application No. 22710 to add Consent Decree RATA allowance for S-1059 and S-1060, Feb 2011
APPLICATION 24379 (August 2012): Consolidated Consent Decree Requirements

69.b Deleted (Replaced by Consent Decree Condition 24245 Part 14). ~~(CEMS will be used to demonstrate compliance with the respective SO2 concentration emission limits established pursuant to this Part VI. Valero and Tesoro, as applicable, shall make CEMS data available to EPA and any appropriate Plaintiff-Intervener upon demand as soon as practicable. Except as specified in Paragraph 93, Valero shall install, certify, calibrate, maintain and operate all CEMS required by this paragraph in accordance with the provisions of 40 C.F.R. § 60.13 that are applicable to CEMS (excluding those provisions applicable only to continuous opacity monitoring systems) and Part 60, Appendices A and F, and the applicable performance specification test of 40 C.F.R. Part 60, Appendix B. With respect to 40 C.F.R. Part 60 Appendix F, in lieu of the requirements of 40 C.F.R. Part 60, Appendix F §§ 5.1.1, 5.1.3 and 5.1.4, the Companies must conduct either a RAA or a RATA on each CEMS at least once every three (3) years. The Companies must also conduct a CGA each calendar quarter during which a RAA or a RATA is not performed. With respect to their Benicia and Golden Eagle Refineries, Valero and Tesoro, as applicable, may conduct a FAT, as defined in BAAQMD regulations or procedures, in lieu of the required RAA or CGA. [Basis: EPA Consent Decree, Paragraph 90)~~

CONDITION 23446
APPLICATION 16656 (Jan 2008), S-157 Maintenance Allowance
APPLICATION 24379 (August 2012): Consolidated Consent Decree Requirements

S157 Sulfur Storage Pit

1. The owner/operator shall abate the Sulfur Storage Pit (S-157) by either the sulfur Recovery Unit A Train Acid Gas Burner (S-1) and/or the Sulfur Recovery Unit B Train Acid Gas Burner (S-2) at all times, when S-1 and/or S-2 is in operation, except for up to 240 hours per calendar year to perform maintenance on S-157 vapor recovery/sparger system. (Basis: cumulative increase)

2. In order to demonstrate compliance with Part 1, the owner/operator of S-157 shall record the maintenance hours for S-157 vapor recovery/sparger system, summarized on a quarterly basis in a District approved log. These records shall be kept on site and made available for District inspection for at least five years from the date that the record was made. (Basis: Recordkeeping)

CONDITION 24239

S-5 FCCU Catalyst Regenerator
APPLICATION 18165 (April 2008/Jan 2009), Add NSPS Subpart J CO and PM emission standards per Consent Decree.
APPLICATION 24379 (August 2012): Consolidated Consent Decree Requirements

1. Deleted (Replaced by Consent Decree Condition 24245 Part 19).

2. Deleted (Replaced by Consent Decree Condition 24245 Part 17).

3. Deleted (Replaced by Consent Decree Condition 24245 Part 18).

4. Deleted (Replaced by Consent Decree Condition 24245 Part 22).

5. Deleted (Replaced by Consent Decree Condition 24245 Part 20).

6. Deleted (Replaced by Consent Decree Condition 24245 Part 21).

7. Alternative Monitoring Plans for NSPS J compliance.
    a. Alternative monitoring for CO. Compliance with CO achieved through use of 40 CFR Part 63, Subpart UUU, 63.1565(b)(1)(ii) option to vent emissions to a boiler or process heater with a design capacity of at least 44 MW in lieu of CO CEMS. AMP approved by EPA January 10, 2007.
    b. Alternative monitoring for PM. Compliance with PM demonstrated through use of a Site-Specific Test Plan used to determine the FCCU regenerator contribution to Main Stack PM emissions. AMP approved by

EPA January 10, 2007.

c. Alternative monitoring for Opacity. Compliance with opacity demonstrated by CPMS AMP submitted to EPA on October 27, 2010 in accordance with Condition 20820, Part 63b.
d. Alternative monitoring for O2 CEMS span. Compliance with O2 CEMS span specification demonstrated by AMP submitted to EPA in October 2012. (Basis: 40 CFR Part 60.13(i), Alternate Monitoring Plans, Consent Decree Condition 24245, Parts 21, 23, and 24)

CONDITION # 24245

APPLICATION 18165 (Jan 2009): Add NSPS Subpart J SO2 emission standards per Consent Decree
APPLICATION 24379 (June 2012): Consolidated Consent Decree Requirements

NOTE: The Consent Decree referenced in this condition is: Case No. SA-05-CA-0569-RF; United States of America v. Valero Refining Company – California, et. Al. in the United States District Court,/Western Division of Texas, San Antonio Division, Lodged 6/15/2005, Entered 11/23/2005.

2. Deleted (Replaced by Consent Decree Condition 24245, Parts 35, 42 and 43).

3. Deleted (Replaced by Consent Decree Condition 24245, Parts 44 and 45).

4. Deleted (Replaced by Consent Decree Condition 24245, Parts 35 and46).

5. Deleted (Replaced by Consent Decree Condition 24245, Parts 9, 29, 30, and 34).

6. Deleted (Replaced by Consent Decree Condition 24245, Part 32).

7. Deleted (Replaced by Consent Decree Condition 24245, Part 33).

8. Deleted (Replaced by Consent Decree Condition 24245, Part 33).

NOx Emissions Reductions from Heaters and Boilers

8. Valero shall implement various NOx emission reduction measures and techniques to achieve system-wide NOx emission levels for certain identified heaters and boilers at Valero's Benicia Refinery. For purposes of this Consent Decree, "heaters and boilers" shall be defined to include any stationary combustion unit used for the purpose of burning fossil fuel for the purpose of (i) producing power, steam or heat by heat transfer or (ii) heating a material for initiating or promoting a process or chemical reaction in which the material participates as a reactant or catalyst, but expressly excluding any turbine, internal combustion engine, duct burner, CO boiler, incinerator or incinerator waste heat boiler. (Basis: Consent Decree IV.A Paragraph12)

9. Appendix B to this Consent Decree (the "Initial Inventory") provides an initial list of all heaters and boilers for which heat input capacity is greater than 40 MMBTU/hr (HHV). For purposes of

this Consent Decree, "Covered Heaters and Boilers" shall include all heaters and boilers with heat input capacity greater than 40 MMBTU/hr (HHV) regardless of any applicable firing rate permit limitations. (Basis: Consent Decree IV.A Paragraph13)

Appendix B of the Consent Decree
Initial Inventory of covered Heaters and Boiler

F-351 H2 Reforming Furnace, NOx CEMs installed
F-351 H2 Reforming Furnace, NOx CEMs installed
F-2901-4-(2) Powerformer Furnace, NOx CEMs installed
F-4460 MRU Hot Oil Furnace, NOx CEMs installed
SG-1032 New Boiler, NOx CEMs installed
F-701 FCCU Preheat Furnace, NOx CEMs installed
SG-2301 Utility Package Boiler, NOx CEMs installed
SG-2302 Utility Package Boiler, NOx CEMs installed
F-401 HCU Recycle Gas Furnace, NOx CEMs installed
SG-2901 Powerformer Aux. Boikler, no NOx CEMs
SG-703 FCCU Aux. Boiler, no NOx CEMs
F-2905 Powerformer Regen Furnace, no NOx CEMs
F-104 Naphtha HF Furnace, no NOx CEMs
F-103 Pipestill HF Jet Furnac, no NOx CEMs

10. The Initial Inventory identifies previously constructed heaters and boilers that comprise the initial list of Covered Heaters and Boilers. The Initial Inventory also provides the following information concerning the Covered Heaters and Boilers:
    a) Identification of all applicable NOx emission limitations, in pounds per million BTU, for each of the Covered Heaters and Boilers.
    b) Identification of heat input capacity, and the source of such identification, for each of the Covered Heaters and Boilers. For purposes of this subparagraph, heat input capacity for each Covered Heater or Boiler shall equal the lesser of any applicable permit limit or Valero's best then-current estimate of its maximum heat input capacity (hereinafter, "Heat Input Capacity");
    c) Identification of all applicable NOx emission limitations, in pounds per million BTU, for each of the Covered Heaters and Boilers. For purposes of this part, the applicable NOx emissions limitation for each of the Covered Heaters and Boilers at the Benicia Refinery shall be deemed 0.033lbs./MMBTU, as more fully described below; and
    d) Statement of whether a continuous emission monitoring system ("CEMS") for NOx has been installed on the respective Covered Heater or Boiler. (Basis: Consent Decree IV.A Paragraph14)

11. Valero shall satisfy Sections 9-10-301 and 9-10-403 of BAAQMD Regulation IX, Rule 10, as such provisions both relate to Covered Heaters and Boilers at the Benicia Refinery and establish NOx emission standards for certain units, including the Covered Heaters and Boilers at the Benicia Refinery, based upon an emission level of 0.033 lbs.-NOx/MMBTU. Compliance with these requirements shall be determined in accordance with BAAQMD's rules and regulations, including without limitation the interchangeable emission reduction credit ("IERC") provisions of BAAQMD Regulation II, Rule 9. Nothing in this Consent Decree is intended or shall be construed to limit the methods available to Valero under the BAAQMD rules and regulations for compliance with Sections 9-10-301 and 9-10-403 thereof; provided however, no credits generated under the BAAQMD rules and regulations may be traded or sold to another facility, as is expressly proscribed by Paragraph 296(d). (Basis: Consent Decree IV.A Paragraph 24)

12. For the purpose of demonstrating compliance, each of the Covered Heaters and Boilers at the Benicia Refinery shall be deemed to emit 0.033 lbs.-NOx/MMBTU (as 12-month averages). This paragraph imposes no independent permitting requirements upon the Benicia Refinery. (Basis: Consent Decree IV.A Paragraph 25)

SO2 Emission Reductions from FCCU

13. Valero shall install and operate a regenerative scrubber to control SO2 emissions from the Benicia Fluid Coker. Valero shall design and operate the regenerative scrubber and comply with emission limits of no greater than 25 ppmvd, measured as a 365-day rolling average and 50 ppmvd, measured as a 7-day rolling average, both at 0% O2. (Basis: Consent Decree VI.B Paragraph 67)

14. CEMS will be used to demonstrate compliance with the respective SO2 concentration emission limits established pursuant to this Part VI. Valero shall make CEMS data available to EPA and any appropriate Plaintiff-Intervener upon demand as soon as practicable. Except as specified in Paragraph 93, Valero shall install, certify, calibrate, maintain and operate all CEMS required by this paragraph in accordance with the provisions of 40 C.F.R. § 60.13 that are applicable to CEMS (excluding those provisions applicable only to continuous opacity monitoring systems) and Part 60, Appendices A and F, and the applicable performance specification test of 40 C.F.R. Part 60, Appendix B. With respect to 40 C.F.R. Part 60 Appendix F, in lieu of the requirements of 40 C.F.R. Part 60, Appendix F §§ 5.1.1, 5.1.3 and 5.1.4, Valero must conduct either a RAA or a RATA on the CEMS at least once every three (3) years. Valero must also conduct a CGA each calendar quarter during which a RAA or a RATA is not performed. Valero may conduct a FAT, as defined in BAAQMD regulations or procedures, in lieu of the required RAA or CGA. (Basis: Consent Decree VI.B Paragraph 90)

15. All CEMS data collected by Valero effective life of the Consent Decree shall be made available by Valero to EPA upon demand as soon as practicable. (Basis: Consent Decree VI.B Paragraph 92)

16. Valero shall submit to EPA a complete site specific monitoring plan for utilizing a combination of SO2/TRS CEMS upstream of the CO boiler at the Benicia Refinery. A new CEMS must be installed in the existing ductwork upstream of the CO boiler in order to monitor SO2/TRS in the FCCU flue gas prior to mixing with the Coker Unit flue gas. The existing ductwork configuration may make it impossible to meet all Appendix A requirements for CEMS locations. Valero will locate the CEM in the most appropriate location available. (Consent Decree VI.B Paragraph 93)

CO, OPACITY AND PARTICULATE EMISSIONS FROM FCCU

17. CO Emission Standard. Valero shall limit CO emissions from the FCCU to 500 ppmvd (at 0% O2), measured as a one-hour block average. (Basis: Consent Decree VII Paragraph 94).

18. Particulate Emission Standard. Valero shall limit particulate emissions from the FCCU to one (1) pound per 1,000 pounds of coke burned (front half only according to Method 5B or 5F, as appropriate), measured as a one-hour average over three performance test runs. (Basis: Consent Decree VII Paragraph 95).

19. Except as specified in Paragraph 105, Valero shall ensure that the FCCU shall comply with the CO, opacity and particulate emission standards specified in Paragraphs 94 and 95, respectively, and all applicable requirements of 40 C.F.R. Part 60, Subparts A and J, as such requirements relate to CO, opacity and particulate emissions from the FCCU regenerator. (Basis: Consent Decree VII Paragraph 96).

20. Lodging of this Consent Decree shall satisfy any obligation otherwise applicable to Valero to provide notification in accordance with 40 C.F.R. Part 60, Subparts A and J, including without limitation 40 C.F.R. § 60.7, with respect to the provisions of 40 C.F.R. Part 60, Subparts A and J, as such requirements relate to CO, opacity and particulate emissions from FCCU regenerators. (Basis: Consent Decree VII Paragraph 100).

21. A CEMS or an EPA approved alternative monitoring plan or monitoring waiver will be used to demonstrate compliance with the respective CO emission limits established pursuant to this Part VII. Valero shall make CEMS data available to EPA and any appropriate Plaintiff-Intervener upon demand as soon as practicable. Valero shall install, certify, calibrate, maintain and operate all CEMS required by this paragraph in accordance with the provisions of 40 C.F.R. § 60.13 that are applicable to CEMS (excluding those provisions applicable only to continuous opacity monitoring systems) and Part 60, Appendices A and F, and the applicable performance specification test of 40 C.F.R. Part 60, Appendix B. With respect to 40 C.F.R. Part 60 Appendix F, in lieu of the requirements of 40 C.F.R. Part 60, Appendix F §§ 5.1.1, 5.1.3 and 5.1.4, Valero must conduct either a RAA or a RATA on each CEMS at least once every three (3) years. Valero must also conduct a CGA each calendar quarter during which a RAA or a RATA is not performed. B. To the extent that Valero has conducted any performance testing of the relevant unit for PM emissions, and such performance testing was conducted in accordance with the procedures specified in EPA Method 5B or 5F, as appropriate, or 40 C.F.R. Part 63, Subpart UUU, and demonstrated compliance with the emission limits established under this part, then such performance testing shall satisfy any obligation otherwise applicable under this Part to conduct performance testing under 40 C.F.R. Part 60, Subparts A and J. Any future performance testing performed by Valero to demonstrate compliance with the particulate emission limitations established by this Part shall be conducted in accordance with EPA Method 5B or 5F, as appropriate, set forth at 40 C.F.R. Part 60, Appendix A. (Basis: Consent Decree VII Paragraph 101)

22. The CO, opacity, and particulate limits established pursuant to this Part VII shall not apply during periods of startup, shutdown or malfunction of the FCCU or malfunction of the applicable CO or particulate control equipment, if any, provided that during startup, shutdown or malfunction, Valero shall, to the extent practicable, maintain and operate the relevant affected facility, including associated air pollution control equipment, in a manner consistent with good air pollution control practices for minimizing emissions. (Basis: Consent Decree VII Paragraph 102)

23. Continuous Opacity Monitoring System (COMS) or an approved AMP will be used to demonstrate compliance with the respective opacity limits established pursuant to this Part VII. Valero shall make COMS data available to EPA and any appropriate Plaintiff-Intervener upon demand as soon as practicable. Valero shall install, certify, calibrate, maintain and operate all COMS required by this paragraph in accordance with the provisions of 40 C.F.R. §60.11, §60.13, and Part 60 Appendix A, and the applicable performance specification test in 40 C.F.R. Part 60 Appendix B. (Basis: Consent Decree VII Paragraph 103)

24. Valero shall submit to EPA complete alternative monitoring plan ("AMP") applications to utilize engineering calculations to convert CO and opacity emission data recorded by the CEMS on, and particulate emission data measured during the performance test of, the Benicia combined FCCU/Fluid Coker emissions to equivalent CO, opacity, and particulate emissions from the FCCU. (Basis: Consent Decree VII Paragraph 105)

NSPS APPLICABILITY TO SO2 EMISSIONS FROM FCCU REGENERATORS

25. Valero's FCCU Regenerator shall be considered "affected facilities" pursuant to 40 C.F.R. Part 60, Subpart J, and shall comply with all requirements of 40 C.F.R. Part 60, Subparts A and J, as such provisions relate to SO2 emissions from FCCU Regenerators. (Basis: Consent Decree VIII Paragraph 107)

26. Lodging of this Consent Decree shall satisfy any obligation otherwise applicable to Valero to provide notification in accordance with 40 C.F.R. Part 60, Subparts A and J, including without limitation 40 C.F.R. § 60.7, with respect to the provisions of 40 C.F.R. Part 60, Subparts A and J, as such provisions relate to SO2 emissions from FCCU regenerators. (Basis: Consent Decree VIII Paragraph 108)

27. CEMS will be used to demonstrate compliance with the respective SO2 emission limits established pursuant to this Part VIII. Valero shall make CEMS data available to EPA and any appropriate Plaintiff-Intervener upon demand as soon as practicable. Valero shall install, certify, calibrate, maintain and operate all CEMS required by this paragraph in accordance with the provisions of 40 C.F.R. § 60.13 that are applicable to CEMS (excluding those provisions applicable only to continuous opacity monitoring systems) and Part 60, Appendices A and F, and the applicable performance specification test of 40 C.F.R. Part 60, Appendix B. With respect to 40 C.F.R. Part 60 Appendix F, in lieu of the requirements of 40 C.F.R. Part 60, Appendix F §§ 5.1.1, 5.1.3 and 5.1.4, Valero must conduct either a RAA or a RATA on each CEMS at least once every three (3) years. Valero must also conduct a CGA each calendar quarter during which a RAA or a RATA is not performed. Valero may conduct a FAT, as defined in BAAQMD regulations or procedures, in lieu of the required RAA or CGA. (Basis: Consent Decree VIII Paragraph 109)

28. The SO2 limits established pursuant to this Part shall not apply during periods of startup, shutdown or malfunction of the FCCU or the malfunction of SO2 control equipment, if any, provided that during startup, shutdown or malfunction, Valero shall, to the extent practicable, maintain and operate the relevant affected facility, including associated air pollution control equipment, in a manner consistent with good air pollution control practices for minimizing emissions. (Basis: Consent Decree VIII Paragraph 110)

SO2 AND NSPS REQUIREMENTS FOR HEATERS AND BOILERS

29. Valero shall ensure that all heaters and boilers located at the Benicia Refinery are "affected facilities" as fuel gas combustion devices, for purposes of 40 C.F.R. Part 60, Subpart J, and shall comply with all requirements of 40 C.F.R. Part 60, Subparts A and J, as such requirements apply to fuel gas combustion devices. (Basis: Consent Decree IX Paragraph 115)

30. All heaters and boilers shall comply with the applicable requirements of NSPS Subpart A and J for fuel gas combustion devices, except for those heaters or boilers listed in Appendix O, which shall be affected facilities and shall be subject to and comply with the requirements of NSPS Subparts A and J for fuel gas combustion devices by the dates listed in Appendix O. All CEMS installed pursuant to this paragraph shall be installed, certified, calibrated, maintained and operated in accordance with the applicable requirements of 40 C.F.R. §§ 60.11 and 60.13 and 40 C.F.R. Part 60, Appendix F as provided in Paragraph 121. (Basis: Consent Decree IX Paragraph 118)

Appendix O of the consent Decree
Specific Heater and Boiler NSPS Schedule

Heater/Boiler	NSPS Compliance Date
F-801 Cat Naphtha Hydrofiner Heater	December 31. 2010

31. Valero may submit to EPA complete alternative monitoring plan ("AMP") applications for NSPS Subpart J monitoring fuel gas combustion devices. Valero shall submit a complete AMP application to EPA and the appropriate Plaintiff-Intervener. If such AMP is not approved, Valero shall within ninety (90) days of receiving notice of such disapproval submit to EPA for approval, with a copy to the appropriate Plaintiff-Intervener, a plan and schedule that provides for compliance with the applicable monitoring requirements under NSPS Subpart J as soon as

practicable. Such plan may include a revised AMP application, physical or operational changes to the equipment, or additional or different monitoring. For some heaters and boilers that combust low-flow VOC streams from vents, pump seals and other sources, it is anticipated that some AMP applications will rely in part on calculating a weighted average H2S concentration of all VOC and fuel gas streams that are burned in a single heater or boiler and demonstrating with alternative monitoring that either the SO2 emissions from the heater or boiler will not exceed 20 ppm or that the weighted average H2S concentration is not likely to exceed 162 ppm H2S. EPA shall not reject an AMP solely due to the AMP's use of one of these approaches to demonstrating compliance with NSPS Subpart J. (Basis: Consent Decree IX Paragraph 119)

32. Lodging of this Consent Decree shall satisfy any obligation otherwise applicable to Valero to provide notification in accordance with 40 C.F.R. Part 60, Subparts A and J, including without limitation 40 C.F.R. § 60.7, with respect to the provisions of 40 C.F.R. Part 60, Subparts A and J, as such requirements apply to fuel gas combustion devices. (Basis: Consent Decree IX Paragraph 120)

33. The CEMS or approved AMPs will be used to demonstrate compliance with the respective H2S/SO2 concentration emission limits established pursuant to this Part IX. Valero shall make CEMS data available to EPA and any appropriate Plaintiff-Intervener upon demand as soon as practicable. Valero shall install, certify, calibrate, maintain and operate all CEMS required by this paragraph in accordance with the provisions of 40 C.F.R. § 60.13 that are applicable to CEMS (excluding those provisions applicable only to continuous opacity monitoring systems) and Part 60, Appendices A and F, and the applicable performance specification test of 40 C.F.R. Part 60, Appendix B. With respect to 40 C.F.R. Part 60 Appendix F, in lieu of the requirements of 40 C.F.R. Part 60, Appendix F §§ 5.1.1, 5.1.3 and 5.1.4, Valero must conduct either a RAA or a RATA on each CEMS at least once every three (3) years. Valero must also conduct a CGA each calendar quarter during which a RAA or a RATA is not performed. Valero may conduct a FAT, as defined in BAAQMD regulations or procedures, in lieu of the required RAA or CGA. (Basis: Consent Decree IX Paragraph 121)

34. The SO2 limits established pursuant to this Part shall not apply during periods of startup, shutdown or malfunction of the heaters and boilers or the malfunction of SO2 control equipment, if any, provided that during startup, shutdown or malfunction. Valero shall, to the extent practicable, maintain and operate the relevant affected facility including associated air pollution control equipment in a manner consistent with good air pollution control practices for minimizing emissions. (Basis: Consent Decree IX Paragraph 122)

NSPS SUBPARTS A AND J SO2 EMISSIONS FROM CLAUS SULFUR RECOVERY PLANTS ("SRP") AND FLARING

35. "Hydrocarbon Flaring Device" shall mean a flare device listed in Appendix N at Valero's Benicia Refinery. Valero shall provide notice to EPA, within the next report to be submitted pursuant to Part XVI, of any new Hydrocarbon Flaring Device which is installed at a refinery, subject to this Consent Decree subsequent to the Date of Entry of this Consent Decree. To the extent that the refinery utilizes Hydrocarbon Flaring Devices other than those specified on Appendix N for the purposes of combusting any excess of a refinery-generated gas other than Acid Gas and/or Sour Water Stripper Gas, those Hydrocarbon Flaring Devices shall be covered under this Consent Decree. (Basis: Consent Decree XII.A Paragraph 220(7.))

Appendix N of the Consent Decree
Hydrocarbon Flaring Devices - Benicia

Butane Tank Flare
South Flare
North Flare

36. "Sulfur Recovery Plant" or "SRP" shall mean a process unit that recovers sulfur from hydrogen sulfide by a vapor phase catalytic reaction of sulfur dioxide and hydrogen sulfide. (Basis: Consent Decree XII.A Paragraph 220(15.))

37. The SRPs at Valero's Benicia Refinery shall be "affected facilities" pursuant to 40 C.F.R. Part 60, Subpart J, and shall comply with the applicable provisions of 40 C.F.R. Part 60, Subparts A and J, as such requirements apply to SRPs. (Basis: Consent Decree XII.A Paragraph 221)

38. All emission points (stacks) to the atmosphere for tail gas emissions from the SRPs will be monitored and reported upon in accordance with 40 C.F.R. §§ 60.7(c), 60.13, and 60.105. This requirement is not applicable to the AG Flaring Devices identified in Appendix K. (Basis: Consent Decree XII.A Paragraph 224)

Appendix K of the Consent Decree
Acid Gas Flaring Devices - Benicia

Acid Gas Flare

39. Nothing in this Consent Decree shall be interpreted to limit Valero's opportunity to submit for EPA approval alternative monitoring procedures or requirements pursuant to 40 C.F.R., Part 60, Subpart A, for emissions from SRPs. (Basis: Consent Decree XII.A Paragraph 225)

40. Valero shall re-route any SRP sulfur pit emissions such that all sulfur pit emissions to the atmosphere are either eliminated or included as part of the applicable SRP's emissions subject to NSPS Subpart J limit for SO2, as a 12-hour rolling average, of 250 ppmvd SO2, or 300 ppm reduced sulfur, each at 0% oxygen, as required by 40 C.F.R. § 60.104(a)(2). (Basis: Consent Decree XII.A Paragraph 226)

41. During the life of this Consent Decree and for the purpose of determining compliance with the SRP emission limits, Valero shall apply the "startup" and "shutdown" provisions set forth in NSPS Subpart A to the SRP but not to the independent startup or shutdown of its corresponding control device(s) (e.g., TGTU). However, the malfunction exemption set forth in NSPS Subpart A shall apply to both the SRP and its control device(s) (e.g., TGTU). (Basis: Consent Decree XII.A Paragraph 227)

42. Valero shall accept NSPS Subpart J applicability for each Flaring Device at their refineries, as currently identified in Appendix N. (Basis: Consent Decree XII.A Paragraph 231)

43. Valero shall continue to operate the existing flare gas recovery systems at the Benicia Refinery on those flares covered by such systems. Valero will accept NSPS Subpart J applicability to the North Flare at the Benicia Refinery beginning December 31, 2006. (Basis: Consent Decree XII.A Paragraph 232)

44. For each Flaring Device, Valero will elect to use the following NSPS Subpart J compliance methods:

a. Operate and maintain a flare gas recovery system to control continuous or routine combustion in the Flaring Device. Use of a flare gas recovery system on a flare obviates the need to continuously monitor and maintain records of hydrogen sulfide in the gas as otherwise required by 40 C.F.R. §§ 60.105(a)(4) and 60.7. (Basis: Consent Decree XII.A Paragraph 235)

45. Valero will certify compliance to EPA and the applicable Plaintiff-Intervener with one or more of the four compliance methods in Paragraph 235 and will accept NSPS applicability for all of the Flaring Devices in Appendix N. (Basis: Consent Decree XII.A Paragraph 239)

46. The combustion in a Flaring Device of process upset gases or fuel gas that is released to the Flaring Device as a result of relief valve leakage or other emergency malfunctions is exempt from the requirement to comply with 40 C.F.R. § 60.104(a)(1). (Basis: Consent Decree XII.A Paragraph 241)

BENZENE WASTE NESHAP PROGRAM ENHANCEMENTS – Carbon Canisters

47. From the Date of Entry and through termination of the Consent Decree, "breakthrough" between the primary and secondary canister is defined as any reading equal to or greater than 100 ppm VOCs or 5 ppm benzene. In the event that Valero elects to monitor for both VOCs and benzene pursuant to this provision, then "breakthrough" between the primary and secondary canister shall be defined only as a reading greater than 5 ppm benzene, provided that Valero satisfies the following conditions (Basis: Consent Decree X.E Paragraph 141)
    a. Valero shall collect and analyze the sample for benzene as soon as practical, and in no event later than 24 hours after obtaining the relevant VOC reading; and
    b. Valero shall conduct monitoring for benzene breakthrough between the primary and secondary carbon canisters for the subject dual carbon canister system until such time as it replaces the relevant primary carbon canister with the secondary carbon canister pursuant to Paragraph 143 according to the following schedule:
    i. where the design carbon replacement interval for the unit is less than or equal to 30 days, Valero shall monitor every operating weekday;
    ii. where the design carbon replacement interval for the unit is 31 to 60 days, Valero shall monitor at least twice a week;
    iii. where the design carbon replacement interval for the unit is greater than sixty (60) days, Valero shall monitor at least weekly.

48. By no later than seven (7) days after the Date of Entry of the Consent Decree (for existing dual canister systems), and by no later than seven (7) days after the installation of each new dual canister system, Valero shall start to monitor for breakthrough between the primary and secondary carbon canisters at times when the source is connected to the carbon canister, and during periods of normal operation in accordance with the frequency specified in 40 C.F.R. § 61.354(d) (but in no event less frequently than once per month), or alternatively at least once on each operating weekday. (Basis: Consent Decree X.E Paragraph 142)

49. Valero shall replace the original secondary carbon canister with a fresh carbon canister immediately when breakthrough between the primary and secondary canister is detected. The original secondary carbon canister will become the new primary carbon canister and the fresh carbon canister will become the secondary canister. (Basis: Consent Decree X.E Paragraph 143)
    a. For carbon canisters not qualifying as engineered carbon canister systems pursuant to this paragraph, "immediately" shall mean within twenty-four (24) hours; provided, however, that if breakthrough is determined on a Saturday, Sunday, or holiday, then Valero shall replace the original primary carbon canister by the end of the next regular work day if Valero begins monitoring the secondary canister at least once per operating day until the primary canister is replaced.
    b. For engineered carbon canister systems, "immediately" shall mean not more than fourteen (14) days if Valero monitors the secondary canister at least once per operating day until the carbon in the primary canister is replaced and such monitoring of the secondary canister does not reveal "breakthrough", as defined in Paragraph 141. If breakthrough from the secondary canister is revealed, Valero shall replace the secondary carbon canister within twenty-four hours of securing such monitoring results. For purposes of this Paragraph 143, "engineered carbon canister systems" shall mean carbon systems with fixed vessels for which each vessel has a capacity of carbon in excess of 5000 pounds.
    c. In lieu of replacing a primary or secondary carbon canister pursuant to the terms of this paragraph, Valero may elect to discontinue flow of benzene containing streams to the relevant carbon canister system until such system is replaced.

50. Valero shall maintain or otherwise provide for a reasonable supply of fresh carbon and carbon canisters at each of Valero's Refineries. (Basis: Consent Decree X.E Paragraph 144)

XVII. RECOMMENDATION

Issue a conditional Consent Decree change to the Permit to Operate to Valero for the following equipment:

S-1 Claus Sulfur Recovery Unit A
S-2 Claus Sulfur Recovery Unit B
S-5 FCCU Catalyst Regnerator
S-17 Butane Flare
S-26 Cat Naphtha Hydrofiner Heater (F-801)
S-157 Sulfur Storage Pit
S-200 Wastewater Treatment Equipment

_____
Thu H. Bui
Senior Air Quality Engineer
Engineering Division

Date: _____

THB:E:\Valero\24379\8/1/12

EVALUATION REPORT
VALERO REFINING COMPA/NY
Application #24386 - Plant # 12626

3400 East Second St.
Benicia, CA 94510

I. BACKGROUND

Valero has applied for condition changes to the Permits to Operate for the following fugitive components of the following equipment:

Condition 9298, Carb Phase III (A/N 18582)
Condition 10574, Clean Fuel Project (A/N 10392). Condition 24197 will replace Condition 10574 upon startup of S-1061, Hydrogen Reformer Furnace
Condition 16027, S-237 Boiler
Condition 18043, MTBE Phaseout Project (A/N 2035) and Ethanol Blending (A/N 2391)
Condition 22949, ULSD Project (A/N 13244)
Condition 24080, Butamer Project (A/N 17876)
Condition 24197, Clean Fuel Project (A/N 10392) and Akylate Production Project (A/N 3782)
Condition 24754, BAP Oil Transfer Project (A/N 22080)

This application is considered as an Administrative Change because there is no emission increase associated with the cleanup of languages that address fugitive components, where installations were completed as required. Valero submitted the associated changes to the Title V Permit under Application 24413. The details of the changes are listed below:

Condition 9296 for CARB Phase III project: The specification of the valves, gaskets, pumps and integration of new fugitive equipment monitoring and repair program were deleted because the installations were completed as required.

Condition 10574 for S-21, S-22, S-151, S-220, S-227, S-1007, S-1011, S-1020, S-1021, S-1022, S-1023, S-1024, S-1026 and S-1058: The specification of the valves, gaskets, pumps and integration of new fugitive equipment monitoring and repair program were deleted because the installations were completed as required.

Condition 16027 for S-237 Boiler: The specification of all hydrocarbon valves and gaskets was deleted because the installations were completed as required.

Condition 18043, MTBE Phaseout Project: The count of pump, valve and flange requirement was deleted because the installation were completed as required.

According to the message from Application file #2035, even though the final fugitive component counts of the MTBE Phase-out Project were increased from 0.57 tons/yr to 0.61 tons/yr, the overall fugitive emissions will was not change because it was offset by the decrease of fugitive counts from Ethanol Blending Station, Application #2391 (0.206 ton/yr – 0.298 tons/yr limit of Condition 18042, part 11). The difference is 0.05 ton/yr (0.092 - 0.04 ton/yr) margin for compliance. Therefore, the Condition #18043, Part 1 will retain the 0.57 tons/yr as the amount of offsets that was provided by Valero.

Condition 22949, ULSD Project, for S-247, S-248, S-1036, S-1051, and S-1052: The specification of the valves, gaskets, pumps and integration of new fugitive equipment monitoring and repair program were deleted because the installations were completed as required.

Condition 24080, Butamer Project, for S-247, S-248, S-1036, S-1051, and S-1052: The specification of the valves, gaskets, pumps and integration of new fugitive equipment monitoring and repair program were deleted because the installations were completed as required.

Condition 24197, Clean Fuel Project and Alkylation Production Project, for S-1007 Alkylation Unit: The specification of the valves, gaskets, pumps and integration of new fugitive equipment monitoring and repair program were deleted because the installations were completed as required.

Condition 24754, BAP Oil Transfer Project, for S-1003 HCU or S-1006 Crude Unit: The specification of the valves, gaskets, pumps and integration of new fugitive equipment monitoring and repair program were deleted because the installations were completed as required.

II. EMISSION CALCULATIONS

There are no emission increases of any air pollutant for the condition changes covered by this application.

III. PLA/NT CUMULATIVE INCREASE SINCE 4/5/1991

The cumulative increase for this application is ZERO for all pollutants.

IV. TOXIC SCREENING A/NALYSIS

Toxic emissions will not increase as a result of this application. Therefore, a toxic risk screening analysis is not required per Regulation 2-5.

V. BEST AVAILABLE CONTROL TECHNOLOGY

This application has no emission increase. BACT does not apply to all sources per Regulation 2-2-301.

VI. OFFSETS

Offsets are not triggered since there are no emission increases from this application per Regulation 2-2-302.

VII. STATEMENT OF COMPLIA/NCE

The fugitive equipment should comply with the Standards of Regulation 8, Rule 18 for Valves, Pumps and Flanges. The leak standard for valves, pumps and flanges will be 100 ppm, 500 ppm and 100 ppm, respectively.

VALVES – Most valves will use graphite packing with is the best material available to achieve low emissions in a wide variety of applications. Al valves will be required to meet a leak rate of no more than 100 ppm.

PUMPS – The pumps will be equipped with double mechanical seals and an approved Inspection and Maintenance (I&M) Program to reduce emissions from pump seals. A leak standard of 500 ppm will be required to be met.

FLA/NGES – The flanges will use graphite or equivalent designed flange gaskets to reduce POC fugitive emissions. A leak stand of 100 ppm will be required to be met.

This project is considered to be categorically exempt under the District's CEQA Regulation 2-1-312.1 and therefore not subject to CEQA review. This permit application is to modify permit conditions for existing or permitted sources or facilities that do not involve any increases in emissions or physical modifications.

Valero is not located within 1,000 feet of any school. The public notification requirements of Regulation 2-1-412 are not required.

PSD does not apply.

XVIII. CONDITIONS

Condition# 9296
Application 24386 (May 2012), Delete completed fugitive requirements. Update final fugitive count and emissions.

CARB Phase III Fugitive Equipment

F1. a. Deleted. (Completed. All new light hydrocarbon control valves installed as part of the CARB Phase III project were equipped with live-loaded packing systems and polished stems, or equivalent).

b. Deleted. (Completed. All new flanges/connectors installed in light hydrocarbon piping systems as part of the CARB Phase III project were equipped with graphitic gaskets unless prevented by service requirements.)

c. Deleted. (Completed. All new light hydrocarbon centrifugal pumps installed as part of the CARB Phase III project are of seal-less design or are equipped with dual mechanical seals, or equivalent.)

d. Deleted. (Completed. All fugitive equipment installed as part of the CARB Phase III project has been incorporated into the facility LDAR program).

F2. The Owner/Operator has been permitted to install fugitive components with a total POC emission rate of 0.22 TPY for the entire CARB Phase III Project. The final CARB Phase III Project (A/N 18582) fugitive count was submitted on 7/2/2010. [Basis: Cumulative Increase, Toxics]

Condition# 10574 for Sources S-21, S-22, S-151, S-220, S-227, S-1007, S-1011, S-1020, S-1021, S-1022, S-1023, S-1024, S-1026 and S-1058 – Clean Fuel Project (CFP)
Application 24386 (May 2012), Delete completed fugitive requirements. Update final fugitive count and emissions.

FUGITIVES
S-1020 Heartcut Tower
S-1021 Heartcut Saturation Unit
S-1022 Catalytic Reformer T90 Tower
S-1023 Catalytic Naphtha T90 Tower
S-1024 Light Catalytic Naphtha Hydrotreater
S-1026 C5/C6 Splitter
S-220 Hot Oil System
S-227 Storage Tank
Deleted. [Basis: S-228 Storage Tank was never installed.]
Deleted. [Basis: S-229 Storage Tank was never installed.]
S-1007 Alkylation Unit
S-1011 Heavy Catalytic Naphtha Hydrotreater
S-1058 Virgin Light Ends Unit
S-151 Waste Water Treatment Unit
S-1003 Hydrocracking Unit

1. Deleted. (Completed. All new pumps installed light liquid hydrocarbon service as part of the Clean Fuels Project (CFP) were equipped with an approved seal-less pump technology.)
2. Deleted.
3. Deleted.
4. Deleted. (Completed. All new light hydrocarbon flow control valves installed as part of the CFP were equipped with live-loaded packing systems and polished stems, or equivalent)).
5. Deleted. (Completed. All other hydrocarbon valves greater than 2 inches installed as part of the CFP were (1) bellows sealed, (2) live loaded, (3) graphitic-packed, (4) teflon packed valves or (5) equivalent.)
6. Deleted. [Basis: Inspection frequency of valves covered by Regulation 8, Rule 18.]
7. Deleted. (Completed. All new flanges/connectors installed in light hydrocarbon piping systems as part of the CFP were equipped with graphitic gaskets unless where service requirements dictate use of asbestos-type gaskets.)
8. Deleted. (Completed. No reciprocating compressors in HC service added for Clean Fuels Project).
9. Completed
10. Deleted. Redundant with Regulation 8-28-302.
11. Deleted. (Completed. All process drains installed as part of the CFP were fitted with a "P" trap sealing system).12. The Owner/Operator shall limit the total fugitive POC emissions from all new and modified equipment installed as a result of the Clean Fuels Project, which includes Sources S-1020 through S-1024, S-1026, S-220, S-227, S-1007, S-1011, S-1058 and S-151 to no more than 20.8 tons in any rolling 365 consecutive day period. The final CFP fugitive count was submitted prior to issuance of the Permit to Operate. [Basis: Cumulative Increase]

Condition # 16027
For Source S-237 (SG-1032), Boiler

A/N 13201, Correct NSPS J H2S Concentration (Oct 2005)
A/N 16658 (Sept 2007)
Application 24386 (May 2012), Delete completed fugitive requirements. Update final fugitive count and emissions.

1. Deleted. (Completed. All hydrocarbon valves greater than 2 inches installed with S-237 were one of the following types: (1) bellows sealed, (2) live loaded, (3) graphitic-packed, (4) teflon packed valves or (5) equivalent. All new installed with S-237 were equipped with graphitic gaskets unless where service requirements dictate use of asbestos-type gaskets.).

Condition #18043
Application 24386 (May 2012), Delete completed fugitive requirements. Update final fugitive count and emissions.

For S-1007 Alkylation Unit, S-1014 Cat Light Ends Splitter, S-1012 Dimersol Unit

1. The Owner/Operator has been permitted to install fugitive components for the MTBE Phaseout project. Total fugitive POC emissions from the MTBE Phaseout Project at the Benicia Refinery (Plant #12626) shall not exceed 0.571 tons in any rolling 12 consecutive month period. The final project fugitive count was submitted on June 24, 2004. . [Basis: Cumulative Increase, Toxics]

Condition 22949
APPLICATION 13244 (July 2007), Ultra Low Sulfur Diesel Unit – S-247, S-248, S-1036, S-1051, S-1052
APPLICATION 16866 (Nov 2007), Ultra Low Sulfur Diesel Unit – Addition of mass emission limits
Application 24386 (May 2012), Delete completed fugitive requirements. Update final fugitive count and emissions.

FUGITIVE EQUIPMENT

5. ***a. Deleted. (Completed. All new light hydrocarbon control valves installed as part of the VIP-ULSD project were equipped with live-loaded packing systems and polished stems, or equivalent).***

   b. Deleted. (Completed. All new flanges/connectors installed in light hydrocarbon piping systems as part of the VIP-ULSD project were equipped with graphitic gaskets unless prevented by service requirements.)
   c. Deleted. (Completed. The compressor installed as part of the ULSD project is equipped with dual mechanical seals.)
   d. Deleted. (Completed. All new light hydrocarbon centrifugal pumps installed as part of the VIP-ULSD project are of seal-less design or are equipped with dual mechanical seals, or equivalent.)

e. Deleted. (Completed. All fugitive equipment installed as part of the VIP-ULSD project has been incorporated into the facility LDAR program).

6. ***The Owner/Operator has been permitted to install fugitive components with a total POC emission rate of 1.21 TPY for the entire VIP-ULSD Project. The final fugitive count was submitted on January 11, 2008. [Basis: Cumulative Increase, Toxics]***

CONDITION 24080

Application 17876 (October 2011) Butamer Project
Application 24386 (May 2012), Delete completed fugitive requirements. Update final fugitive count and emissions.

FUGITIVE EQUIPMENT

2. a. Deleted. (Completed. All new light hydrocarbon control valves installed as part of the VIP-Butamer project were equipped with live-loaded packing systems and polished stems, or equivalent).
f. Deleted. (Completed. All new flanges/connectors installed in light hydrocarbon piping systems as part of the VIP-Butamer project were equipped with graphitic gaskets unless prevented by service requirements.).
g. Deleted. (All new light hydrocarbon centrifugal pumps installed as part of the VIP-Butamer project are of seal-less design or are equipped with dual mechanical seals, or equivalent.).
h. Deleted. (Completed. All fugitive equipment installed as part of the VIP-Butamer project (A/N 17876) has been incorporated into the facility LDAR Program.)

3. The Owner/Operator has been permitted to install fugitive components (with a total POC emission rate of 2.08 TPY for the entire VIP-Butamer project. The final project fugitive component count was submitted on March 22, 2010.

Condition# 24197

CLEA/N FUELS PROJECT
APPLICATION 10392
APPLICATION 3782 Alkylation Production Project
APPLICATION 13201, Correct NSPS J H2S Concentration (Oct 2005)
APPLICATION 16937 (Jan 2009), VIP Amendments. For S-21 or S-22, S-151, S-220, S-227, S-1007, S-1011, S-1020, S-1021, S-1022, S-1023, S-1024, S-1026 and S-1058
Application 24386 (May 2012), Delete completed fugitive requirements. Update final fugitive count and emissions.

FUGITIVES
S-1020 Heartcut Tower
S-1021 Heartcut Saturation Unit

S-1022 Catalytic Reformer T90 Tower
S-1023 Catalytic Naphtha T90 Tower
S-1024 Light Catalytic Naphtha Hydrotreater
S-1026 C5/C6 Splitter
S-220 Hot Oil System
S-227 Storage Tank
Deleted. [Basis: S-228 Storage Tank was never installed.]
Deleted. [Basis: S-229 Storage Tank was never installed.]
S-1007 Alkylation Unit
S-1011 Heavy Catalytic Naphtha Hydrotreater
S-1058 Virgin Light Ends Unit
S-151 Waste Water Treatment Unit
S-1003 Hydrocracking Unit

1.Deleted. (Completed. All new light hydrocarbon pumps installed as part of the Clean Fuel Project (CFP) were equipped with BACT technologies).

4. Deleted. (Completed. All new hydrocarbon flow control valves installed as part of the CFP were equipped with live-loaded packing systems and polished stems, or equivalent).

5. Deleted. (Completed. All All new hydrocarbon valves greater than 2" installed as part of the CFP were equipped with bellow sealed, live-loaded, graphitic-packed, Teflon packed valves, or equivalent).

7.Deleted. (Completed. All new flanges installed as part of the CFP were equipped with graphitic based gaskets, except in services where asbestos type gased gasked is required)8.Deleted. (Completed. All new hydrocarbon centrifugal compressors installed as part of the CFP were equipped with wet dual mechanical seals with a heavy liquid barrier fluid or dual dry gas mechanical seals buffered with inert gas. All reciprocating compressors vent to a control device having at least 95% control efficiency. All new compressor in hydrocarbon service with less than 50% hydrocarbon must comply with NSPS 40, Subpart GGG standard). 11.Deleted. (Completed. All process drain installed as part of the CFP were equipped with P-trap sealing system). 12. The Owner/Operator shall limit the total fugitive POC emissions from all new and modified equipment installed as a result of the Clean Fuels Project, which includes Sources S-1020 through S-1024, S-1026, S-220, S-227, S-1007, S-1011, S-1058 and S-151 to no more than 20.8 tons in any rolling 365 consecutive day period. The final CFP fugitive count was submitted on prior to issuance of the Permit to Operate. [Basis: Cumulative Increase]

ALKYLATE PRODUCTION PROJECT (A/N 3782)

51. The total daily throughput of alkylate from the Alkylation Unit (S-1007) shall not exceed 22,800 barrels. (Basis: BACT, Cumulative Increase)

52. The Owner/Operator has been permitted to install fugitive components for the Alkylation Production Project (A/N 3782). The POC emissions from the entire project shall not exceed 0.174 ton/year. The final project fugitive count was submitted on July 18, 2005. (Basis: Cumulative Increase, Offsets)

Condition 24754
Application 22080 (October 2010) Valero Gasoil Transfer Project, Fugitive Equipment
Application 24386 (May 2012), Delete completed fugitive requirements. Update final fugitive count and emissions.

1. ***a. Deleted. (Completed. All new hydrocarbon flow control valves installed as part of the Valero BAP Gasoil Transfer Project were equipped with live-loaded packing systems and polished stems, or equivalent).***
   b. Deleted. (Completed. All new flanges/connectors installed in light hydrocarbon piping system as part of the Valero BAP Gasoil Transfer Project were equipped with graphitic gaskets unless prevented by service requirements.)
   c. Deleted. (Completed. All new light hydrocarbon centrifugal pumps installed as part of the Valero BAP Gasoil Transfer Project are of seal-less design or are equipped with dual mechanical seals, or equivalent.)
   d. Deleted. (Completed. All fugitive equipment installed as part of the Valero BAP Gasoil Transfer Project has been incorporated into the facility LDAR Program.)

2. ***The Owner/Operator has been permitted to install fugitive components with a total POC emission rate of 0.0096 TPY for the entire Valero BAP Gasoil Transfer Project. [Basis: Cumulative Increase, Offsets]***

3. The Owner/Operator shall vent all pressure relief devices installed as part of the BAP Gasoil Transfer Project to a flare gas recovery system with a recovery and/or destruction efficiency of at least 98% by weight. [Basis: Regulation 8-28]

XIX. RECOMMENDATION

Issue conditional changes to the Permits to Operate for the following fugitive components of the following equipment:

Condition 9298, Carb Phase III (A/N 18582)
Condition 10574, Clean Fuel Project (A/N 10392), Condition 24197 will replace Condition 10574 upon startup of S-1061, Hydrogen Reformer Furnace
Condition 16027, S-237 Boiler
Condition 18043, MTBE Phaseout Project (A/N 2035) and Ethanol Blending (A/N 2391)
Condition 22949, ULSD Project (A/N 13244)
Condition 24080, Butamer Project (A/N 17876)
Condition 24197, Clean Fuel Project (A/N 10392) and Akylate Production Project (A/N 3782)
Condition 24754, BAP Oil Transfer Project (A/N 22080)

_____
Thu H. Bui
Senior Air Quality Engineer
Engineering Division

Date: _____

THB:E:\Valero\24386\May 29, 2012

EVALUATION REPORT
VALERO REFINING CO.
Application #24450 - Plant #12626

3400 E. Second St.
Benicia, CA 94510

I. BACKGROUND

Valero has applied for condition changes to reduce the source test frequency of Sulfuric Acid Mist (SAM), POC and PM10 from quarterly to annual to the Authority to Construct/Permit to Operate for the following equipment:

S-1030 Cogen Turbin Generator, GT-4901
S-1031 Cogen Heat Recovery Steam Generator, SG-4901
S-1059 Pipestill Furnace, F-105
S-1060 Pipestill Furnace, F-106

On July 31, 2002 the District granted the Permit to Operate to S-1030 and S-1031 with Condition # 19177, Parts 39 and 40 that required quarterly source test on POC, PM10 and Sulfuric Acid Mist (SAM), respectively. In addition, Part 19f and 19h provided the opportunity for Valero to reduce the test frequency to annual after one year of testing if test variability is low.

Valero has now requested to reduce the frequency for sources S-1030 and S-1031 Cogeneration. The following table is the summary of test results from the past four (one year) source tests for POC and PM10. Note, Valero was allowed to deduct the ammonia sulfates from PM10 results because of the ammonia injection into the SCR systems, which formed a secondary pollutant. The adjusted PM10 emissions are all below 50% of the limits; therefore, the District will reduce the PM10 frequency from quarterly to annually as requested.

Cogen S-1030/S-1031 Source Test Results, POC and PM10

		POC		PM10	
		Limit, 2.037 lb/hr		Limit: 4.65 lb/hr, daily avg	
Quarter	Test Date	Test Result	% of Limit	Adjusted Test Result	% of Limit
3Q2011	9/8-9/2011	0.49	24.1	0	0
4Q2011	11/16-17/2011	0.65	31.9	0.75[1]	16.1
1Q2012	3/1/2012	0.72	35.3	1.70	36.6
2Q2012	6/7/2012	0	0	0.39	8.4

[1] Note: PM10 data are inconsistent on 11/17/11 source tests. Source Test Section did not validated this result. However, all past source tests in 2010 and 2011 were well below 50% of the PM10 limit.

In addition, Valero submitted source test results for SAM. However, not all source test results are below 50% of the limit. According to the District's Source Test Section, the

exclusion of ammonia sulfates [(NH4)2SO4] from SAM samples collected from refinery gas fired operations is not allowed. Therefore, this request has been denied.

In December 2008, the District also granted the Authority to Construct S-1059 and S-1060 with Condition # 20820, Part 72 that required quarterly source test on NMOC and PM10 and the same opportunity to reduce the test frequency to annual after one year of testing if test variability is low.

In this application, Valero submitted a request to change the source test frequency of Condition #20820, Part 72 from quarterly to annual source test requirement. Since all source test results are within 50% of the limits, the District decided to grant the request to reduce the testing frequency for NMOC and PM10 of sources S-1059 and S-1060. The following table is the summary of test results from the past four source test results:

(S-1059 and S-1060) NMOC and PM10 Source Test Results

		NMOC		PM10	
		Limit: 10 ppmvd		Limit: 40 lb/hr	
Quarter	Test Date	Test Result	% of Limit	Test Result	% of Limit
4Q2011	10/4/2011	0.439	4.4	18.57	46
1Q2012	1/20/2012	0.368	3.7	14.66	37
2Q2012	4/4/2012	0.270	2.7	7.64	19
3Q2012	7/3/2012	0.249	2.5	9.58	24

II. EMISSION CALCULATIONS

This application will not result in an emission increase.

III. PLANT CUMULATIVE INCREASE SINCE 4/5/1991

There are no changes to the plant cumulative emissions.

IV. TOXIC SCREENING ANALYSIS

This application will not result in an increase in toxic air contaminant emissions from existing levels. Therefore, a Toxic Risk Screening Analysis is not required per Regulation 2-5.

V. BEST AVAILABLE CONTROL TECHNOLOGY

This application will not result in any emission increase from existing levels. Therefore, BACT is not triggered per Regulation 2-2-301.

VI. OFFSETS

This application does not result in emission increases. Therefore, offsets are not needed per Regulation 2-2-302.

VII. STATEMENT OF COMPLIANCE

Cogeneration S-1031 and S-1031
Regulation 9, Rule 1, Sulfur Dioxide

This regulation establishes emission limits for sulfur dioxide from all sources and applies to the combustion sources at this facility. Section 301 (Limitations on Ground Level Concentrations) prohibits emissions which would result in ground level SO2 concentrations in excess of 0.5 ppm continuously for 3 consecutive minutes, 0.25 ppm averaged over 60 consecutive minutes, or 0.05 ppm averaged over 24 hours. Section 302 (General Emission Limitation) prohibits SO2 emissions in excess of 300 ppm (dry). The gas turbine (S-1030) is not expected to contribute to noncompliance with ground level SO2 concentrations and should easily comply with section 302.

Regulation 9, Rule 3, Nitrogen Oxides from Heat Transfer Operations

The proposed combustion gas turbine complies with the Regulation 9-3-303 NOx limit of 125 ppm @ 15% O2.

Regulation 9, Rule 9, Nitrogen Oxides from Stationary Gas Turbines

Because the proposed combustion gas turbine will be limited by permit condition to NOx emissions of 2.5 ppmvd @ 15% O2, when firing refinery gas, it is expected to comply with the Regulation 9-9-301.3 NOx limitation of 9 ppmvd @ 15% O2.

Regulation 9, Rule 11, Nitrogen Oxides and Carbon Monoxide from Electric Power Generating Steam Boilers

This rule does not apply per the exemption in Regulation 9-11-14.

Regulation 10: New Source Performance Standards (NSPS)

This regulation incorporates the federal NSPS.

Subpart A General Provisions provides the general framework for NSPS. Subpart Db Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units does apply because this project utilizes duct burners. The NOx limit of 85 ppm has been met.

Subpart GG Standards of Performance for Stationary Gas Turbines - contains a NOx emission limit in part 60.332 (a)(2) of 50 ppmv at 15% O2, dry, 3-hour average, as well as monitoring and testing requirements for combustion turbines. The project emissions are well below the applicable NOx emissions limits. The applicant will comply with emission and fuel monitoring requirements, and monitoring plans will be submitted, as required.

Section 112 of the Clean Air Act, National Emission Standards for Hazardous Air Pollutants (NESHAP)

These standards are contained in 40 CFR Parts 61 and 63 and are not applicable to the proposed project.

Sources S-1059 and S-1060, PS Furnaces

- Sources S-1059 and S-1060 are in compliance with Regulation 1- Public Nuisance. No person shall discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons or the public; or which endangers the comfort, repose, health or safety of any such persons or the public, or which causes, or has a natural tendency to cause, injury or damage to business or property.

- Sources S-1059 and S-1060 are in compliance with the requirement of Regulation 6 – Particulate Matter and Visible Emissions. Visible particulate emissions are limited by section 6-1-301 which prohibits visible emissions greater than or equal to Ringelmann No. 1 for no more than 3 minutes in an hour, and 302 limits the source to less than 20% opacity. Section 305 prohibits fallout of visible particles onto neighboring properties in sufficient quantities to cause annoyance to any other person. In addition, Regulation 6-1-311 limits PS Furnaces' PM_{10} emissions to be less than 40 lb/hr.

- Sources S-1059 and S-1060 (fugitive emissions) are subject to Regulation 8, Rule 18-Equipment Leaks. The equipment complies with the Standards of Regulation 8, Rule 18 for Valves, Compressors and Flanges. The VOC leak standards for valves, pumps and flanges are the same and are set at 100 ppmvd.

VALVES -- Most valves use graphite packing, which is the best material available to achieve low emissions in a wide variety of applications. These new components are included in the Valero Benicia Refinery's quarterly inspection and maintenance program in compliance with BAAQMD Regulation 8, Rule 18, with a leak criteria of 100 ppmvd expressed as methane measured at 1 centimeter (cm). This meets BAAQMD BACT guidelines for POCs.

PUMPS -- The pumps are equipped with double mechanical seals with barrier fluid. The pumps are included in the Valero Benicia Refinery's quarterly inspection and maintenance program in compliance with BAAQMD Regulation 8, Rule 18, and BAAQMD BACT guidelines for POCs with a leak criteria of 100 ppmvd expressed as methane measured at 1 centimeter (cm).

FLANGES/CONNECTORS -- The flanges/connectors use graphite or equivalent designed flange gaskets to reduce POC fugitive emissions. These new flanges/connectors are included in the Valero Benicia Refinery's quarterly inspection and maintenance program in compliance with BAAQMD Regulation 8, Rule 18, with a leak criteria of 100 ppmvd expressed as methane measured at 1 centimeter (cm). This meets BAAQMD BACT guidelines for POCs

- Sources S-1059 and S-1060 (fugitive emissions) are subject to Regulation 8, Rule 28-Episodic Releases from Pressure Release Devices at Petroleum Refinery and Chemical Plants. This rule requires that new and modified pressure release valves shall meet all

applicable requirements of Regulation 2, Rule 2, including BACT. Valero complies with this rule by normally venting all pressure relief valves to a recycle compressor to recover the gas, or a flare with a recovery/destruction efficiency greater than or equal to 98% during overflow or emergency situation.

- The emission limitations, monitoring, and sampling requirements from Regulation 9-1 apply to the FCCU (S-5) and the Coker Unit (S-6). Regulation 9, Rule 1, Section 310, Emission Limitations for Fluid Catalytic Cracking Units, Fluid Cokers, and Coke Calcining Kilns, limits SO_2 emissions from sources S-5 and S-6 to 1,000 ppmvd. The Valero refinery will continue to comply with the requirements of Regulation 9, Rule 1 (Inorganic Gaseous Pollutants, Sulfur Dioxide).

- Regulation 9, Rule 1, Section 301 and Regulation 9, Rule 2, Section 301 limits ground-level concentrations of H2S for the whole refinery. Section 9-2-301 states that "a person shall not emit during any 24 hour period, hydrogen sulfide in such quantities as to result in ground level concentrations in excess of 0.06 ppm averaged over three consecutive minutes or 0.03 ppm averaged over any 60 consecutive minutes. Valero refinery will continue to comply with the requirements of Regulation 9, Rule 2 (Inorganic Gaseous Pollutants, Hydrogen Sulfide).

- Sources S-1059 and S-1060 are in compliance with the requirement of Regulation 9, Rule 10 –304 and 305 – Nitrogen Oxides and Carbon Monoxide from Boilers, Steam Generators and Process Heaters in Petroleum Refineries. Emission limits, monitoring, and reporting requirements in this regulation apply to sources S-1059 and S-1060. Regulation 9, Rule 10, Section 304.1 limits NO_x emissions to 150 ppmvd at 3 percent O_2, dry, and Section 305 limits CO emissions to 400 ppmvd at 3 percent O_2, dry. Valero refinery will continue to comply with the requirements of Regulation 9, Rule 10.

- Sources S-1059 and S-1060 are in compliance with the following Regulation 10: New Source Performance Standards (NSPS), (40 CFR, Part 60)

- 40 CFR, Part 60, Subpart A - General Provisions
- 40 CFR, Part 60, Subpart GGG/VV and GGGa/VVa Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries

- Sources S-1059 and S-1060 are subject to and expected to comply with the following Section 112 of the Clean Air Act, National Emission Standards for Hazardous Air Pollutants (NESHAP)

- 40 CFR Part 61, Subpart A – General Provisions
- 40 CFR Part 63, Subpart CC – Petroleum Refineries
- 40 CFR Part 63, Subpart A – General Provisions
- 40 CFR Part 63, Subpart UUU – Petroleum Refineries: Catalytic Cracking Units, Catalytic Reforming Units and Sulfur Recovery Units, or
- 40 CFR Part 63, Subpart DDDDD – Industrial, Commercial and Institutional Boilers and Process Heaters. The Washington DC Circuit Court vacated this rule on June 8, 2007. Where there is no MACT for a new source and the deadline for promulgation of a standard by the EPA is past, local agencies must determine on a case-by-case basis, MACT for the new source, in accordance with 40 CFR 63.52(a). The emission limit for these sources in the vacated standard was 400 ppm CO. There were no other limits for gaseous-fueled boilers.

This project qualifies for a CEQA categorical exemption of Regulation 2-1-312.8 for permit applications for cogeneration facilities which meet the criteria of Section 15329 of the State CEQA Guidelines, and Regulation 2-1-312.1 for applications to modify permit conditions for existing or permitted sources or facilities that do not involve any increases in emissions or physical modifications, and therefore is not subject to CEQA review.

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

Toxics, BACT, offsets, and PSD are not triggered.

VIII. CONDITIONS

Condition # 20820, VIP Application No. 5864
Amended by VIP Amendments, Application No. 16937
Amended by Application No. 15606 to revise the NMOC baseline
Amended by Application No. 15606 to revise the NMOC baseline
Amended by Application No. 22710 to add Consent Decree RATA allowance for S-1059 and S-1060, Feb 2011
Application 24379 (August 2012): Consolidated Consent Decree Requirements
Application 24656 (September 2012): Consolidated LPFG H2S and TRS Requirements
Application 24450 (October 2012): Reduction of source test frequency for S-1059 and S-1060

72. The Owner/Operator shall conduct a District-approved source test annually ~~at least once per quarter~~ to demonstrate subsequent compliance with the NMOC and PM10 ~~mass rates~~emission limits specified in part 63. The time interval between source tests shall not exceed 16 months~~quarterly source tests shall be conducted at least 2 months apart and not more than 4 months apart~~. The Owner/Operator shall submit the source test results to the Source Test Section and Engineering Division no later than 60 days after the source test. The District may revert the source test from annually to quarterly if any subsequent test result is more than 50% of the limit. ~~After acquiring one year of source test data, the Owner/Operator may switch to semi-annual or annual source testing if test variability is low upon District's approval.~~ [Basis: Periodic Monitoring]

Condition # 19177
Conditions for the Operation of the Gas Turbine (S-1030) and the Heat Recovery Steam Generator (S-1031)
Applications 2488 and 2965 Cogeneration (2001)
Application 12865 Condition changed (2005)
Application 13201, Correct NSPS J H2S Concentration (Oct 2005)
Application 24656 Consolidation of all fuel gas system requirements (September 2012)
Application 24450 Reduction of source test frequency for S-1030 and S-1031 (October 2012)

39. The Owner/Operator shall conduct ~~quarterly~~ annual source tests to demonstrate compliance with 19 (f) for POC and 19 (h) for PM10. The Owner/Operator shall conduct the tests in accordance with protocols approved in advance by the District. The District may revert the source test from annually to quarterly if the subsequent result is more than 50% of the limit. ~~After acquiring one year of source test data on these units, the District may switch to annual source testing if test variability is low.~~ [Basis: BACT]

40. The Owner/Operator shall conduct a quarterly source test to demonstrate compliance with part 20 for Sulfuric Acid Mist (SAM). The testing shall also include testing for SO2, SO3, SAM and ammonium sulfates. The Owner/Operator shall conduct the tests in accordance with protocols approved in advance by the District. After acquiring one year of source test data on these units, the District may switch to annual source testing if the test results are less than 50% of the limit. ~~variability is low.~~ [Basis: Cumulative Increase]

Condition 24198
APPLICATION 16937 (Jan 2009), VIP Amendments. Condition supersedes Condition 19466.
APPLICATION 21573 (Mar 2010) P-69 Dump Stack condition is added to the FCCU S-5 and Coker Unit S-6
APPLICATION 24329 (October 2012), VIP Cleanup
APPLICATION 24450 (November 2012), Reduced source Test Frequency for S-1059 and S-1060 Pipestill Furnaces

1. The Owner/Operator shall operate S-160 Seal Oil Sparger only when abated by A-13/A-26 Vapor Recovery Compressor to be returned to the refinery fuel gas system. (Basis: Cumulative Increase)

2. The Owner/Operator shall abate emissions from S-8 coke storage tanks by A-8 and/or A-10 baghouses at all times. (Basis: Cumulative Increase)

3. The Owner/Operator shall monitor and record on a monthly basis the visible emissions from Sources S-1, S-2, S-8, S-11 and S-176to demonstrate compliance with Regulation 6-301 (Ringelmann 1 or 20% opacity). For S-176 only, this monitoring is only required when dry salt is added to the tank. For S-8, compliance with Regulation 6-301 shall be demonstrated at the outlet of A-8/A-10 baghouses. These records shall be kept for a period of at least 5 years from date of entry and shall be made available to District staff upon request. [Basis: Regulation 6-301]

4. The Owner/Operator shall notify the District in writing by fax or email no less than three calendar days in advance of any scheduled startup or shutdown of any process unit and as soon as feasible for any unscheduled startup or shutdown of a process unit, but no later than 48 hours or within the next normal business day after the unscheduled startup/shutdown. The notification shall be sent in writing by fax or email to the Director of Enforcement and Compliance. The requirement is not federally enforceable. [Basis: Regulation 2-1-403]

5. The Owner/Operator shall abate the emissions from the S-1059 and S-1060, PS Furnaces by SCRs A-1059 and/or A-1060 and Prescrubber/Regenerative Amine Scrubber A-1047, except during startup, shutdown, emergency bypass and bypass periods, and the Owner/Operator shall exhaust those emissions through the FCCU/CKR stack (P-1059). [Basis: Regulation 6-1-301 and Regulation 6-1-304].

6. Deleted. [Basis: Redundant with ~~quarterly~~ annual PM10 source test requirement in Condition 20820, Part 72]

7. The Owner/Operator shall perform an annual source test on Sources S-8 and S-176 to demonstrate compliance with Regulation 6-310 (outlet grain loading no greater than 0.15 grain/dscf). The Owner/Operator shall submit the test results to the District's Compliance and Enforcement Division and the District's Permit Services Division no more than 60 days after the test. These records shall be kept for a period of at least 5 years from date of entry and shall be made available to District staff upon request. For S-176 only, this source test is only required when dry salt is added to the tank. For S-8, compliance with Regulation 6-301 shall be demonstrated at the outlet of A-8/A-10 baghouses. [Basis: Regulation 6-310]

8. The Owner/Operator shall perform annually a source test on S-1 and S-2 to determine compliance with Regulation 6-330 (Outlet grain loading not to exceed 0.08 grain/dscf of SO3 and H2SO4). The Owner/Operator shall submit the test results to the District's Compliance and Enforcement Division and the District's Permit Services Division no more than 60 days after the test. These records shall be kept for a period of at least 5 years from date of entry and shall be made available to District staff upon request. [Basis: Regulation 6-330]

9. Deleted. [Basis: Redundant with ~~quarterly~~ annual PM10 source test requirement in Condition 20820, Part 72]

10. The Owner/Operator shall conduct a District-approved source test on a semi-annual basis on Sources S-7, S-20, S-21 or S-22, S-23, S-24, S-25, S-26, S-30, S-31, S-32, S-33, S-34, S-40, S-41 and on an annual basis on sources S-35 and S-173 to demonstrate compliance with Regulation 9-10-305 (CO not to exceed 400 ppmv, dry, at 3% O2, operating day average). The Owner/Operator shall submit the test results to the District's Compliance and Enforcement Division and the District's Permit Services Division no more than 60 days after the test. These records shall be kept for a period of at least 5 years from date of entry and shall be made available to District staff upon request.

    The Owner/Operator shall ensure that S-220 does not exceed 400 ppmv of CO, dry, at 3% O2, operating day average, measured by a properly installed CEM for CO and O2. [Basis: Regulation 9-10-305]

11. The Owner/Operator shall conduct a semi-annual District-approved source test on Sources S-43, S-44 and S-46 to demonstrate compliance with Regulation 9-9-301.1 (NOx not to exceed 55 ppmv, dry, at 15% O2, fired on refinery fuel gas). The Owner/Operator shall submit the test results to the District's Compliance and Enforcement Division and the District's Permit Services Division no more than 60 days after the test. These records shall be kept for a period of at least 5 years from date of

entry and shall be made available to District staff upon request. [Basis: Regulation 9-9-301.1]

12. The Owner/Operator shall abate the VOC emissions from the S-159 Lube Oil Reservoir using the S-36 Boiler. [Basis: Cumulative Increase]

13. The Owner/Operator shall vent the VOC emissions from S-167 and S-168 Seal Oil Spargers in a closed system to the flare gas recovery header to be returned to the refinery fuel gas system. [Basis: Cumulative Increase]

14. The Owner/Operator shall use the continuous emission monitors required by Regulation 9, Rule 10, to monitor compliance for all NOx limits at the following sources:
    Process Furnaces: S-21 or S-22, S-23, S-25, S-30, S-31, S-32, S-33, S-220
    Steam Generators: S-40, S-41
    [Basis: Regulation 9-10]

15. The Owner/Operator shall use the continuous opacity monitors or an approved alternate monitoring plan (AMP) required by Regulation 1-520 to monitor compliance for the opacity limits at the FCCU/CKR Stack for the following sources:
    S-5 Fluid Catalytic Cracking Unit, Catalyst Regenerator
    S-6 Fluid Coker, Burner
    [Basis: Regulation 1-520]

18. Deleted. Requirements to prepare test plans, train employees, and install necessary equipment have been completed.

19. The Owner/Operator shall install continuous level monitors on two water seal compartments of the FCCU/CKR Dump Stack P-69, including continuous data historization for the parametric level monitors, and maintain the instrument in good operating condition at all times. The District may assume the opacity has exceeded a Ringelmann 1-1/2 when a breakthrough is recorded by the continuous level monitor, except where it can be confirmed that the dump stack was not used or an opacity excess did not occur. The Owner/Operator shall document the circumstances of such exceptions in a letter to the District within 30 days following such an indicated breakthrough. [Basis: Regulation 6-1-302, Regulation 1-441

X. RECOMMENDATION

Issue a conditional change to the Permit to Operate to Valero Refining Company for the following equipment:

S-1030 Cogen Turbin Generator, GT-4901
S-1031 Cogen Heat Recovery Steam Generator, SG-4901
S-1059 Pipestill Furnace, F-105
S-1060 Pipestill Furnace, F-106

Thu H. Bui
Senior Air Quality Engineer
Engineering Division
Date:

THB:T:\Valero\24450\24450e\10/10/12

EVALUATION REPORT
VALERO REFINING COMPA/NY
Application #24644- Plant # 12626

3400 East Second St.
Benicia, CA 94510

I. BACKGROUND

Valero has applied for an alteration to the Permit to Operate for the following equipment:

S-21 Hydrogen Reformer Furnace, F-301, John Zinc, Ultra Low LPMW 208-WC, maximum 614 MMBTU/hr

Valero plans to replace all 980 of existing low NOx burners with 980 new ultra low NOx burners without exceeding the maximum condition limit. The new burners are designed to reduce routine maintenance for the burners and refractory, improve combustion efficiency and maintain a better margin of compliance with the NOx limits set forth in Regulation 9-10-301 and Permit Condition # 24197, Part 31. The maximum heat input rate of S-21 is limited in Condition #24197, Part 37 for 106 million therms (combined S-21 from Train A and S-22 from Train B). The maximum firing rates of new burners will be equal to the existing limits, which is 614 MMBtu/hr as specified in Condition # 24197, Part 38. Since replacing burners is qualified as an alteration for S-21 as defined in Regulation 2-1-233.1, this project will not be subject to New Source Review of Regulation 2-2.

Valero requested the Authority to Construct be extended for 1.5 years due to the maintenance and reliability related to the existing furnace burners. Valero will be replacing the majority of the burners over the next 1.5 years. This request will be granted as long as S-21 continues to comply with BACT or comply with Regulation 2-1-407.3 if the substantial use of the authority to construct has begun.

II. EMISSION CALCULATIONS

There are no emission increases of any air pollutant for the alterations covered by this application. The maximum firing rate for the replacement burners will be equal to or less than the existing permit condition limit for each furnace.

III. PLA/NT CUMULATIVE INCREASE SINCE 4/5/1991

The cumulative increase for this application is ZERO for all pollutants.

IV. TOXIC SCREENING A/NALYSIS

Toxic emissions will not increase as a result of this application. Therefore, a toxic risk screening analysis is not required per Regulation 2-5.

V. BEST AVAILABLE CONTROL TECHNOLOGY

This application has no emission increase. BACT does not apply to S-21 for alteration.

VI. OFFSETS

Offsets are not triggered since there are no emission increases from this application per Regulation 2-2-302.

VII. STATEMENT OF COMPLIA/NCE

Source S-21 is subject to and expected to comply with Regulation 9-10 which meet 0.033 lb/MMBtu of NOx and 400 ppmv of CO requirements on a facility wide basis.

This project is considered to be ministerial under the District's CEQA Regulation 2-1-311 and therefore is not subject to CEQA review. The engineering review for this project requires only the application of standard permit conditions and standard emission factors in accordance with Permit Handbook Chapter 2.1.

This project is also considered to be categorically exempt under the District's CEQA Regulation 2-1-312.2 and 2-1-312.3, and therefore not subject to CEQA review. This permit application is to install air pollution or abatement equipment to aid compliance with the NOx and CO limit of Regulation 9-10.

Valero is not located within 1,000 feet of any school. The public notification requirements of Regulation 2-1-412 are not required.

The permit may or may not trigger PSD due to Greenhouse Gases Emissions. The applicant submitted a PSD Applicability Analysis using "NSR Reform" methods (see 67 Fed. Reg. 80,186). In accordance with the March 8, 2011 Partial PSD Delegation Agreement, Section III.1, the District does not have the authority to make PSD applicability determinations using NSR Reform methods. Per the delegation agreement, EPA shall make the PSD applicability determination and issue any necessary PSD permits if a source seeks a PSD applicability determination using NSR Reform methods.

The District sent the letter dated August 8, 2012 to EPA along with the PSD applicability determination from Valero for the burner replacement project. This letter serves as a courtesy notification to EPA that Valero has requested to use a PSD Applicability Analysis based on NSR Reform methods, which is subject to EPA review.

IX. CONDITIONS

The District will not impose any new permit conditions on these sources. All existing conditions will remain in effect. The maximum firing rates are already limited by permit condition ID# 24197. An initial source test for NOx and CO is already required by Reg. 9-10-501.

X. RECOMMENDATION

Issue a conditional Authority to Construct to replace burners to Valero for the following equipment:

S-21 Hydrogen Reformer Furnace, F-301, John Zinc, Ultra Low LPMW 208-WC, maximum 614 MMBTU/hr

_____

Thu H. Bui
Senior Air Quality Engineer
Engineering Division
Date: _____

THB:E:\Valero\24644\8-6-2012

EVALUATION REPORT
VALERO REFINING COMPANY
Application #24656 - Plant # 12626

3400 East Second St.
Benicia, CA 94510

I. BACKGROUND

Valero has applied for condition changes to the Permits to Operate for the following equipment:

S7 (F103), Process Furnace, Jet Fuel Hydrofining
S20 (F104), Process Furnace, Naphtha Hydrofining
S21 (F301), Hydrogen Reformer Furnace
S22 (F351), Hydrogen Reformer Furnace
S23 (F401), Process Furnace, Gas Oil Hydrocracking
S24 (F601), Process Furnace, Cat Feed Hydrofining
S25 (F701), Process Furnace, Cat Feed Preheat
S26 (F801), Process Furnace, HCN Hydrofining
S30 (F2901), Process Furnace, PFR Preheat
S31 (F2902), Process Furnace, PFR Reheat
S32 (F2903), Process Furnace, PFR Reheat
S33 (F2904), Process Furnace, PFR Reheat
S34 (F2905), Process Furnace, Gas Heater
S35 (F2906), Process Furnace, Gas Heater
S40 (SG2301), Utility Package Boiler
S41 (SG2302), Industrial Boiler
S173 (F902), Coker Steam Superheat Furnace
S220 (F4460), Hot Oil Furnace
S237 (SG1032), Boiler
S247 (F5401), Reactor Charge Heater
S248 (F5402), Stripper Reboiler Heater
S1030 (GT4901), Turbine
S1031 (SG4901), Steam Generator
S1061 (F5501), Hydrogen Reformer Furnace

This application is considered as an Administrative Change because there is no emission increase associated with consolidating nineteen (19) different permit conditions for the low pressure fuel gas system to a single permit condition. The purpose of this consolidation is to put all the H2S and TRS limits for the low pressure fuel gas system in one place so it is easy to understand the different limits and their applicability for both Valero environmental personnel and District enforcement staff. In addition to consolidating the H_2S and TRS, this Title V permit application proposes to consolidate the associated monitoring, recordkeeping, and reporting requirements. Condition # 25342 is used to keep track of all low pressure fuel gas system, H2S and TRS permit conditions. The details of the changes are listed below:

S42 (F1060), Process Furnace Treat Gas Preheater, was confirmed shutdown by Valero. Therefore, this application was amended to remove all references of S42 on December 6, 2012.

H2S and TRS limits

Condition 20820 for S-1061 Hydrogen Plant Furnace: Part 3 was replaced by Condition 25342, Parts1a, 1b and 1c, which are subject to NSPS Subpart Ja for H2S by construction date. Part 4 was also replaced by Condition 25342, Part 2b for TRS, which is subject to NSR BACT. Part 3 was also replaced by Condition 25342, Part 2e for TRS, which is subject to BACT.

Condition 24245 for S-7, S-20, S-21, S-22, S-23, S-24, S-25, S-26, S-30, S-31, S-31, S-32, S-33, S-34, S-35, S-40, S-41, S-220 and S-237: Parts 29, 30 and 34 were replaced by Condition 25342, Part 1b, which is subject to NSPS Subpart J for H2S by EPA Consent Decree.

Condition 10574 for S-21, S-22 and S-220: Part 13 was replaced by Condition 25342, Parts 1b, which is subject to NSPS Subpart J for H2S by construction date. Part 13 was also replaced by Condition 25342, Part 1d, which is subject to BACT. Part 14 was also replaced by Condition 25342, Part 2d for TRS, which is subject to BACT.

Condition 24197 for S-21, S-22 and S-220: Part 13 was replaced by Condition 25342, Part 1b, which is subject to NSPS Subpart J for H2S by construction date. Part 13 was also replaced by Condition 25342, Part 1d for H2S, which is subject to BACT. Part 14 was also replaced by Condition 25342, Part 2d for TRS, which is subject to BACT.

Condition 10574 for S-220: Part 13 was replaced by Condition 25342, Part 1b, which is subject to NSPS Subpart J for H2S by construction date.

Condition 16027 for S-237: Part 3b was replaced by Condition 25342, Part 1b, which is subject to NSPS Subpart J for H2S by construction date. Parts 3a and 7 were also replaced by Condition 25342, Part 1d for H2S, which is subject to BACT, Toxics and Offsets. Parts 4 and 14 were also replaced by Condition 25342, Part 2d for TRS, which is subject to BACT and Offsets.

Condition 22949 for S-247 and S-248: Part 3 was replaced by Condition 25342, Parts 1b and 1c, which are subject to NSPS Subpart J for H2S by construction date. Part 4 was also replaced by Condition 25342, Part 2b for TRS, which is subject to BACT. Part 3 was also replaced by Condition 25342, Part 2g for TRS, which is subject to BACT.

Condition 19177 for S-1030 and S-1031: Part 19g was replaced by Condition 25342, Parts 1b and 1c, which are subject to NSPS Subpart J for H2S by construction date. Part 19g was also replaced by Condition 25342, Part 2a and 2f for TRS, which is subject to BACT.

Condition 9296 for S-40: Part D4 was replaced by Condition 25342, Part 2c for TRS, which is subject to Offsets.

H2S and TRS Monitoring and Record Keeping

Condition 24245 for S-21, S-22, S-23, S-220 and S-237: Parts 29, 30 and 34 were replaced by Condition 25342, Part 3a for installing H2S and TRS monitors. Parts 29, 30 and 34 were replaced by Condition 25342, Part 4a for calculating & recording 24- hour average H2S and TRS contents.

Condition 10574 for S-21, S-22, S-23 and S-220: Part 15 was replaced by Condition 25342, Part 3a for installing H2S and TRS monitors. Part 16 was replaced by Condition 25342, Part 4a for calculating & recording 24- hour average H2S and TRS contents.

Condition 24197 for S-21, S-22, S-23 and S-220: Part 15 was replaced by Condition 25342, Part 3a for installing H2S and TRS monitors. Part 16 was replaced by Condition 25342, Part 4a for calculating & recording 24- hour average H2S and TRS contents.

Condition 16027 for S-237: Part 5 was replaced by Condition 25342, Part 3a for installing H2S and TRS monitors. Part 6 was replaced by Condition 25342, Part 4a for calculating & recording 24- hour average H2S and TRS contents.

Condition 20820 for S-247, S-248 and S-1061: Part 5 was replaced by Condition 25342, Part 3a for installing H2S and TRS monitors.

Condition 20820 for S-1061: Part 6 was replaced by Condition 25342, Part 4c for calculating & recording the rolling 24- hour average and 365-hour average TRS contents.

Condition 19177 for S-1030 and S-1031: Part 35 was replaced by Condition 25342, Part 3b for installing H2S and TRS monitors. Part 35 was replaced by Condition 25342, Part 4b for calculating & recording the rolling 3- hour average H2S and TRS contents.

Condition 9296 for S-40: Part D.6 was replaced by Condition 25342, Part 4a for calculating & recording 24- hour average H2S and TRS contents.

Condition 24245 for S-40: Parts 29, 30 and 34 were replaced by Condition 25342, Part 4a for calculating & recording 24- hour average H2S and TRS contents.

Condition 22949 for S-247 and S-248: Part 6 was replaced by Condition 25342, Part 4d for calculating & recording the daily average, 365-hour average TRS contents and 3-hour average H2S content.

H2S and TRS Reporting

Condition 24245 for S-21, S-22, S-220 and S-237: Parts 29, 30 and 34 were replaced by Condition 25342, Part 5a for quarterly reporting the H2S and TRS contents.

Condition 16027 for S-237: Part 6 was replaced by Condition 25342, Part 5a for quarterly reporting the H2S and TRS contents.

Condition 10574 for S-21, S-22 and S-220: Part 16 was replaced by Condition 25342, Part 5a for quarterly reporting the H2S and TRS contents.

Condition 24197 for S-21, S-22 and S-220: Part 16 was replaced by Condition 25342, Part 5a for quarterly reporting the H2S and TRS contents.

Condition 19177 for S-1030 and S-1031: Part 36 was replaced by Condition 25342, Part 5b for quarterly reporting the H2S and TRS contents.

Condition 22949 for S-247 and S-248: Part 6 was replaced by Condition 25342, Part 5c for quarterly reporting the H2S and TRS contents.

Condition 20820 for S-1061: Part 6 was replaced by Condition 25342, Part 5c for quarterly reporting the H2S and TRS contents.

II. EMISSION CALCULATIONS

There are no emission increases of any air pollutant for the condition changes covered by this application.

III. PLANT CUMULATIVE INCREASE SINCE 4/5/1991

The cumulative increase for this application is ZERO for all pollutants.

IV. TOXIC SCREENING ANALYSIS

Toxic emissions will not increase as a result of this application. Therefore, a toxic risk screening analysis is not required per Regulation 2-5.

V. BEST AVAILABLE CONTROL TECHNOLOGY

This application has no emission increase. BACT does not apply to all sources mentioned above per Regulation 2-2-301.

VI. OFFSETS

Offsets are not triggered since there are no emission increases from this application per Regulation 2-2-302.

VII. STATEMENT OF COMPLIANCE

This project is considered to be categorically exempt under the District's CEQA Regulation 2-1-312.1 and therefore not subject to CEQA review. This permit application is to modify permit conditions for existing or permitted sources or facilities that do not involve any increases in emissions or physical modifications.

Valero is not located within 1,000 feet of any school. The public notification requirements of Regulation 2-1-412 are not required.

PSD does not apply.

X. CONDITIONS

Condition # 25342

Refinery Low Pressure Fuel Gas System
A/N 24656 Consolidation of all fuel gas system requirements (September 2012)

1. The Owner/Operator shall limit the hydrogen sulfide (H_2S) concentration in refinery fuel gas to the following:

   a. For the listed source, no more than 60 ppmvd daily, on a 365-day rolling average basis. [Basis: NSPS Subpart Ja].

      S1061 (F5501), Hydrogen Reformer Furnace

   b. For the listed sources, no more than 162 ppmvd on a 3-hour rolling average basis. [Basis: 40CFR60.104(a)(1), Consent Decree Condition # 24545]

      S7 (F103), Process Furnace, Jet Fuel Hydrofining
      S20 (F104), Process Furnace, Naphtha Hydrofining
      S21 (F301), Hydrogen Reformer Furnace
      S22 (F351), Hydrogen Reformer Furnace
      S23 (F401), Process Furnace, Gas Oil Hydrocracking
      S24 (F601), Process Furnace, Cat Feed Hydrofining
      S25 (F701), Process Furnace, Cat Feed Preheat
      S26 (F801), Process Furnace, HCN Hydrofining
      S30 (F2901), Process Furnace, PFR Preheat
      S31 (F2902), Process Furnace, PFR Reheat
      S32 (F2903), Process Furnace, PFR Reheat
      S33 (F2904), Process Furnace, PFR Reheat
      S34 (F2905), Process Furnace, Gas Heater
      S35 (F2906), Process Furnace, Gas Heater
      S40 (SG2301), Utility Package Boiler
      S41 (SG2302), Industrial Boiler
      S173 (F902), Coker Steam Superheat Furnace
      S220 (F4460), Hot Oil Furnace
      S237 (SG1032), Boiler

   c. For the listed sources, no more than 162 ppmvd on a 3-hour rolling average basis [40CFR60.104(a)(1) for S247, S248, S1030, and S1031, NSPS Ja for S1061].

      S247 (F5401), Reactor Charge Heater
      S248 (F5402), Stripper Reboiler Heater
      S1030 (GT4901), Turbine
      S1031 (SG4901), Steam Generator
      S1061 (F5501), Hydrogen Reformer Furnace

   d. For the listed sources, no more than 100 ppmvd daily, on a 24-hour calendar day average basis. [Basis: Cumulative Increase, Offsets].

      S21 (F301), Hydrogen Reformer Furnace

S22 (F351), Hydrogen Reformer Furnace
S220 (F4460), Hot Oil Furnace
S237 (SG1032), Boiler

2. The Owner/Operator shall limit the total reduced sulfur (TRS) concentration in refinery fuel gas to the following:

   a. For the listed sources, no more than 35 ppmvd daily, on a 365-day rolling average basis. [Basis: BACT].

      S1030 (GT4901), Turbine
      S1031 (SG4901), Steam Generator

   b. For the listed sources, no more than 45 ppmvd daily, on a 365-day rolling average basis. [Basis: BACT, Cumulative Increase].

      S247 (F5401), Reactor Charge Heater
      S248 (F5402), Stripper Reboiler Heater
      S1061 (F5501), Hydrogen Reformer Furnace

   c. For the listed sources, no more than 51 ppmvd daily, on a calendar year average basis. [Basis: Offsets].

      S40 (SG2301), Utility Package Boiler

   d. For the listed sources, no more than 51 ppmvd daily, on a rolling four-quarter average basis. [Basis: Cumulative Increase, Offsets, BACT, and A/N 18888/S237 (for S21, S22, and S220 only)].

      S21 (F301), Hydrogen Reformer Furnace [Basis: Offsets, AN 18888/S237, BACT]
      S22 (F351), Hydrogen Reformer Furnace [Basis: Offsets, AN 18888/S237, BACT]
      S220 (F4460), Hot Oil Furnace [Basis: Offsets, AN 18888/S237, BACT]
      S237 (SG1032), Boiler [Basis: Cumulative Increase, Offsets, BACT]

   e. For the listed sources, no more than 100 ppmvd daily, on a calendar day basis. [Basis: BACT].

      S1061 (F5501), Hydrogen Reformer Furnace

   f. For the listed sources, no more than 100 ppmvd daily, on a rolling 24-hour basis. [Basis: BACT].

      S1030 (GT4901), Turbine
      S1031 (SG4901), Steam Generator

   g. For the listed sources, no more than 155 ppmvd daily, on a calendar day basis. [Basis: BACT].

      S247 (F5401), Reactor Charge Heater
      S248 (F5402), Stripper Reboiler Heater

3. The Owner/Operator shall install and operate:

   a. For the listed sources, a District approved continuous gaseous fuel monitor/recorder to determine

the hydrogen sulfide (H_2S) content and total reduced sulfur (TRS) content of the refinery fuel gas prior to combustion [Basis: Monitoring and Records].

S21 (F301), Hydrogen Reformer Furnace
S22 (F351), Hydrogen Reformer Furnace
S23 (F401), Process Furnace, Gas Oil Hydrocracking
S220 (F4460), Hot Oil Furnace
S237 (SG1032), Boiler
S1061 (F5501), Hydrogen Reformer Furnace
S247 (F5401), Reactor Charge Heater
S248 (F5402), Stripper Reboiler Heater

b. For the listed sources, a District approved continuous gaseous fuel monitor/recorder to determine the hydrogen sulfide (H_2S) content and total reduced sulfur (TRS) content of the refinery fuel gas and natural gas prior to combustion (this does not include pilot gas) [Basis: Refinery fuel gas and natural gas monitoring for SO2, BACT].

S1030 (GT4901), Turbine
S1031 (SG4901), Steam Generator

4. The Owner/Operator shall calculate and record the following:

a. For the listed sources, 24-hour average H2S content and TRS content of the refinery fuel gas [Basis: For S21, S22, S220: Offsets, BACT, and AN 18888/S237; for S237: Cumulative Increase; and for S40: Banked POC Credits].

S21 (F301), Hydrogen Reformer Furnace
S22 (F351), Hydrogen Reformer Furnace
S40 (SG2301), Utility Package Boiler
S220 (F4460), Hot Oil Furnace
S237 (SG1032), Boiler

b. For the listed sources, rolling consecutive 3-hour average H2S and TRS content of the refinery fuel gas [Basis: BACT, Offsets, Cumulative Increase].

S1030 (GT4901), Turbine
S1031 (SG4901), Steam Generator

c. For the listed source, 24-hour average and 365-day average TRS content of the refinery fuel gas [Basis: BACT, Offsets, Cumulative Increase].

S1061 (F5501), Hydrogen Reformer Furnace

d. For the listed sources, daily average TRS content, 3-hour average H2S content and 365-day average TRS content of the refinery fuel gas [Basis: BACT, Offsets, Cumulative Increase, NSPS].

S247 (F5401), Reactor Charge Heater
S248 (F5402), Stripper Reboiler Heater

5. On a quarterly basis, the Owner/Operator shall submit a report containing the following refinery fuel gas information to the District's Director of Compliance and Enforcement, and the Manager of the Permit Evaluation no later than 60 days after the end of the quarter:

   a. For the listed sources, the following data shall be reported [Basis: Cumulative Increase, Offsets, BACT, and AN 18888/S237 (for S21, S22, and S220 only)]:

      S21 (F301), Hydrogen Reformer Furnace
      S22 (F351), Hydrogen Reformer Furnace
      S220 (F4460), Hot Oil Furnace
      S237 (SG1032), Boiler

      i. Daily fuel consumption,
      ii. Daily averaged H2S content,
      iii. Daily averaged TRS content,
      iv. Quarterly daily averaged H2S content,
      v. Quarterly daily averaged TRS content,
      vi. Annual averaged TRS content, previous four quarters.

   b. For the listed sources, the following data shall be reported [Basis: BACT, Offsets, Cumulative Increase]:

      S1030 (GT4901), Turbine
      S1031 (SG4901), Steam Generator

      i. Daily fuel consumption,
      ii. Hourly averaged H2S content (3-consecutive hours),
      iii. Hourly TRS content (24-consecutive hours),
      iv. Quarterly daily averaged H2S content,
      v. Quarterly daily averaged TRS content, and
      vi. Annual averaged TRS content, previous four quarters.

   c. For the listed source, the following data shall be reported [Basis: BACT, Offsets, Cumulative Increase, NSPS]:

      S247 (F5401), Reactor Charge Heater
      S248 (F5402), Stripper Reboiler Heater
      S1061 (F5501), Hydrogen Reformer Furnace

      i. Daily fuel consumption,
      ii. Daily averaged H2S content,
      iii. Daily average TRS content,
      iv. Quarterly daily averaged H2S content,
      v. Quarterly daily averaged TRS content, and
      vi. Annual averaged TRS content, previous four quarters.

Condition # 20820, VIP Application No. 5864,
Amended by VIP Amendments, Application No. 16937,
Amended by Application No. 15606 to revise the NMOC baseline.

Amended by Application No. 22710 to add Consent Decree RATA allowance for S-1059 and S-1060, Feb 2011
APPLICATION 24379 (August 2012): Consolidated Consent Decree Requirements
APPLICATION 24656 (September 2012): Consolidated LPFG H2S and TRS Requirements

FUEL GAS SYSTEM

3. Deleted. (Replaced by LPFG Condition 25342, Parts 1a, 1b, 1c and 2e).

4. Deleted. (Replaced by LPFG Condition 25342, Part 2b).

5. Deleted. (Replaced by LPFG Condition 25342, Part 3a).

6. Deleted. (Replaced by LPFG Condition 25342, Parts 4c and 5c.

Condition 10574
Valero Refining Company
3400 East Second Street
Benicia, CA 94510

CLEAN FUELS PROJECT
APPLICATION 10392
APPLICATION 3782 Alkylation Production Project
APPLICATION 24386 (May 2012), Delete completed fugitive requirements. Update final fugitive count and emissions.
APPLICATION 24656 Consolidation of all fuel gas system requirements (September 2012)

FUEL GAS SYSTEM

13. Deleted. (Replaced by LPFG Condition 25342, Part 1b).

14. Deleted. (Replaced by LPFG Condition 25342, Part 2d).

15. Deleted. (Replaced by LPFG Condition 25342, Part 3a).

16. Deleted. (Replaced by LPFG Condition 25342, Parts 4a and 5a).

Condition# 24197 For Sources S-21 or S-22, S-151, S-220, S-227, S-1007, S-1011, S-1020, S-1021, S- 1022, S-1023, S-1024, S-1026 and S-1058

CLEAN FUELS PROJECT
APPLICATION 10392
APPLICATION 3782 Alkylation Production Project Supersedes Condition 10574 upon startup of the VIP Amendments, Application No. 16937
APPLICATION 13201, Correct NSPS J H2S Concentration (Oct 2005)
APPLICATION 16937 (Jan 2009), VIP Amendments. For S-21 or S-22, S-151, S-220, S-227, S-1007, S-1011, S-1020, S-1021, S-1022, S-1023, S-1024, S-1026 and S-1058
APPLICATION 24386 (May 2012), Delete completed fugitive requirements. Update final fugitive count and emissions

APPLICATION 24656 Consolidation of all fuel gas system requirements (September 2012)

FUEL GAS SYSTEM

13. Deleted. (Replaced by LPFG Condition 25342, Parts 1b and 1d).

14. Deleted. (Replaced by LPFG Condition 25342, Part 2d).

15. Deleted. (Replaced by LPFG Condition 25342, Part 3a).

16. Deleted. (Replaced by LPFG Condition 25342, Part 4a and 5a).

Condition# 14318
For Source S-23 Process Oil Furnace
A/N 13201, Correct NSPS J H2S Concentration, (Oct 2005)
A/N 20558, Add Start-up, Shutdown and Curtailed Operation Allowances (June 2009)
Application 24656 Consolidation of all fuel gas system requirements (September 2012)

1. The Owner/Operator shall limit the emissions of NMHC from S-23 (Furnace F- 401) to no more than 10 lb/day. [Basis: BACT]
2. The Owner/Operator shall limit the emission of NOx to no more than 40 ppm averaged over any 8 hour period @ 3% oxygen and dry. [Basis: Cumulative Increase]

2A. Part 2 does not apply to low firing rate conditions (i.e., firing rate less than or equal to 20% of the unit's permitted capacity (185 MMBTU/hr)), during startup periods not to exceed twelve (12) hours, during shutdown periods not to exceed nine (9) hours, or during periods of curtailed operation (i.e., heater idling, refractory dry out, etc.) not to exceed 5 days. [Basis: Cumulative Increase, Offsets, Regulation 9-10-218]

2B. During periods of startup or shutdown or curtailed operations of Part 2A, the Owner/Operator shall maintain the emissions of nitrogen oxides from S-23 Furnaces at or below 68 ppmv, dry, corrected to 3% oxygen, averaged over any 8 consecutive hours, or 8.6 lbs/hr, averaged over any 8 consecutive hours. The Owner/Operator shall record the NOx concentrations from the CEM and the refinery fuel gas throughput at S-23 to demonstration compliance with the limits above during periods of startup or shutdown or curtailed operations [Basis: Cumulative Increase, Offsets, Regulation 9-10-218, Regulation 9-10-502]

3. The Owner/Operator shall continuously monitor the NOx and oxygen in accordance with the Manual of Procedures. [Basis: Cumulative Increase]
4. Owner/Operator shall limit the firing of S-23 furnace to at or below 200 x million BTU/Hr (maximum firing rate) heat input for any one hour period and 185 x million BTU/Hr average for a 24 hour period based on the gross heating value of the fuel gas. This 24 hour period shall be midnight to midnight. [Basis: Cumulative Increase]
5. Deleted. (Replaced by LPFG Condition 25342, Part 1b).
6. Deleted [Basis: Access and availability to records is covered by Title V Permit Standard Condition E.1 and BAAQMD 1-441]

Condition # 16027
For Source S-237 (SG-1032), Boiler
A/N 13201, Correct NSPS J H2S Concentration (Oct 2005)
A/N 16658 (Sept 2007)
Application 24386 (May 2012), Delete completed fugitive requirements. Update final fugitive count and emissions
Application 24656 Consolidation of all fuel gas system requirements (September 2012)

1. Deleted. (Completed. All hydrocarbon valves greater than 2 inches installed with S-237 were one of the following types: (1) bellows sealed, (2) live loaded, (3) graphitic-packed, (4) teflon packed valves or (5) equivalent. All new installed with S-237 were equipped with graphitic gaskets unless where service requirements dictate use of asbestos-type gaskets.)

2. Completed.

3. Deleted. (Replaced by LPFG Condition 25342, Parts 1b and 1d).

4. Deleted. (Replaced by LPFG Condition 25342, Part 1d).
Deleted. (Replaced by LPFG Condition 25342, Part 3a).
Deleted. (Replaced by LPFG Condition 25342, Parts 4a and 5a).

7. Deleted. (Replaced by LPFG Condition 25342, Part 1d).

Condition 22949
APPLICATION 13244 (July 2007), Ultra Low Sulfur Diesel Unit – S-247, S-248, S-1036, S-1051, S-1052
APPLICATION 16866 (Nov 2007), Ultra Low Sulfur Diesel Unit – Addition of mass emission limits
APPLICATION 24386 (May 2012), Delete completed fugitive requirements. Update final fugitive count and emissions.
APPLICATION 24656 Consolidation of all fuel gas system requirements (September 2012)

FUEL GAS SYSTEM

3. Deleted. (Replaced by LPFG Condition 25342, Parts 1b, 1c and 2g).]

4. Deleted. (Replaced by LPFG Condition 25342, Part 2b).

5. Deleted. (Replaced by LPFG Condition 25342, Part 3a).

6. Deleted. (Replaced by LPFG Condition 25342, Part 4d).

Condition 19177

Conditions for the Operation of the Gas Turbine (S-1030) and the Heat Recovery Steam Generator (S-1031)
Applications 2488 and 2965 Cogeneration (2001)
Application 12865 Condition changed (2005)
Application 19177 Cogeneration Extension (2004)
Application 13300 Congeneration Extensison (2006)
Application 24656 Consolidation of all fuel gas system requirements (September 2012)

Emission Sources
Total Group Baseline
S-237 Steam Boiler SG1032
S-220 Hot Oil Furnace F 4460
MTBE Ships
S-40 Boiler SG2301
Phase I New GT/HRSG (S-1030 & S-1031) Phase II New GT/HRSG (S-1032 & S-1033)

a. The Owner/Operator shall limit the SO2 emissions from the Curtailment Group to no more than 34.75 TPY for any consecutive 12-month period. Shut down of a source within the group may not change this group annual limit.
b. The Owner/Operator shall calculate the emissions using fuel flow meters and the TRS Gas Chromatograph CEMs data for all sources other than MTBE ships. The Owner/Operator shall calculate emissions from MTBE ships using the District approved method established for the ships in Application #6968, Condition #10797.
c. The Owner/Operator shall submit a quarterly report of the group emissions to the District, in a District approved format, to document compliance.

19g. The Owner/Operator shall limit the sulfur dioxide (SO2) mass emissions at P-60 or P-62 to no more than 10.75 pounds per hour (rolling 24 hour average). (Basis: BACT)
Partially Deleted. (Replaced by LPFG Condition 25342, Parts 1b, 1c, 2a and 2f).

35. Deleted. (Replaced by LPFG Condition 25342, Parts 3b and 4b).

36. Deleted. (Replaced by LPFG Condition 25342, Part 5b).

Condition # 9296
Amended by Application # 18582 For Sources:
S-40 Steam Boiler,
S-158 Fixed Roof Tank,
S-209 Ethanol Railcar Unloading Facility,
S-210 Floating Roof Tank, and
S-211 MTBE Process Unit
S-1003 Hydrocracker Unit
S-1011 Heavy Cat Naphtha Hydrofiner
S-1014 Cat Light Ends Unit
S-1024 Light Cat Naphtha Hydrotreater

For Sources S-40 Steam Boiler, S-158 Fixed Roof Tank, S-209 Ethanol Railcar Unloading Facility, S-210 Floating Roof Tank, S-211 Alkylate Debutanizer

(at former MTBE Unit) and S-1024 Light Cat Naphtha Hydrofiner

Application 24656 Consolidation of all fuel gas system requirements (September 2012)

S-40 Steam Boiler

D1. The Owner/Operator shall equip the steam boiler (S-40) with Low NOx burners and flue gas recirculation. [Basis: BAAQMD Regulation 9-10, Offsets, Cumulative Increase]
D2. The Owner/Operator shall limit the NOx concentration from S-40 to no more than 30 ppmv, dry, corrected to 3 % oxygen, as averaged over any consecutive 12 month period. (Basis: Offsets)
D3. The Owner/Operator shall limit the CO concentration to no more than 400 ppmv, dry, corrected to 3 % oxygen. [Basis: BAAQMD Regulation 9-10, Cumulative Increase]
D4. Deleted. (Replaced by LPFG Condition 25342, Part 2c).
D5. Completed
D6. Deleted. (Replaced by LPFG Condition 25342, Part 4a).

XI. RECOMMENDATION

Issue conditional changes to the Permit to Operate to Valero for the following equipment:

S7 (F103), Process Furnace, Jet Fuel Hydrofining
S20 (F104), Process Furnace, Naphtha Hydrofining
S21 (F301), Hydrogen Reformer Furnace
S22 (F351), Hydrogen Reformer Furnace
S23 (F401), Process Furnace, Gas Oil Hydrocracking
S24 (F601), Process Furnace, Cat Feed Hydrofining
S25 (F701), Process Furnace, Cat Feed Preheat
S26 (F801), Process Furnace, HCN Hydrofining
S30 (F2901), Process Furnace, PFR Preheat
S31 (F2902), Process Furnace, PFR Reheat
S32 (F2903), Process Furnace, PFR Reheat
S33 (F2904), Process Furnace, PFR Reheat
S34 (F2905), Process Furnace, Gas Heater
S35 (F2906), Process Furnace, Gas Heater
S40 (SG2301), Utility Package Boiler
S41 (SG2302), Industrial Boiler
S173 (F902), Coker Steam Superheat Furnace
S220 (F4460), Hot Oil Furnace
S237 (SG1032), Boiler
S247 (F5401), Reactor Charge Heater
S248 (F5402), Stripper Reboiler Heater
S1030 (GT4901), Turbine
S1031 (SG4901), Steam Generator
S1061 (F5501), Hydrogen Reformer Furnace

_____
Thu H. Bui
Senior Air Quality Engineer
Engineering Division

Date: _____

THB:E:\Valero\24656\12/6/12

EVALUATION REPORT
VALERO REFINERY

Application #24944 - Plant #12626

3400 E. 2ND Street
Benicia, CA 94510

I. BACKGROUND

Valero has submitted this application for a modification for the following equipment:

S-101 Untreated Wastewater Internal Floating Roof Tank, TK-1791, 189,000 gallon capacity

The wastewater generated by the Asphalt Plant was previously treated on-site and stored before being discharged to the City of Benicia wastewater treatment plant. The wastewater is now collected in holding tanks (S-12, S-26, S-28 and S-67) at the Asphalt Plant and is pumped to and treated in the existing wastewater treatment facilities at Valero Refinery. At the refinery the water from the Asphalt Plant is combined with the refinery wastewater upstream of tank S-101. From S-101, the untreated wastewater is routed to the deoilers (S-188 and S-189). The treated wastewater leaving the deoilers is stored in the diversion tanks (S-193 and S-196) and is further processed in the oil-water separators (S-194, S-197, and S-195). See the attached Benicia Refinery Wastewater Treatment Scheme below.

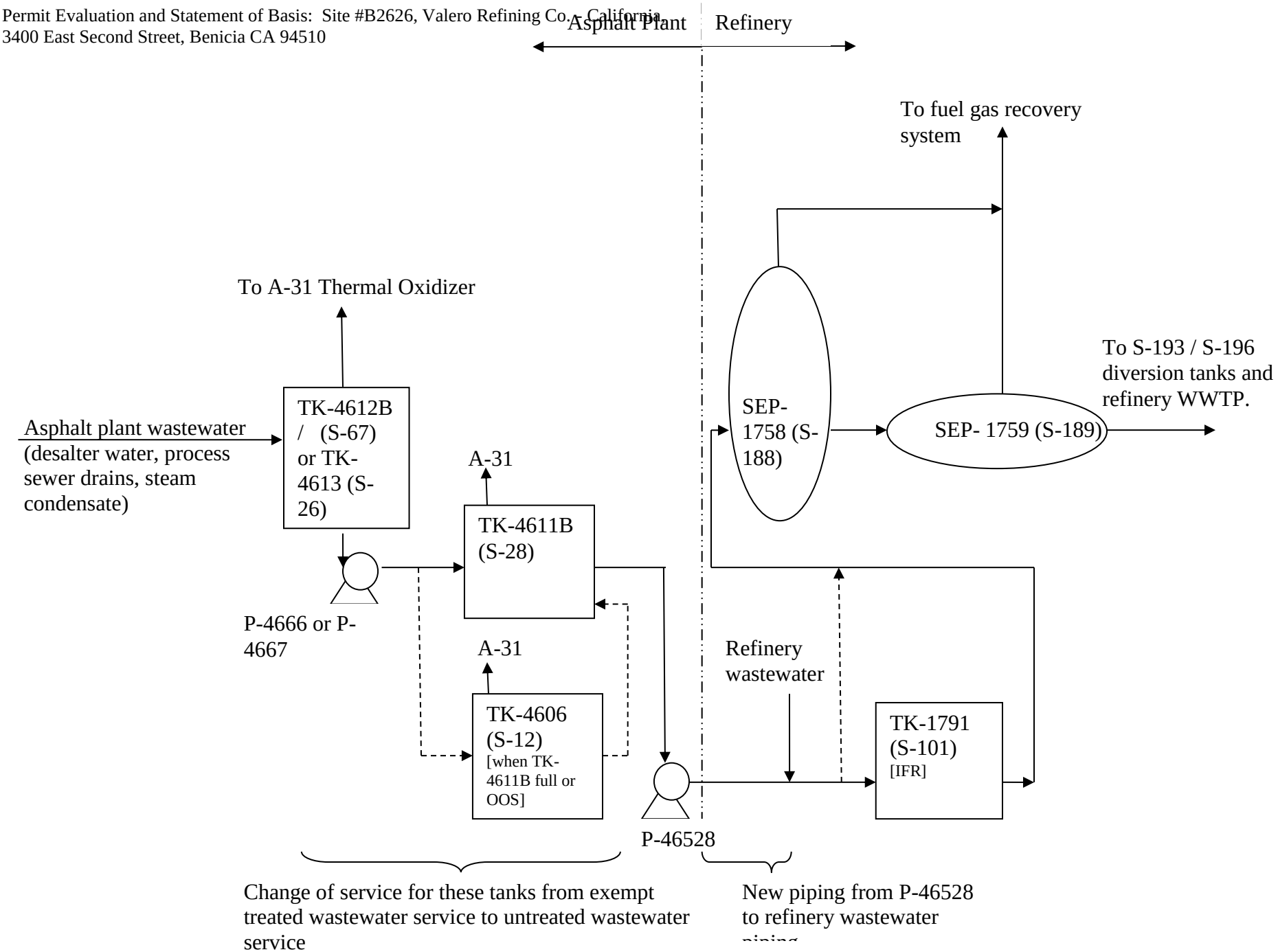
S-101 is an internal floating roof tank and was equipped with a secondary seal to comply with Regulation 8-5-322.5 in 2000. Sources downstream of S-101 are NSR sources (S-188 and S-189 Deoilers) permitted in 1997 under Application 17019 with a maximum throughput limit of 700 gpm, Condition 4882, Part 2. The deoilers are abated by the refinery fuel gas system. Valero wants to retain the same 700 gpm throughput for S-188 and S-189 even with the combined wastewater from the Valero Asphalt Plant. Valero did not request any throughput increase from downstream equipment. Therefore, this application will only evaluate the grandfathered source, S-101. S-101 used to be called “slop oil tank”, which is a mixture of oil and water. Service of S-101 has not changed since it was initially permitted for storage of water/organic mixture. S-101’s name was changed for consistency with upstream wastewater tanks from the Asphalt Plant.

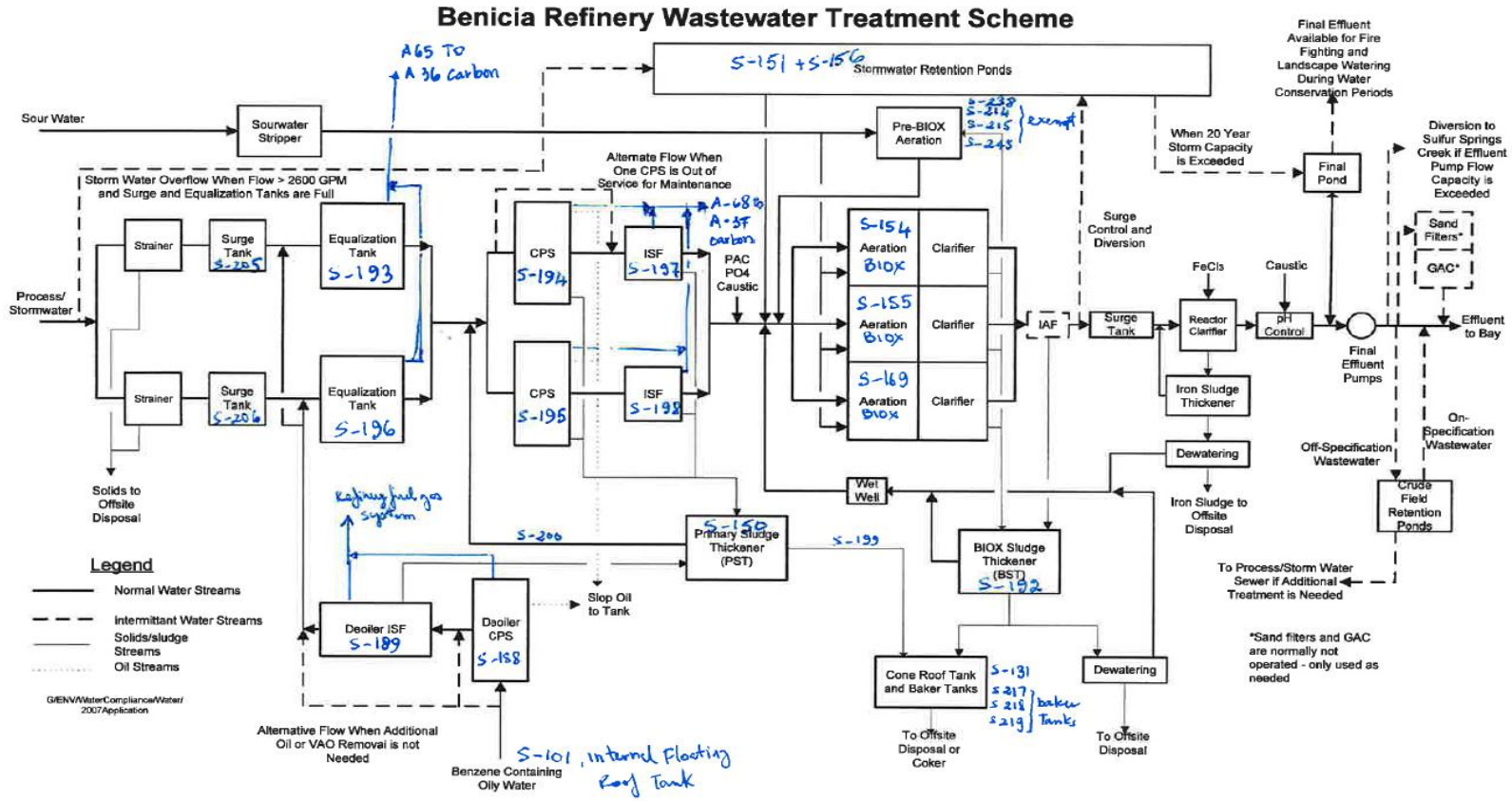
Since S-101 is a grandfathered source with no emission increase and no physical modification, the District will consider S-101 as an alteration; therefore, it is not subject to New Source Review requirements (BACT, cumulative increase, offsets, toxic review and public notification requirements triggered by proximity to a K-12 school). The District will impose a demonstrated throughput limit of 5,005,714 barrels (equivalent to 400 gpm x 60 min/hr x 24 hr/day x 365 day/yr / 42 gallon/barrel) of untreated wastewater per year at S-101 as requested by Valero. Valero submitted the historical data that shows the actual throughput of S-101 was as high as 534 gpm at the outlet of flow meter OMF129 in November 2007. S-101 will lose its grandfather status and it will have a bottlenecking implication on downstream sources (S-188 and S-189) because it will have a maximum throughput of 400 gpm compare to the 700 gmp maximum throughput of S-188 and S-189.

Valero installed new pipelines and connected existing piping at both facilities (Plant 126126 and Plant 13193) in December 2011. The untreated wastewater transfer pipeline is an aqueous solution with less than 1% organic and is exempt from permitting requirement of Regulation 2-1-123.2.

Valero submitted Application # 24955 to modify the TV permit for this alteration application. Changes to Valero Refinery's wastewater treatment upstream operation of S-101 were permitted separately under NSR Application #24278 and TV Application #24277.

The following process flow diagrams describe the new arrangement that connects the untreated wastewater from the Asphalt Plant into Valero Refinery.


Asphalt Plant
Refinery
To fuel gas recovery system
To A-31 Thermal Oxidizer
To S-193 / S-196 diversion tanks and refinery WWTP.
Asphalt plant wastewater (desalter water, process sewer drains, steam condensate)
TK-4612B / (S-67) or TK-4613 (S-26)
SEP-1758 (S-188)
SEP- 1759 (S-189)
A-31
TK-4611B (S-28)
P-4666 or P-4667
A-31
Refinery wastewater
TK-4606 (S-12) [when TK-4611B full or OOS]
TK-1791 (S-101) [IFR]
P-46528
Change of service for these tanks from exempt treated wastewater service to untreated wastewater service
New piping from P-46528 to refinery wastewater


Benicia Refinery Wastewater Treatment Scheme
A65 To A 36 Carbon
S-151 +S-156
Stormwater Retention Ponds
Sour Water
Sourwater Stripper
Pre-BIOX Aeration
S-233 S-214 S-215 S-245 exempt
Final Effluent Available for Fire Fighting and Landscape Watering During Water Conservation Periods
When 20 Year Storm Capacity is Exceeded
Final Pond
Diversion to Sulfur Springs Creek if Effluent Pump Flow Capacity is Exceeded
Storm Water Overflow When Flow > 2600 GPM and Surge and Equalization Tanks are Full
Alternate Flow When One CPS is Out of Service for Maintenance
A-68B A-3F carbon
Strainer
Surge Tank S-205
Equalization Tank S-193
CPS S-194
ISF S-197
PAC PO4 Caustic
S-154 Aeration BIOX Clarifier
S-155 Aeration BIOX Clarifier
S-169 Aeration BIOX Clarifier
Surge Control and Diversion
Process/ Stormwater
Strainer
Surge Tank S-206
Equalization Tank S-196
CPS S-195
ISF S-198
IAF
Surge Tank
FeCl3
Reactor Clarifier
Caustic
pH Control
Sand Filters*
GAC*
Effluent to Bay
Final Effluent Pumps
Iron Sludge Thickener
Dewatering
Iron Sludge to Offsite Disposal
Off-Specification Wastewater
On-Specification Wastewater
Crude Field Retention Ponds
Solids to Offsite Disposal
Refinery fuel gas system
Wet Well
S-200
S-158 Primary Sludge Thickener (PST)
S-199
BIOX Sludge Thickener (BST) S-192
To Process/Storm Water Sewer if Additional Treatment is Needed
*Sand filters and GAC are normally not operated - only used as needed
Legend
Normal Water Streams
Intermittant Water Streams
Solids/sludge Streams
Oil Streams
G/ENV/WaterCompliance/Water/2007Application
Decoiler ISF S-189
Decoiler CPS S-188
Slop Oil to Tank
Alternative Flow When Additional Oil or VAO Removal is not Needed
Benzene Containing Oily Water
S-101, Internal Floating Roof Tank
Cone Roof Tank and Baker Tanks
S-131 S-217 S-218 S-219 baker Tanks
Dewatering
To Offsite Disposal or Coker
To Offsite Disposal

II. EMISSION CALCULATIONS

The emissions for S-101 are quantified for information only. Source S-101 is treated as an alteration; therefore, it is not subject to New Source Review requirements (BACT, cumulative increase, offsets, toxic review, public notification requirements triggered by proximity to a K-12 school.)

Tank Emissions (EPA Tank 4.0) based on 5,005,714 barrels/year:

	Annual (lb/yr)	Daily (lb/day)	
Working loss	2,034	5.57	
Deck fitting loss	320	0.88	
Maximum emissions	2,354	6.45	(365 day/yr)

III. STATEMENT OF COMPLIANCE

This application is subject to Regulation 8, Rule 5 – Storage of Organic Liquid. Source S-101 is expected to be in compliance with Regulation 8-5-301 for tanks equipped with an internal floating roof.

New fugitive components associated with this project and in untreated wastewater service will not be subject to Regulation 8-18 and will not be incorporated into the maintenance and inspection program for fugitive devices. The untreated wastewater in the new pipeline is an aqueous solution with less than 1% organics and is exempt from permitting (2-1-123.2). The untreated wastewater piping at BAP and the transfer pipeline to the refinery are not subject to fugitive monitoring under Regulation 8, Rule 18 or any federal LDAR regulation.

New Source Performance Standards (NSPS) 40 CFR Part 60

S-101 (189,000 gallons) meets the date range requirements and the size threshold for Subpart Ka, however, the untreated wastewater does not meet the definition of petroleum liquid. Therefore, S-101 is not subject to NSPS, Subpart Ka.

NSPS Subpart QQQ is not triggered because the new transfer piping does not enter any drains in the refinery sewer system.

Maximum Achievable Control Technology (MACT) 40 CFR Part 63

MACT Subpart CC – National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries

MACT Subpart CC applies to sources at petroleum refineries emitting hazardous air pollutants (HAPs), including benzene. MACT CC excludes wastewater storage tanks from the definition of storage vessel and covers wastewater storage tanks under the wastewater provisions. The wastewater provisions of MACT CC contains specific requirements for wastewater sources including storage tanks if those tanks store MACT CC Group 1 wastewater, which is defined as wastewater subject to the control standards of the Benzene Waste Operation NESHAP (40 CFR 61 Subpart FF). Valero manages all BAP wastewater streams as uncontrolled aqueous wastes in accordance with 40 CFR 61 Subpart FF, § 61.342(e)(2). These streams are exempt from the 40 CFR Subpart FF

control requirements, therefore, in accordance with the MACT CC definitions in 40 CFR 63.641, these uncontrolled aqueous wastes are MACT CC Group 2 wastewater streams. Sources in which Group 2 wastewater streams are managed are subject to MACT CC at 63.640(c)(3), but are not subject to any MACT CC compliance requirements for wastewater streams in 63.647.

The affected refinery sources retain the applicability as currently shown in the facility's Title V permit.

National Emission Standards for Hazardous Air Pollutants (NESHAP) 40 CFR Part 61

40 CFR 61 Subpart FF – Benzene Waste Operations NESHAP (BWON)

40 CFR 61 Subpart FF (BWON) applies to benzene-containing waste streams at petroleum refineries. Valero manages the combined BWON program at the Benicia Asphalt Plant (BAP) and Benicia Refinery under the 6BQ compliance option in 40 CFR 61 Subpart FF, Section 61.342(e). The untreated BAP wastewater is managed as an uncontrolled aqueous waste in accordance with 61.342(e)(2). The tanks and other waste management units in which this waste is managed are not subject to any control standards in Subpart FF.

The affected refinery sources retain the applicability as currently shown in the facility's Title V permit.

This application is considered to be ministerial under the District's CEQA Regulation 2-1-311 and therefore is not subject to CEQA review. The engineering review for this project requires only the application of standard permit conditions and standard emission factors in accordance with Permit Handbook Chapter 4 for Organic Liquid Storage Tank.

PSD does not apply.

VIII. CONDITIONS

Condition# 25417
For Source S-101 (TK-1791), Untreated Wastewater Internal floating roof Tank
Application 24944 (November 2012).

3. The Owner/Operator of S-101 shall not exceed 5,004,714 barrels of untreated wastewater during any consecutive twelve-month period. (Basis: Cumulative Increase)

4. The Owner/Operator may store alternate liquids(s) other than the materials specified in Part 1 and/or usages in excess of those specified in Part 1, provided that the owner/operator can demonstrate that all of the following are satisfied:
   a. Total POC emissions from S-101 does not exceed 2,354 pounds in any consecutive twelve month period;
   b. The use of these materials does not increase toxic emissions above any risk screening trigger level of Table 2-5-1 in Regulation 2-5
   (Basis: Cumulative Increase; Toxics)

3. To determine compliance with the above parts, the owner/operator shall maintain the following records and provide all of the data necessary to evaluate compliance with the above parts, including the following information:
   a. Quantities of each type of liquid stored at this source on a monthly basis.
   b. If a material other than those specified in part 1 is stored, POC and toxic component contents of each material used; and mass emission calculations to demonstrate compliance with Part 2, on a monthly basis;
   c. Monthly throughput and/or emission calculations shall be totaled for each consecutive twelve-month period

   All records shall be retained on-site for at least five years, from the date of entry, and made available for inspection by district staff upon request. These recordkeeping requirements shall not replace the recordkeeping requirements contained in any applicable District Regulations. (Basis: Cumulative Increase; Toxics)

IX. RECOMMENDATION

Issue conditional permits to operate to Valero Refining Company for the following equipment:

S-101 Untreated Wastewater Internal Floating Roof Tank, TK-1791, 189,000 gallon capacity

Thu H. Bui
Senior Air Quality Engineer
Engineering Division
Date:

THB:T\Valero\24944e\November 27, 2012