

Bay Area Air Quality Management District

375 Beale Street
San Francisco, CA 94105
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Proposed

**Permit Evaluation
and
Statement of Basis
for
Renewal
of the
MAJOR FACILITY REVIEW PERMIT
for
Valero Benicia Asphalt Plant
Facility # A0901
Application #27185**

Facility Address:

3001 Park Road
Benicia, CA 94510

Mailing Address:

3400 East Second Street
Benicia, CA 94510

Application Engineer: Thu Bui
Site Engineer: Thu Bui and Alex Sohn

~~July 2018~~ ~~October 2020~~ March 2021

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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) more than 100 tons per year of a regulated air pollutant, more 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 A0901.

This facility received its initial 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. The purpose of the permit was to address EPA comments in a letter issued on October 8, 2004, including the correction of the monitoring frequency for BAAQMD Condition 1240.I.1 in Table VII-L from monthly to properly reflect the permit condition on which it is based.

Revision 2: On October 17, 2007 the District issued Revision 2 of the permit. The purpose of the revision was to incorporate changes resulting from fourteen permit applications. The permit was originally proposed for public comment on October 12, 2006 and the public comment period ended on November 24, 2006. Valero submitted numerous minor comments regarding equipment that has been removed from service, clarifications of regulation citations, and typographical errors. The district proposed the permit for public comment again because of the large number of comments that had been addressed since the permit was initially proposed on October 12, 2006. The second public comment period ended on August 31, 2007.

2010 Renewal: On December 20, 2010 the District issued the Renewal version of the permit. This revision updated Regulations and incorporated changes made through new Source Review applications. The changes involved in the Renewal are documented in the accompanying Statement of Basis.

Revision 3: On April 30, 2013, the District issued Revision 3 of the permit. This revision updated Regulations and incorporated changes made through New Source Review applications. The changes involved in Revision 3 are documented in the accompanying Statement of Basis.

2018 Renewal: The proposed 2018 Renewal permit application incorporates the following Title V permit applications into the permit:

| Application Number(s) TV/NSR | Description |
|-------------------------------------|--|
| 27185/21461 | A17 Loading Rack Abatement Device (This application was inadvertently omitted from the Statement of Basis for Revision 3. All of the changes were incorporated into Revision 3.) |
| 23452/23451 | Condition 21233 Low Fire Definition (This application was discussed in the Statement of Basis for Revision 3, but the changes were not incorporated into Revision 3.) |
| 27185/27600 | BAAQMD Reg 9-10 NOx ANCP (Alternate NOx Compliance Plan) with revisions to Condition 26250 |
| 27185/27720 | BAAQMD Change of Condition for 19329, 21233, and new Condition 26250 |
| 27940/27939 | Termination of Consent Decree with new Condition 26298 |
| 27185/29774 | Clarification of A1, A2, A3, A6, and A20 mist eliminator descriptions |

The incorporation of these applications would not significantly increase emissions. There are no emission increases for these applications.

- TV 23452/NSR 23451 – Condition 21233 definition of low firing added for consistency with revised Regulation 9, Rule 10. No emissions increases or relaxation in monitoring frequency. Note that Condition 21233 was subsequently deleted by NSR 27720.
- TV NA/NSR 21461 – The A4 Thermal Oxidizer is connected to the A17 Incinerator which had been in operation prior to 1972 but not as a permitted source. As part of this application, A4 was archived as an active source and A17 was permitted separately as a grandfathered source. In addition, S14 and S15 loading racks were permanently removed from service and removed from the Permit.
- TV 27185/NSR 27720 for Change of Conditions for 19329 and 21233, and new Condition 26250. Deletion of 19329 and 21233 for ANCP ([Alternate NOx Compliance Plan](#)) per Reg

9-10-308. New Condition 26250 for ANCP per Reg 9-10-308 and to utilize NOx emission factors for sources without NOx CEMS. There were no emission increases associated with these revisions. The Title V Permit A/N 27185 is associated with these administrative condition changes.

- TV 27185/NSR 27600 for BAAQMD Regulation 9, Rule 10 [Alternate NOx Compliance Plan](#) ~~Alternate NOx Compliance Plan~~ ~~(ANCP)~~ with revisions to Condition 26250).
- TV 27940/NSR 27939 for Termination of the Consent Decree with new Condition 26298 for prohibition of fuel oil combustion in heaters and boilers.
- [TV 27185/NSR 29774 for clarification of A1, A2, A3, A6, and A20 mist eliminator descriptions](#)

B. Facility Description

The Valero Benicia Asphalt Plant is a small-scale petroleum refinery that primarily produces asphalt from crude oil. The by-products (naphtha, kerosene, and gas oil) are transferred to the adjacent Valero fuel refinery or sold to other companies for the production of other petroleum products.

The processes used at the facility are: distillation, vacuum distillation, blending, organic liquid storage, asphalt storage, organic liquid loading, and asphalt loading.

A detailed description of petroleum refinery processes and the resulting air emissions may be found in Chapter 5 of EPA's publication AP-42, Compilation of Air Pollutant Emission Factors. This document may be found at:

<http://www.epa.gov/ttn/chief/ap42>

This document contains descriptions of tank and their emissions and combustion units and their emissions.

The principal sources of air emissions from this refinery are:

- Combustion units (furnaces, boilers, and incinerators)
- Storage tanks
- Fugitive emissions from pipe fittings, pumps, and compressors

Combustion unit emissions are generally controlled through the use of burner technology. Storage tank emissions are controlled through the use of add-on control and or fitting loss control. Fugitive emissions have been controlled through the use of inspection and maintenance. Wastewater treatment facilities are controlled by covering units, gasketing covers, and add on controls, such as carbon canisters. Caustic scrubbers control the H2S in the refinery gas from the crude distillation.

There has been no significant change in emissions.

Changes to permit:

The Responsible Official was changed from John Hill to Donald C. Wilson effective April 17, 2015 per written request from Valero on May 1, 2015.

The Environmental Manager was changed from Donald W. Cuffel to Kimberly A. Ronan.

The BAAQMD address was changed to 375 Beale Street, San Francisco, CA 94105.

The BAAQMD phone number was changed to (415) 749-5000.

C. Permit Content

The legal and factual basis for the permit follows. The permit sections are described in the order presented in the permit. Generally, this statement of basis/permit evaluation addresses only the proposed revisions to the permit. Comprehensive statements of basis were prepared for the previous issues of the permit and are available on request.

I. Standard Conditions`

This section 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.
- The BAAQMD address was changed to 375 Beale Street, Suite 600, San Francisco, CA 94105 in Standard Condition I.F
- Condition I.G – Updated EPA address and contact
- Condition I.G – In basis, removed MOP Volume II, Part 3 Section 4.15 because it does not exist
- Condition K – Accidental Release was added
- Condition J.3 – Revised language for notification for unscheduled events

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 per year of a “regulated air pollutant” (as defined in BAAQMD Rule 2-6-222) or 400 pounds per year of a “hazardous air pollutant” (as defined in BAAQMD Rule 2-6-210).

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.

In response to the BAAQMD October 20, 2015 request for additional information for review of this 2nd renewal of the Title V Permit, the addition of a new table to the Title V permit was considered. As requested by BAAQMD, the new table would be placed in Section II of the permit and would list all exempt sources that could potentially have emissions greater than the Potential to Emit (PTE) levels defined by Regulation 2-6-239.

Regulation 2-6-239 defines federally 'significant' sources as those which have a PTE greater than 2 tons per year of any regulated air pollutant, or more than 400 pounds per year of any hazardous air pollutant. As defined by 2-6-218, the PTE is the maximum capacity of a source to emit based on its physical and operation design. Air pollution control equipment and restrictions on hours of operation or the type or amount of material combusted, stored, or processes is treated as a part of its design if the limitation or the effect it would have on emissions is federally enforceable or legally and practicably enforceable by BAAQMD.

For Facility ID #A0901, exempt sources listed in Table IIC are exempt from BAAQMD permitting requirement but could potentially have emissions greater than the PTE levels defined by Regulation 2-6-239. Upon review of Table IIC, there are no sources with PTE greater than the Regulation 2-6-239 levels. Therefore, there are no federally significant sources that are not listed in the Title V permit and it was not necessary to add a new table to the Title V permit for federally 'significant' sources.

Following are explanations of the differences in the equipment list between the time that the facility originally applied for a Title V permit and the permit proposal date:

Changes to permit:

- Table IIA – Permitted Sources
 - Corrected capacity for S-3, Gas Oil Storage Tank, TK-4601C based on the original Data Form T
 - Revised description for S-17, Truck Loading Racks, #1, 2, 3, and 4, including corrections to the loading rack capacity
 - Revised description for S-31, Rail Car Asphalt and Gas Oil Loading Rack, including corrections to the loading rack capacity
 - Revised description for S-54, Truck Asphalt Loading Rack, #7, including corrections to the loading rack capacity

- Table IIB – Abatement Devices
 - Rows for A1, A2, A3, A6, and A20 Mist Eliminators [clarified the description](#)
 - [Rows for A17, A31, and S24 revised to clarify the description](#)
 - Row for A17 with abatement of S18 deleted to correct error since the requirement for the exhaust from S18 Crude Unit to be routed to the S19 Vacuum Heater was revised (see Condition 1240.II.6) to require S18 exhaust to be routed to the refinery fuel gas recovery system, S9 (Facility B2626)
 - [Row for A17 added for Regulation 6-1-302](#)
 - [Row for A31 added for Regulation 6-1-302](#)
 - [Row for S24 added for Regulation 6-1-302](#)
 - Row for A31 revised to remove the A1, A3, A6, and A20 Mist Eliminators
 - Row for S24 revised to remove the A1, A3, A6, and A20 Mist Eliminators

- Table IIC – Exempt Sources
 - Corrected description for H-4608

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.

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” as defined in BAAQMD Rule 2-6-239.

Changes to permit:

- Condition 26298, Part 1 was added per A/N 27939

The dates of adoption or approval of the rules in Table III have also been updated:

- SIP Regulation 1
- BAAQMD Regulation 2, Rule 1
- SIP Regulation 2, Rule 1
- BAAQMD Regulation 2, Rule 2
- SIP Regulation 2, Rule 2
- BAAQMD Regulation 2, Rule 4
- BAAQMD Regulation 2, Rule 5
- BAAQMD Regulation 3
- BAAQMD Regulation 5
- BAAQMD Regulation 6, Rule 1
- BAAQMD Regulation 8, Rule 3
- CCR, Title 17, Section 93116
- 40 CFR Part 61, Subpart M
- 40 CFR Part 82, Subpart F

The following regulations were added:

- SIP Regulation 8, Rule 3
- CCR, Title 17, Section 93115
- Regulation 6
- Regulation 11, Rule 18
- Regulation 12, Rule 15

The following regulation was deleted:

- BAAQMD Regulation 2, Rule 9

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 or EPA 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 Application Determinations

Applicability of BAAQMD Regulation 6, Rule 1 and SIP Regulation 6

BAAQMD adopted revisions to Regulation 6, Rule 1 on August 1, 2018. At the Benicia Asphalt Plant, the revisions to the rule primarily affect combustion sources and gas-fired control devices, and process-based emission sources. The accompanying BAAQMD staff report provides clarification on applicability of the new and existing requirements. Revisions made to Sections II, III, IV and VII are addressed for facility-wide and source-specific applicability and monitoring requirements. Site-wide applicability on Table III was verified for Regulation 6, Rule 1 requirements that do not require monitoring, including applicability to 6-1-305 from non-permitted sources where fallout could happen because the solids dust is black and visible and could fall onto adjoining property during an upset event. Detailed explanations are provided below for each affected table where source-specific requirements have been deleted. In addition, the updates to Regulation 6, Rule 1 affect applicability for SIP Regulation 6 which has been revised accordingly.

Applicability of BAAQMD Regulation 8, Rule 5 Vapor Control Requirements

Based on review and consultation with BAAQMD enforcement staff in September 2015, revisions were made to Regulation 8-5 applicability for the vapor control requirements of 8-5-302 – Requirements for Submerged Fill Pipes and 8-5-303 – Requirements for Pressure Vacuum Valves to eliminate redundancy of these two levels of vapor loss control with the more efficient control requirements of 8-5-306 – Requirements for Approved Emission Control Systems. Specifically, where Valero has elected to comply with the requirements of 8-5-301 by installation of an approved emission control system, if shown in the Title V permit, the less restrictive requirements for 8-5-302 and 8-5-303 were removed since per the regulation, these sections only apply if used to comply with 8-5-301. This is consistent with the intent of 8-5-301 which requires increasingly more efficient levels of vapor control as the tank size and/or TVP of the tank organic contents increases. When subject to a higher level of control, the lower levels of control do not apply.

Applicability of 40 CFR 60, Subpart J to Tank Degassing and Vapor Control Projects

NSPS Subpart J applicability to tank degassing and vapor control projects has been added to the Title V permit for general site-wide applicability. Vapor control for these projects is achieved by use of portable thermal oxidizers brought on-site by contractors to combust the vapors. The vapors produced by tank degassing and vapor control projects are considered to be refinery fuel gas vent streams subject to the NSPS Subpart J H₂S emission limitations and monitoring requirements. Since the portable thermal oxidizers are used on a temporary basis at each facility, the installation of an H₂S continuous emission monitoring system (CEMS) as required under NSPS Subpart J is not economically feasible and technically impractical to implement. As discussed for NSPS Subpart Ja, based on these unique operating conditions, the contractors who own and operate the portable thermal oxidizers have requested and received approval of Alternative Monitoring Plans (AMPs). The approved AMPs (presented in Appendix B) allow for use of colorimetric tube testing or a portable H₂S meter to determine the concentration of H₂S of gases entering each portable thermal oxidizer (i.e., a ‘grab sample’) in lieu of installation and operation of a CEMS.

Applicability of 40 CFR 60, Subpart Ja to Tank Degassing and Vapor Control Projects

NSPS Subpart Ja applies to tank degassing and vapor control projects and has been added to the Title V permit for general site-wide applicability. Vapor control for these projects is achieved by use of portable thermal oxidizers brought on-site by contractors to combust the vapors. The vapors produced by tank degassing and vapor control projects are considered to be refinery fuel gas vent streams subject to the NSPS Subpart Ja H₂S emission limitations and monitoring requirements. Since the portable thermal oxidizers are used on a temporary basis at each facility, the installation of an H₂S continuous emission monitoring system (CEMS) as required under NSPS Subpart Ja is not economically feasible and technically impractical to implement. Based on these unique operating conditions, the contractors who own and operate

the portable thermal oxidizers have requested and received approval of Alternative Monitoring Plans (AMPs). The approved AMPs (presented in Appendix B) allow for use of colorimetric tube testing or a portable H₂S meter to determine the concentration of H₂S of gases entering each portable thermal oxidizer (i.e., a ‘grab sample’) in lieu of installation and operation of a CEMS.

Applicability of 40 CFR 63, Subpart DDDDD, Boiler MACT Requirements – Asphalt Plant

The Valero Benicia refinery owns and operates boilers and process heaters subject to the requirements of 40 CFR 63, Subpart DDDDD, National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters, known as the Boiler MACT. The finalized rule for 40 CFR 63, Subpart DDDDD was published in the Federal Register on January 31, 2013. As documented in Valero’s Initial Notification for Affected Sources submitted to the BAAQMD May 31, 2013, there are 6 boilers and process heaters at the Benicia refinery that will become subject to the periodic tune-up and initial energy assessment requirements effective January 31, 2016.

The sources and applicable standards are summarized below, including identification of other combustion devices that are not subject to the requirements because they are specifically excluded or do not meet the definition of a boiler or process heater:

| Unit Name | Source Number | Applicable Standards | |
|--|-----------------------------|----------------------|--|
| Boilers and Process Heaters with Heat Input ≥ 10 MMBtu/Hr without A Continuous O₂ Trim System Used to Maintain Optimum Air to Fuel Ratio (Effective January 31, 2016) | | | |
| F4601 H4602A H4602B | S19 S20 S21 | 63.7515 | Annual tune-ups and one-time energy assessment (Effective January 31, 2016) |
| Boilers and Process Heaters with Heat Input < 10 MMBtu/Hr without A Continuous O₂ Trim System Used to Maintain Optimum Air to Fuel Ratio (Effective January 31, 2016) | | | |
| F4603 F4605 F4608 | S24 S34 None (exempt) | 63.7515 | Biennial tune-ups and one-time energy assessment (Effective January 31, 2016) |
| Fuel Gas Combustion Devices That Are Not Subject to 40 CFR 63, Subpart CC | | | |
| H4606 H4607 | A17 A31 | 63.7575 | Do not meet the definition of boilers or process heaters |

Applicability of 40 CFR 63, Subpart CC, Refinery MACT 1 Requirements – Asphalt Plant

The Valero Benicia refinery owns and operates sources subject to the requirements of 40 CFR 63, Subpart CC, National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries, known as Refinery MACT 1. The most recently amended version of 40 CFR 63, Subpart CC was published in the Federal Register on July 13, 2016. This version creates maintenance vents as a subcategory of miscellaneous process vents, revises the requirements for storage tanks, and add requirements for fence line monitoring. These regulatory changes resulted in the following revisions to the Title V permit:

- Requirements for maintenance vents have been included in the Title V permit updates in Tables IV – Y and VII – Y.

- Remove the startup, shutdown, and malfunction (SSM) provisions for storage vessels as indicated by revisions in Table IV – A for General Asphalt Plant Requirements
- Fenceline monitoring provisions have been added to Tables IV and VII – Z (new)
- Added Subpart CC exemption for equipment leaks and recordkeeping for pressure relief devices that are routed to control devices in Table IV – T1
- Added statement for multiple tanks on applicability to 63.646/Subpart G until 63.660/Subpart WW compliance based on 63.640(h) compliance date
- Added 63.655(i)(1)(vi) recordkeeping requirements for multiple tanks
- Renumbered 63.655(i)(5) to 63.655(i)(6) for multiple tanks
- Added 63.660 applicability for multiple Group 1 tanks

Changes to permit:

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

- SIP Regulation 1
- BAAQMD Regulation 2, Rule 1
- BAAQMD Regulation 8, Rule 6
- BAAQMD Regulation 9, Rule 10
- 40 CFR 60, Subpart A
- 40 CFR 60, Subpart J
- 40 CFR 60, Subpart UU
- 40 CFR 61, Subpart A
- 40 CFR 61, Subpart FF
- 40 CFR 63, Subpart A

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

- BAAQMD Regulation 6, Rule 1
- BAAQMD Regulation 8, Rule 18
- BAAQMD Regulation 8, Rule 53
- BAAQMD Regulation 9, Rule 10
- 40 CFR 63, Subpart CC
- 40 CFR 63, Subpart DDDDD

Table IV-A (General Asphalt Plant Requirements)

- BAAQMD 8-5-501.4 removed, does not apply on a site-wide basis
- BAAQMD Regulation 8, Rule 53, new regulation added
- 40 CFR Part 60 Subpart J, added applicability for Tank Degassing and Vapor Control Projects (including applicable AMPs shown in Appendix B)
- 40 CFR Part 60 Subpart Ja, added applicability for Tank Degassing and Vapor Control Projects (including applicable AMPs shown in Appendix B)

- 40 CFR Part 63, Subpart CC, removed detailed citations, all of 63.640(h) applies at a site-wide level.
- 40 CFR Part 63, Subpart CC, revised description of 63.642(e) per regulation amendment
- 40 CFR Part 63, Subpart CC, revised description of 63.642(k) per regulation amendment
- 40 CFR Part 63, Subpart DDDDD, added applicability

Table IV-B (S3)

- 40 CFR Part 63, Subpart CC, added statement on applicability to 63.646/Subpart G until 63.660/Subpart WW compliance based on 63.640(h) compliance date
- 40 CFR Part 63, Subpart CC, added 63.655(i)(1)(iv) recordkeeping requirements for Group 2 storage vessels
- 40 CFR Part 63, Subpart CC, renumbered 63.655(i)(5) to 63.655(i)(6) per regulation amendment
- Condition 1240, Part II.94, added missing condition

Table IV-C (S5, S6, S7, S8, S37, S38, S51, S52, S60, S61, S62, S65)

- Removed applicability for BAAQMD Regulation 6-1-305 and SIP 6-305 because it is shown as a site-wide requirement and there is no potential for fallout of solids dust onto adjoining property during an upset event
- Removed applicability for BAAQMD Regulation 6-1-310 and SIP 6-310 applicability because tank emissions are abated by A31/S24 and the asphalt tanks do not have a stack or vent with sufficiently regular geometry so that both flow volume and contaminant concentrations can be measured
- 40 CFR Part 63, Subpart CC, added statement on applicability to 63.646/Subpart G until 63.660/Subpart WW compliance based on 63.640(h) compliance date
- 40 CFR Part 63, Subpart CC, added 63.655(i)(1)(iv) recordkeeping requirements for Group 2 storage vessels
- 40 CFR Part 63, Subpart CC, renumbered 63.655(i)(5) to 63.655(i)(6) per regulation amendment

Table IV-D (S9)

- BAAQMD 8-5-411.3 removed due to unnecessary detail
- BAAQMD 8-5-502 added, erroneously omitted
- BAAQMD 8-5-502.2 added, erroneously omitted
- BAAQMD 8-5-601 added, erroneously omitted
- BAAQMD 8-5-602, wording added for clarification
- BAAQMD 8-5-603 added, erroneously omitted
- BAAQMD 8-5-604, wording added for clarification
- BAAQMD 8-5-605.1 removed due to unnecessary detail
- SIP 8-5-502 added, erroneously omitted

Table IV-E (S12, S26, S28, S67)

- BAAQMD 8-5-303 removed, no longer applicable
- BAAQMD 8-5-303.1 removed, no longer applicable
- BAAQMD 8-5-303.2 removed, no longer applicable
- BAAQMD 8-5-306.2 added, erroneously omitted
- BAAQMD 8-5-403.1 removed due to unnecessary detail

- BAAQMD 8-5-403.2 removed due to unnecessary detail
- BAAQMD 8-5-411.3 removed due to unnecessary detail
- BAAQMD 8-5-501.4 removed because there are no PV set point requirements for these fixed roof tanks which are abated by the A31 Approved Emission Control System per 8-5-306.1
- BAAQMD 8-5-502, wording added for clarification
- BAAQMD 8-5-502.1 description revised due to removal of 8-5-303.2
- BAAQMD 8-5-502.2 added, erroneously omitted
- BAAQMD 8-5-602, wording added for clarification
- BAAQMD 8-5-603, wording added for clarification
- BAAQMD 8-5-604, wording added for clarification
- SIP 8-5-111.7 added, erroneously omitted
- SIP 8-5-303 removed, no longer applicable
- SIP 8-5-502 added, erroneously omitted
- SIP 8-5-603.1 removed, testing of AECS not applicable to fixed roof tanks because a temperature CPMS for Condition 1240, Part II.58b is used in lieu of Source Test

Table IV-F (S13, S59, S63)

- BAAQMD 8-5-303 removed, no longer applicable
- BAAQMD 8-5-303.1 removed, no longer applicable
- BAAQMD 8-5-303.2 removed, no longer applicable
- BAAQMD 8-5-306.2 added, erroneously omitted
- BAAQMD 8-5-403.1 removed due to unnecessary detail
- BAAQMD 8-5-403.2 removed due to unnecessary detail
- BAAQMD 8-5-411.3 removed due to unnecessary detail
- BAAQMD 8-5-501.4 removed, because there are no PV set point requirements for these fixed roof tanks which are abated by the A31 Approved Emission Control System per 8-5-306.1
- BAAQMD 8-5-502, wording added for clarification
- BAAQMD 8-5-502.1 description revised due to removal of 8-5-303.2
- BAAQMD 8-5-502.2 added, erroneously omitted
- BAAQMD 8-5-602, wording added for clarification
- BAAQMD 8-5-603, wording added for clarification
- BAAQMD 8-5-604, wording added for clarification
- SIP 8-5-111.7 added, erroneously omitted
- SIP 8-5-303 removed, no longer applicable
- SIP 8-5-502 added, erroneously omitted
- SIP 8-5-603.1 removed, testing of AECS not applicable to fixed roof tanks because a temperature CPMS for Condition 1240, Part II.58b is used in lieu of Source Test

Table IV-H (S17)

- Removed applicability for BAAQMD Regulation 6-1-305 and 6-305 because it is shown as a site-wide requirement and there is no potential for fallout of solids dust onto adjoining property during an upset event

- Removed applicability for BAAQMD Regulation 6-1-310 and 6-310 applicability because loading rack emissions are abated by A31/S24 and the loading rack does not have a stack or vent with sufficiently regular geometry so that both flow volume and contaminant concentrations can be measured

Table IV-I (S18)

- Condition 1240, Part I.18j, added missing condition

Table IV-J (S19)

- BAAQMD Regulation 6, Rule 1, updated per regulation amendments, including deletion of 6-1-305 and 6-305 because it is shown as a site-wide requirement and there is no potential for fallout of solids dust onto adjoining property during an upset event and deletion of 6-1-310.3 and 6-310.3 because no measurement is required based on the 6-1-114.3 exemption for 6-1-504 source test requirements for gas-fuel fired indirect heat exchangers , therefore adjustments for standard conditions and specified oxygen concentration are not necessary
- 40 CFR Part 63, Subpart DDDDD, added applicability
- Condition 1240, Part I.3a, deleted condition for consistency with revised Condition 1240
- Condition 1240, Part I.11, deleted condition, NSPS Ja does not apply to A0901, Benicia Asphalt Plant

Table IV-K (S20)

- BAAQMD Regulation 2, Rule 9 deleted for Alternative Compliance Plan
- BAAQMD Regulation 6, Rule 1, updated per regulation amendments, including deletion of 6-1-305 and 6-305 because it is shown as a site-wide requirement and there is no potential for fallout of solids dust onto adjoining property during an upset event and deletion of 6-1-310.3 and 6-310.3 because no measurement is required based on the 6-1-114.3 exemption for 6-1-504 source test requirements for gas-fuel fired indirect heat exchangers , therefore adjustments for standard conditions and specified oxygen concentration are not necessary
- BAAQMD Regulation 9, Rule 10, updated applicability per A/N 27720 and A/N 27600
- SIP Regulation 9, Rule 10, updated applicability per A/N 27720 and A/N 27600
- 40 CFR Part 63, Subpart DDDDD, added applicability
- Condition 19329 deleted for Alternative Compliance Plan per AN 27720
- Condition 21233 deleted for BAAQMD Regulation 9, Rule 10 Compliance per AN 27720
- Condition 26250 added for utilization of NOx emission factors for 9-10-301 compliance as allowed by 9-10-308 per A/N 27720 and A/N 27600

Table IV-L (S21)

- BAAQMD Regulation 2, Rule 9 deleted for Alternative Compliance Plan
- BAAQMD Regulation 6, Rule 1, updated per regulation amendments, including deletion of 6-1-305 and 6-305 because it is shown as a site-wide requirement and there is no potential for fallout of solids dust onto adjoining property during an upset event and deletion of 6-1-310.3 and 6-310.3 because no measurement is required based on the 6-1-114.3 exemption for 6-1-504 source test requirements for gas-fuel fired indirect heat exchangers , therefore adjustments for standard conditions and specified oxygen concentration are not necessary

- BAAQMD Regulation 9, Rule 10, updated applicability per A/N 27720 and A/N 27600
- SIP Regulation 9, Rule 10, updated applicability per A/N 27720 and A/N 27600
- 40 CFR Part 63, Subpart DDDDD, added applicability
- Condition 19329 deleted for Alternative Compliance Plan per AN 27720
- Condition 21233 deleted for BAAQMD Regulation 9, Rule 10 Compliance per AN 27720
- Condition 26250 added for utilization of NOx emission factors for 9-10-301 compliance as allowed by 9-10-308 per A/N 27720 and A/N 27600

Table IV-M (S24)

- BAAQMD Regulation 6, Rule 1, updated per regulation amendments, including deletion of 6-1-305 and 6-305 because it is shown as a site-wide requirement and there is no potential for fallout of solids dust onto adjoining property during an upset event and deletion of 6-1-310.3 and 6-310.3 because no measurement is required based on the 6-1-114.3 exemption for 6-1-504 source test requirements for gas-fuel fired indirect heat exchangers , therefore adjustments for standard conditions and specified oxygen concentration are not necessary
- SIP 8-5-603.1 removed, rolled up citation
- BAAQMD Regulation 9, Rule 10, added exemption for BACT sources
- 40 CFR Part 63, Subpart DDDDD, added applicability

Table IV-N (S31)

- BAAQMD Regulation 6, Rule 1, updated per regulation amendments, including deletion of 6-1-305 and 6-305 because it is shown as a site-wide requirement and there is no potential for fallout of solids dust onto adjoining property during an upset event and deletion of 6-1-310 and 6-310 because loading rack is abated by A31/S24 and the loading rack does not have a stack or vent with sufficiently regular geometry so that both flow volume and contaminant concentrations can be measured

Table IV-O (S34)

- BAAQMD Regulation 6, Rule 1, updated per regulation amendments, including deletion of 6-1-305 and 6-305 because it is shown as a site-wide requirement and there is no potential for fallout of solids dust onto adjoining property during an upset event and deletion of 6-1-310.3 and 6-310.3 because no measurement is required based on the 6-1-114.3 exemption for 6-1-504 source test requirements for gas-fuel fired indirect heat exchangers , therefore adjustments for standard conditions and specified oxygen concentration are not necessary
- BAAQMD Regulation 9, Rule 10, added applicability for small unit requirements
- 40 CFR Part 63, Subpart DDDDD, added applicability

Table IV-P (S54)

- BAAQMD Regulation 6, Rule 1, updated per regulation amendments, including deletion of 6-1-305 and 6-305 because it is shown as a site-wide requirement and there is no potential for fallout of solids dust onto adjoining property during an upset event and deletion of 6-1-310 and 6-310 because loading rack is abated by A31/S24 and the loading rack does not have a stack or vent with sufficiently regular geometry so that both flow volume and contaminant concentrations can be measured

Table IV-Q (S68)

- BAAQMD Regulation 6, Rule 1, updated per regulation amendments, including deletion of 6-1-305 and 6-305 to be consistent with other internal combustion engines as there is no potential for visible particle emissions beyond refinery property boundary and deletion of 6-1-303.1 as the engine is for standby source of power
- BAAQMD 9-8-330.2 removed, no longer applicable
- 40 CFR Part 63, Subpart ZZZZ, added applicability for regulation amendment

Table IV-R (S69)

- BAAQMD Regulation 6, Rule 1, updated per regulation amendments, including deletion of 6-1-305 and 6-305 because it is shown as a site-wide requirement and there is no potential for fallout of solids dust onto adjoining property during an upset event

Table IV-S (S70)

- BAAQMD Regulation 6, Rule 1, updated per regulation amendments, including deletion of 6-1-305 and 6-305 because it is shown as a site-wide requirement and there is no potential for fallout of solids dust onto adjoining property during an upset event and deletion of 6-1-310, 6-1-311, 6-310, and 6-311 because additive mixing tank is abated by A31/S24 and the tank does not have a stack or vent with sufficiently regular geometry so that both flow volume and contaminant concentrations can be measured

Table IV-T1 (Components)

- BAAQMD Regulation 8, Rule 18 and SIP Regulation 8, Rule 18, updated requirements and federal enforceability based on amended regulation
- 40 CFR Part 60, Subpart VV, corrected applicability to remove all requirements except those that apply to compressors
- 40 CFR 60, Subpart VVa, corrected applicability to remove all requirements except those that apply to compressors
- 40 CFR Part 63, Subpart CC, added exemption for equipment leaks and recordkeeping for pressure relief devices routed to a control device
- Footnote a, corrected to reference Table IV-T1 rather than AL

Table IV-U (A17)

- BAAQMD Regulation 6, Rule 1, updated per regulation amendments, including deletion of 6-1-305 and 6-305 because it is shown as a site-wide requirement and there is no potential for fallout of solids dust onto adjoining property during an upset event
- 40 CFR Part 63, Subpart DDDDD, added exemption per definition

Table IV-V (A31)

- BAAQMD Regulation 6, Rule 1, updated per regulation amendments, including deletion of 6-1-305 and 6-305 because it is shown as a site-wide requirement and there is no potential for fallout of solids dust onto adjoining property during an upset event
- BAAQMD 8-5-603.1 removed, rolled up citation
- 40 CFR Part 63, Subpart DDDDD, added exemption per definition

Table IV-W (S71)

- BAAQMD Regulation 6, Rule 1, updated per regulation amendments, including deletion of 6-1-305 and 6-305 because it is shown as a site-wide requirement and there is no potential for fallout of solids dust onto adjoining property during an upset event and deletion of 6-1-303.1 as the engine is for standby source of power

- BAAQMD 9-8-330.2 removed, no longer applicable
- 40 CFR Part 63, Subpart ZZZZ, added applicability for regulation amendment

Table IV-X (H-4608) [added table]

- BAAQMD Regulation 6, Rule 1, added applicability
- BAAQMD Regulation 9, Rule 10, added applicability for small unit requirements
- 40 CFR Part 63, Subpart DDDDD, added applicability

Table IV-Y (maintenance vents) [added table]

- Added new table for requirements for maintenance vents (subcategory of miscellaneous process vents) under 40 CFR 63 Subpart CC

Table IV-Z (Fenceline Monitoring) [added table]

- Added new table for requirements for fenceline monitoring under 40 CFR 63 Subpart CC

V. Schedule of Compliance

Pursuant to BAAQMD Regulation 2-6-426.1, Valero submitted a Major Facility Review Certification Statement with a statement of compliance signed by the responsible official for Facility A0901 certifying that the statement of compliance is true, accurate, and complete based on information and belief formed after reasonable inquiry. Consistent with Regulation 2-6-426.2, Valero submitted an updated Major Facility Review Certification Statement on 9/8/2016, ~~and 7/3/2018~~, and 9/3/2020. Based on the Certification Statements, it has been certified that a Schedule of Non-Compliance is not necessary.

Changes to permit:

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 requirements have 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.

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 that 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 1240

- Introduction, added description of AN 29774
- Part I.11, Deleted, NSPS Ja for NOx does not apply to A0901, Benicia Asphalt Plant. As noted in the deletion statement, BAP process vent gases are controlled by refinery flares, S-18, South Flare and S-19, North Flare with supporting NSPS Ja applicability for these flares as shown in the refinery Title V permit (Facility ID B2626)
- S13, Description, Revised ~~to description for~~ Mist Eliminators A3 and A20 per NSR AN 29774
- S59, Description, Revised description for Mist Eliminators A1 and A3 per NSR AN 29774
- S63, Description, Revised description for Mist Eliminators A3 and A20 per NSR AN 29774
- S3, Description, Revised description for Mist Eliminators A3 and A20 per NSR AN 29774
- S12, Description, Revised description for Mist Eliminators A1 and A3 per NSR AN 29774
- S5, Description, Revised description for Mist Eliminators A1 and A3 per NSR AN 29774
- S6, Description, Revised description for Mist Eliminators A1 and A3 per NSR AN 29774
- S7, Description, Revised description for Mist Eliminators A1 and A3 per NSR AN 29774
- S8, Description, Revised description for Mist Eliminators A1 and A3 per NSR AN 29774
- S37, Description, Revised description for Mist Eliminators A3 and A20 per NSR AN 29774
- S38, Description, Revised description for Mist Eliminators A3 and A20 per NSR AN 29774
- S51, Description, Revised description for Mist Eliminators A3 and A20 per NSR AN 29774
- S52, Description, Revised description for Mist Eliminators A3 and A20 per NSR AN 29774
- S53, Description, Revised description for Mist Eliminators A3 and A20 per NSR AN 29774

- S60, Description, Revised [description for](#) Mist Eliminators A3 and A20 [per NSR AN 29774](#)
- S61, Description, Revised [description for](#) Mist Eliminators A3 and A20 [per NSR AN 29774](#)
- S62, Description, Revised [description for](#) Mist Eliminators A3 and A20 [per NSR AN 29774](#)
- S65, Description, Revised [description for](#) Mist Eliminators A3 and A20 [per NSR AN 29774](#)
- S70, Description, Revised [description for](#) Mist Eliminators A3 and A20 [per NSR AN 29774](#)
- S17, Description, Revised [description for](#) Mist Eliminator A2 [per NSR AN 29774](#)
- S31, Description, Revised Mist Eliminator A6 [per NSR AN 29774](#)
- S54, Description, Revised [description for](#) Mist Eliminators A3 and A20 [per NSR AN 29774](#)
- Part II.58c and 58f, Revised for applicability to S-24 in addition to A-31 as referenced in Part 58b
- Part I.65, Revised [description for](#) Mist Eliminator A2 [per NSR AN 29774](#)
- Part I.68, Revised [description for](#) Mist Eliminator A2 [per NSR AN 29774](#)

Condition 19329

- Condition has been deleted per A/N 27720

Condition 21233

- Condition has been deleted per A/N 27720

Condition 26250

- New Condition has been added per A/N 27720 and revised per A/N 27600

Condition 26298

- New Condition has been added per A/N 27939

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.

The District has reviewed all monitoring and has determined the existing monitoring is adequate with the following exceptions.

The tables below contain only the limits for which there is no monitoring or inadequate monitoring in the applicable requirements. The District has examined the monitoring for other limits and has determined that monitoring is adequate to provide a reasonable assurance of compliance. Calculations for potential to emit will be provided in the discussion when no monitoring is proposed due to the size of a source.

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 requirements only when it can support a conclusion that existing monitoring is inadequate.

Changes to permit:

- Table VII – Asphalt Plant
 - New row for H2S for 40 CFR Part 60 Subpart J (including applicable AMPs for Tank Degassing and Vapor Control Projects shown in Appendix B)
 - New row for H2S for 40 CFR Part 60 Subpart Ja (including applicable AMPs for Tank Degassing and Vapor Control Projects shown in Appendix B)
 - New row for VOC for BAAQMD Regulation 8, Rule 53
- Table VII – B (S3)
 - New row for 40 CFR Part 63, Subpart CC and Subpart WW recordkeeping requirements
- Table VII – C (S5, S6, S7, S8, S37, S38, S51, S52, S53, S60, S61, S62, S65)
 - BAAQMD Regulation 6, Rule 1, removed applicability for BAAQMD Regulation 6-1-310 and 6-310 because tank emissions are abated by A31/S24 and the tanks do not have a stack or vent with sufficiently regular geometry so that both flow volume and contaminant concentrations can be measured
 - New row for 40 CFR Part 63, Subpart CC and Subpart WW recordkeeping requirements
- Table VII – D (S9)
 - Added applicability for BAAQMD Regulation 8, Rule 5
- Table VII – E (S12, S26, S28, S67)
 - Removed applicability for BAAQMD Regulation 8-5-303
 - Added applicability for BAAQMD Regulation 8, Rule 5
- Table VII - F (S13, S59, S63)
 - Removed applicability for BAAQMD Regulation 8-5-303
 - Added applicability for BAAQMD Regulation 8, Rule 5
- Table VII – H (S17)
 - BAAQMD Regulation 6, Rule 1, deleted 6-1-310 and 6-310 because loading rack is abated by A17 and all asphalt trucks are loaded under Asphalt Tank Truck Dome Inspection Program per Condition 1240, part IV.2
- Table VII – J (S19)

- BAAQMD Regulation 6, Rule 1, removed applicability for 6-1-310.3 and 6-310.3 and removed specified oxygen concentration because no measurement is required based on the BAAQMD Staff Report for Reg 6-1 which states that gas-fuel fired indirect heat exchangers are exempt from compliance testing required by 6-1-504 (page 10), therefore adjustments for standard conditions and specified oxygen concentration are not necessary
- Table VII – K (S20)
 - NOx row 9-10-301 citation, removed 9-10-301 and added alternate citation 9-10-308 and Condition 26250 Part 9, updated limit text, and updated the monitoring requirement citation to BAAQMD 9-10-501.2.1 with Condition 26250 Part 2 per A/N 27720 and A/N 27600
 - NOx row 9-10-301 citation, row has been deleted as Condition 21233 has been deleted per A/N 27720
 - NOx row 9-10-303 citation, updated monitoring requirement citation to BAAQMD 9-10-502.1.2.1 and Condition 26250 Part 2 per A/N 27720
 - CO row, updated monitoring requirement citation to Condition 26250 Part 6 per A/N 27720
 - BAAQMD Regulation 6, Rule 1, removed applicability for 6-1-310.3 and 6-310.3 and removed specified oxygen concentration because no measurement is required based on the BAAQMD Staff Report for Reg 6-1 which states that gas-fuel fired indirect heat exchangers are exempt from compliance testing required by 6-1-504 (page 10), therefore adjustments for standard conditions and specified oxygen concentration are not necessary
 - Throughput row, replaced Condition 19329 with new Condition 26250 as citation of limit
- Table VII – L (S21)
 - NOx row 9-10-301 citation, removed 9-10-301 and added alternate citation 9-10-308 and Condition 26250 Part 9, updated limit text, and updated the monitoring requirement citation to BAAQMD 9-10-501.2.1 with Condition 26250 Part 2 per A/N 27720 and A/N 27600
 - NOx row 9-10-301 citation, row has been deleted as Condition 21233 has been deleted per A/N 27720
 - NOx row 9-10-303 citation, updated monitoring requirement citation to BAAQMD 9-10-502.1.2.1 and Condition 26250 Part 2 per A/N 27720
 - CO row, updated monitoring requirement citation to Condition 26250 Part 6 per A/N 27720
 - BAAQMD Regulation 6, Rule 1, removed applicability for 6-1-310.3 and 6-310.3 and removed specified oxygen concentration because no measurement is required based on the BAAQMD Staff Report for Reg 6-1 which states that gas-fuel fired indirect heat exchangers are exempt from compliance testing required by 6-1-504 (page 10), therefore adjustments for standard conditions and specified oxygen concentration are not necessary
 - Throughput row, replaced Condition 19329 with new Condition 26250 as citation of limit

- Table VII – M (S24)
 - BAAQMD Regulation 6, Rule 1, removed applicability for 6-1-310.3 and 6-310.3 and removed specified oxygen concentration because no measurement is required based on the BAAQMD Staff Report for Reg 6-1 which states that gas-fuel fired indirect heat exchangers are exempt from compliance testing required by 6-1-504 (page 10), therefore adjustments for standard conditions and specified oxygen concentration are not necessary
 - Moved applicability for 40CFR60.472(c) for correct alphanumeric position
- Table VII – N (S31)
 - BAAQMD Regulation 6, Rule 1, removed applicability for 6-1-310 and 6-310 because loading rack is abated by A31/S24 and the loading rack does not have a stack or vent with sufficiently regular geometry so that both flow volume and contaminant concentrations can be measured
- Table VII – O (S34)
 - BAAQMD Regulation 6, Rule 1, removed applicability for 6-1-310.3 and 6-310.3 and removed specified oxygen concentration because no measurement is required based on the BAAQMD Staff Report for Reg 6-1 which states that gas-fuel fired indirect heat exchangers are exempt from compliance testing required by 6-1-504 (page 10), therefore adjustments for standard conditions and specified oxygen concentration are not necessary
- Table VII – P (S54)
 - BAAQMD Regulation 6, Rule 1, deleted 6-1-310 and 6-310 because loading rack is abated by A31/S24 and the loading rack does not have a stack or vent with sufficiently regular geometry so that both flow volume and contaminant concentrations can be measured and all asphalt trucks are loaded under Asphalt Tank Truck Dome Inspection Program per Condition 1240, part IV.2
- Table VII – Q (S68)
 - BAAQMD Regulation 6, Rule 1, removed applicability for 6-1-303.1 for renumbered regulation
 - Row for hours of operation for citation BAAQMD 9-8-330.2 deleted, no longer applicable (note: this is not marked as a change due to merged rows)
- Table VII – R (S69)
 - BAAQMD Regulation 6, Rule 1, updated 6-1-311.1 to show table of applicable limits based on process weight
- Table VII – S (S70)
 - BAAQMD Regulation 6, Rule 1, removed applicability for 6-1-310 and 6-310 because mixing tank is abated by A31/S24 and the tank does not have a stack or vent with sufficiently regular geometry so that both flow volume and contaminant concentrations can be measured
- Table VII – T1 (Components)
 - Updated BAAQMD and SIP Regulation 8, Rule 18 requirements based on amended regulation
- Table VII – V (A31)

- [Moved applicability for 40CFR60.472\(c\) for correct alphanumeric position](#)
- Table VII – W (S71)
 - Row for hours of operation for citation BAAQMD 9-8-330.2 deleted, no longer applicable (note: this is not marked as a change due to merged rows)
 - [BAAQMD Regulation 6, Rule 1, removed applicability for 6-1-303.1 for renumbered regulation](#)
- Table VII – Y (Maintenance Vents)
 - Added new table for requirements for maintenance vents (subcategory of miscellaneous process vents) under 40 CFR 63 Subpart CC
- Table VII-Z (Fenceline Monitoring) [added table]
 - Added new table for requirements for fenceline monitoring under 40 CFR 63 Subpart CC

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” as defined by Regulation 2-6-202.

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

Changes throughout Section VIII

- [BAAQMD Regulation 6, Rule 1](#)
 - [Updated descriptions per amended regulation](#)
- BAAQMD Regulation 8, Rule 18
 - Updated test method for determination of mass emissions based on amended regulation
- BAAQMD Regulation 8, Rule 53
 - Added applicable test methods for new regulation
- BAAQMD Regulation 9, Rule 10
 - Removed row for 9-10-301 since limit is no longer applicable
 - Added 9-10-308 to row for 9-10-303 since acceptable test methods are identical
 - Removed 9-10-602 as it does not apply to any sources in the asphalt plant
- 40 CFR Part 60 Subpart J
 - Added applicable test methods for fuel gas H₂S concentration limit for fuel gas combustion devices (tank degassing and vapor control projects), including applicable AMPs (see Appendix B)
- 40 CFR Part 60 Subpart Ja
 - Added applicable test methods for fuel gas H₂S concentration limit for fuel gas combustion devices (tank degassing and vapor control projects), including applicable AMPs (see Appendix B)

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.

There are no proposed changes to the permit shield for this permit.

X. Revision History

Changes to permit:

The revision history was updated.

XI. Glossary

Changes to permit:

~~The glossary was not updated. Removed the acronym for FP which was replaced with TSP throughout the permit.~~

Added the acronym for ANCP.

D. Alternate Operating Scenarios:

No alternate operating scenario has been requested for this facility.

E. Compliance Status:

Pursuant to BAAQMD Regulation 2-6-426.1, Valero submitted a Major Facility Review Certification Statement with a statement of compliance signed by the responsible official for Facility A0901 certifying that the statement of compliance is true, accurate, and complete based on information and belief formed after reasonable inquiry. Consistent with Regulation 2-6-426.2, Valero submitted Major Facility Review Certification Statements on 9/6/2016 and 7/3/2018.

F. Differences between the Application and the Proposed Permit:

There are no differences between the application(s) and the proposed Renewal Title V permit.

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APPENDIX A
Permit Evaluations
For

- 21461 – A17 Loading Rack Abatement Device (This Engineering Evaluation was inadvertently omitted from Revision 3 SOB. All changes were incorporated into Revision 3 permit)
- 23451 – Condition 21233 Low Fire Definition (This Engineering Evaluation was included in the Revision 3 SOB, but the changes were not incorporated into Revision 3. The changes have been incorporated into this Renewal permit, but were subsequently superseded by deletion of Condition 21233 per AN 27720)
- 27720 – Change of Conditions for 19329, 21233, 26250
- 27185/27600 – BAAQMD Reg 9-10 NOx [Alternate NOx Compliance Plan](#) ~~ANCP~~ with revisions to Condition 26250
- 27940/27939 – Termination of Consent Decree with new Condition 26298 (prohibition of liquid fuel combustion)

**EVALUATION REPORT
VALERO BENICIA ASPHALT PLANT**

Application #21641 - Plant #13193

**3001 Park Road
Benicia, CA 94510**

I. BACKGROUND

Valero has submitted this application for a Permit to Operate for the following equipment:

A-17 Asphalt Loading Rack Incinerator (H46100), McGill Inc., 2.9 MMBtu/hr, abates S-17 Asphalt Truck Loading Rack

and archive the following sources:

A-4 Thermal Oxidizer (H4606), McGill Inc., 6.5 MMBtu/hr, abates S-17 Asphalt Truck Loading Rack , S-14 Naphtha Truck loading Rack and S-15 Gas Oil Truck Loading Rack

S-14 Naphtha Truck Loading Rack

S-15 Gas Oil Truck Loading Rack

While planning for the new blowdown line that connects the BAP Crude Unit (S-18) to Valero Refinery's blowdown system (S-9), Valero discovered that A-4 Thermal Oxidizer (H4606) is connected to A-17 Incinerator (H46100), which has not been permitted but had been in operation prior to 1972. A-17 will be permitted separately as an existing grandfathered source because it may have been combined as part of A-4 and it is the actual abatement device that is used to abate S-17 Asphalt Truck Loading Rack all this times. It is unknown why A-17 is not permitted as a separate source. In order to correct this oversight, the unpermitted equipment will be given a source number and A-4 will be shut down at this time to save energy. A-4 will continue to serve as the emission stack for A-17 as it has always been in the past. This oversight was not seen as a problem during annual inspection visits by the District but will be corrected in this application.

In May 2004, a source test was conducted on A-17 under normal plant operations to demonstrate compliance with the minimum destruction efficiency of 98.5%, set forth in Condition 1240.II.68 of the BAP Title V permit. The source test result showed 99.3% destruction efficiency with an average temperature of 1570°F. Based on this review, the temperature of Condition 1240.II.19 will be revised from 1400°F to 1570°F to match with the source test result. The source test was actually performed at A-17, not at A-4 in 2004. See the attached test result.

II. EMISSION CALCULATIONS

A-17 is expected to perform the same level as before; therefore, this application will not result in an emissions increase.

III. PLANT CUMULATIVE INCREASE SINCE 4/5/1991

There are no net changes to the plant cumulative emissions, because there is no emission increase from existing levels with this application.

IV. TOXIC SCREENING ANALYSIS

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, emission offsets are not needed per Regulation 2-2-302.

VII. STATEMENT OF COMPLIANCE

The Asphalt Loading Rack S-17 at the asphalt plant will continue to be exempt from Regulation 8-6-110 - Exemption, Low Vapor Pressure Organic Liquids for loading low vapor pressure materials that are less than or equal 0.5 psia.

The Asphalt Loading Rack S-17 is subject to and expected to be in compliance with Regulation 8-15 Organic Compounds, Emulsified and Liquid Asphalts.

Source S-17 is subject to and expected to comply with the requirement of Regulation 6, Rule 1 – 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.

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 3.1 for Bulk Loading Facilities.

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.

Offsets, NSPS, NESHAP and PSD are not applicable.

VIII. CONDITIONS

Permit condition #1240 for the Valero Benicia Asphalt Plant.

For All Sources

Permit Conditions II. 1, 11, 12, and 13; and IV. 1, 2, and 3 were modified or added as part of App. No. 14513.

Pursuant to permit application #17515, permit condition I.8 was modified, conditions I.9 and I.10 were added, and what had been conditions I.9 and I.10 were renumbered as I.11 and I.12, respectively.

Pursuant to permit application #17687 the total asphalt plant wide heat input has been corrected from 42 to 66.17 MMBTU/HR, S13 and S59 were permitted, and S12 was exempted from permitting.

Pursuant to permit application #1261 (May, 2000) the total asphalt plant-wide heat input has been corrected from 76.06 to 86.6 MMBTU/HR, and the allowable heat input for S19 was increased from 22.4 to 33 MMbtu/hr.

Pursuant to permit application #1819 (October, 2000), the crude oil throughput to the crude unit, S18, was raised to 5,292,000 barrels/yr.

Pursuant to permit application #7123 (March, 2003) the total asphalt plant-wide heat input has been corrected from 86.6 to 93.6 MMBTU/HR, and the allowable heat input for S19 was increased from 33 to 40 MMBtu/hr.

Pursuant to permit application #19384 (February, 2009), All sources that are abated by A31 or S24 can now also be contained in the closed vent system when the blower is not operating until the pressure of the system reaches 0.5 ounces (0.87 inches of water column). The P/V valves on all sources abated by A31 or S24 shall not exceed 500 ppmv of total organic compounds while the blower is not operating.

Pursuant to permit application # 19193 (February, 2009), process offgas from S-18 Crude Unit routed from the S19 Vacuum Heater to the refinery fuel gas recovery system, S9, Facility B2626.

Pursuant to permit application #21641 (March, 2010), A17 (H46100) is separated from A4 (H4606). A17 will continue to abate S17 Asphalt Truck Loading Rack. A4 will be shut down and serve as an emission stack downstream of A17.

I. ASPHALT PLANT CONDITIONS

S18 Crude Unit, amended by Application 19193

1. The total throughput of feed oil to S18 Crude Unit shall not exceed 5,292,000 barrels in any consecutive 12-month period. (cumulative increase, toxics, offsets)
2. The total throughput of feed oil to S18 Crude Unit shall not exceed 18,000 barrels in any calendar day. (cumulative increase, toxics)
3. The owner/operator of S-18 Crude Unit shall vent its emissions to the refinery fuel gas recovery system S-9 at all times. (cumulative increase, toxics)
4. Each day, the permittee shall record, by material name, in a District approved log, the total volume of each and every liquid material throughput to S18 during the preceding calendar day, in gallon units or barrel units. At the conclusion of each month, the permittee shall total the daily log records and record the sum as the monthly throughput of all liquid materials to S18, in a District approved log. Additionally, the permittee shall record in the District approved log the

throughput of all liquid materials to S18 for each rolling 12 consecutive month period. This log shall be retained for at least 5 years from date of entry, shall be kept on site, and shall be made available to the District staff on request. (cumulative increase)

5. The maximum heat input to all asphalt plant combustion units except S68, Emergency Diesel-Powered Firewater Pump, shall not exceed a total of 93.6 MM BTU/Hr. Compliance will be determined from the daily reading of the PG&E natural gas flow meter. These meter readings shall be logged and initialed by the operations coordinator on a daily basis. These readings and the monthly PG&E bills shall be made available to the District upon request. (cumulative increase)

5a. The owner/operator of S19 shall only use natural gas and the maximum heat input to S19, Vacuum Heater, shall not exceed 40 MMbtu/hr. (cumulative increase)

5b. CO emissions in the exhaust of S19, Vacuum Heater, shall not exceed 50 ppmdv at 3% oxygen over any one-hour period. (cumulative increase, BACT)

5c. CO emissions in the exhaust of S19, Vacuum Heater, shall not exceed 1.47 lb/hr over any one-hour period. (cumulative increase, BACT)

6. Fuel oil and/or diesel fuel shall not be combusted in the asphalt plant's heaters or boilers or other combustion sources except for S68, Emergency Diesel-powered Firewater Pump and S71, Emergency Diesel-powered Air Compressor. (cumulative increase) (modified 8/12/99, 4/24/02, 4/19/06)

7. Mechanical seals will be installed on all new rotary pumps and compressors. Mechanical packing of best available design will be installed in new reciprocating pumps. All compressor seals will be vented to an operating firebox or the vapors will otherwise be eliminated by a method, which is satisfactory to the District. (cumulative increase)

8. Vacuum Heater (S19) shall be equipped with a John Zink LoNOx Burner. Average NOx emissions from S19 shall not exceed 25 ppm corrected to 3% oxygen on a dry basis (one hour averaging period). (cumulative increase, BACT)

9. Deleted 06/02/98.

10. Boilers S20 and S21 and heater S19 shall be equipped with individual continuous recording oxygen analyzers. (2-1-403)

11. Contingent on EPA's approval of 40 CFR 60, Subpart Ja – Standards of Performance for Petroleum Refineries, the owner/operator shall submit a permit application the District for NOx and flaring applicability and revise the Title V permit if necessary. (Regulation 2-1-403)

12. Deleted (vacuum exhaust routed from S19, Vacuum Heater to refinery fuel gas recovery system, S9, Facility B2626)

13. Deleted (vacuum exhaust routed from S19, Vacuum Heater to refinery fuel gas recovery system, S9, Facility B2626)

14. Total asphalt plant emissions shall not exceed the limits listed below:

- a. Non-Methane Hydrocarbons..... 42.705 tons/yr
 - b. Sulfur Dioxide, SO₂..... .. 28.049 tons/yr
 - c. Nitrogen Oxides, as NO₂..... 40.047 tons/yr
- (Cumulative Increase)

15. Asphalt plant wastewater and refinery wastewater shall not be used for dust control at this facility. (Cumulative Increase)

16a. Deleted. 3/2010. Redundant with Condition 21233, part 7.

16b. Deleted (basis: requirement no longer applicable since exhaust from S18 Crude Unit routed from the S19, Vacuum Heater to the refinery fuel gas recovery system, S9, Facility B2626)

17. A/C source test condition, deleted.

18. To assure compliance with part I.14 of Condition 1240, the permit holder shall perform the following monitoring on a semi-annual basis, starting on January 1 of each year.

18a. The permit holder shall estimate emissions of Non-methane hydrocarbons (NMHC) and nitrogen oxides for each quarter.

18b. The permit holder shall estimate fugitive NMHC emissions from valves, flanges, pumps, and compressors using the draft "California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities" dated February 1999, or later version.

18c. The permit holder shall estimate tank NMHC emissions from the following tanks using the most recent version of EPA's "Tanks" program or EPA publication AP-42: S3, S5-S9, S13, S37, S38, S51-S53, S59-S63, S65, S70.

18d. The permit holder shall estimate NMHC emissions from the following loading racks using EPA publication AP-42: S16, S17, S31, S54.

18e. The permit holder shall estimate NMHC emissions from the following wastewater sources using the most recent version of EPA's "Water" program: S27, S41, S66, S67. The permit holder may use maximum potential to emit in place of measured throughput.

18f. The permit holder shall estimate NMHC emissions from the following combustion sources: S19-S21. The permit holder shall use fuel measurements for each fuel, the F-factor method in EPA Method 19, and the average concentration in the last source test for these estimates.

18g. The permit holder shall estimate NMHC emissions from the following combustion sources: S24, S34, A17, A31. The permit holder shall use the maximum capacity as an estimate of the fuel usage, and the appropriate emission factor from EPA publication AP-42. The permit holder shall estimate NMHC emissions from S68 and S71. The permit holder shall use the maximum capacity as an estimate of the fuel usage, the actual hours of operation, and the appropriate emission factor from EPA publication AP-42.

18h. The permit holder shall estimate emissions of nitrogen oxides (NO_x) from the following combustion sources: S19-S21. The permit holder shall use fuel measurements for each fuel, the F-factor method in EPA Method 19, and the average concentration in the last source test for these estimates.

18i. The permit holder shall estimate emissions of nitrogen oxides (NO_x) from the following combustion sources: S24, S34, A17, A31. The permit holder shall use the maximum capacity as an estimate of the fuel usage, and the appropriate emission factor from EPA publication AP-42. The permit holder shall estimate NO_x emissions from S68 and S71. The permit holder shall use the maximum capacity as an estimate of the fuel usage, the actual hours of operation, and the appropriate emission factor from EPA publication AP-42.

18j. Within 30 days after the end of each semi-annual period, the permit holder shall calculate the emission estimates required by parts I.18b through 18i for the quarter, summarize the emission estimates for the period, and for the previous period. If the emission estimates exceed the limits in part I.14 of Condition 1240, the permit holder shall report non-compliance with part I.14 of this condition in accordance with Standard Condition I.F of the Title V permit. The emissions estimates shall be kept on-site for a minimum of five years and be made available to District staff upon request. (Cumulative Increase)

19. The Owner/Operator shall install continuous temperature monitoring and recording device for A17, Incinerator. The Owner/Operator shall operate A17, Incinerator at a minimum temperature of 1570F. 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 Part II.68. (2-6-503)

19a. The temperature limit in part I.19 shall not apply during an “Allowable Temperature Excursion”, provided that the temperature controller setpoint complies with the temperature limit. An Allowable Temperature Excursion is one of the following:

- a. A temperature excursion not exceeding 20 degrees F; 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;
 - 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 (or any consecutive 12 month period).

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)

19b. For each Allowable Temperature Excursion that exceeds 20 degrees F. 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)

19c. For the purposes of parts I.19a and I.19b, a temperature excursion refers only to temperatures below the limit. (basis: Regulation 2-1-403)

19d. The owner/operator shall conduct District approved source tests at A-17 to determine initial compliance with the limits in parts II.68. The owner/operator shall submit the source test results to the District staff no later than 60 days after the source test. (basis: Cumulative Increase)

19e. 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 as specified in Volume V of the District's Manual of Procedures. 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: RACT, Cumulative Increase)

20. Deleted Application 9297

II. TANKAGE AND LOADING RACK CONDITIONS:

- 1. Deleted in Revision 2. Ownership of S2 transferred to Facility B5574 by Application No. 7980/8915.
- 2. Deleted 5/01. Redundant with condition 1240 II.26.
- 3. Deleted 07/20/99. Redundant with condition 1240 II.27.
- 4. Deleted 07/20/99. Redundant with condition 1240 II.54.
- 5. Deleted 07/20/99. Redundant with condition 1240 II.60.
- 6. Deleted (basis: requirement no longer applicable since exhaust from S18 Crude Unit routed from the S19, Vacuum Heater to the refinery fuel gas recovery system, S9, Facility B2626)
- 7. Deleted 07/20/99. Redundant with condition 1240 II.51.
- 8. The owner/operator shall abate emissions from Source S-17 with Abatement device A-17 , Incinerator during all periods of loading operation. . (Cumulative Increase)
- 9. Deleted 08/12/99.**
- 10. Delete. (Source S25 is permanently removed from service)

S1 Crude Oil Storage Tank 1A, External Floating Roof,
Capacity: 3,419,000 Gallons

S2 Crude Oil Storage Tank, External Floating TK-1B,
Capacity: 3,419,000 Gallons

S4 Crude Oil Storage Tank, External Floating Roof,
TK-10A, Capacity: 1,382,000 Gallons
S23 Crude Oil Storage Tank, External Floating Roof,
TK-10B, Capacity: 1,382,000 Gallons

Conditions 11-24 Deleted in Revision 2. Ownership of S1, S2, S4, and S23 transferred to Facility B5574 by Application No. 7980/8915.

S9 Internal Floating Roof Tank, TK-7; Capacity:
571,200 Gallons, White, Storing: Naphtha equipped with a mechanical shoe
primary seal, rim mounted secondary seal, and welded deck

25. Material other than Naphtha may be throughput to or stored in S9, if all of the following are satisfied:

- a. the storage of each material complies with all other conditions applicable to this source
- b. the storage of each material complies with all other applicable regulatory requirements
- c. the permittee keeps District approved records that demonstrate to the District's satisfaction that no toxin listed in Table 2-5-1 is emitted from S9 in an amount in excess of the toxin's respective trigger level set forth in Table 2-1-5. (cumulative increase, toxics)

26. The true vapor pressure of each and all material stored in S9 shall not exceed 11 psia. (cumulative increase, toxics)

27a. S9 shall not be operated unless it is equipped with a District approved internal floating roof with a mechanical shoe primary seal, a rim mounted secondary seal, and a welded deck. (cumulative increase, NSPS)

28. The total throughput of all liquid materials to S9 shall not exceed 24,019,000 gallons (571,880 barrels) in any rolling 12 consecutive month period. (cumulative increase, toxics)

29. On a monthly basis, the permittee shall record in a District approved log the total volume of each and all liquid materials throughput to S9 each month and each rolling 12 consecutive month period, in gallon units or barrel units. This log shall be retained for at least 5 years from date of entry, shall be kept on site, and shall be made available to the District staff on request. (cumulative increase)

S13 Fixed Roof Storage Tank (TK-8); Capacity: 88,000 Gallons, Storing: Kerosene, Light or Heavy Vacuum Gas Oil, and Asphalt abated by (either) A3 or A20 Mist Eliminator F-10 or F-500 and A31 Thermal Oxidizer H-4607. If A31 and the vapor recovery blower are inoperative, S13 emissions shall be contained in a District approved closed vent system as specified in Parts 93 and 96. Alternately, S13 emissions shall be vented to source S24, Hot Oil Heater (H-4603), as a backup until A31 is operating. (cumulative increase)

S59 Fixed Roof Storage Tank (TK-5); Capacity: 1,050,000 Gallons, Storing: Kerosene, Light or Heavy Vacuum Gas Oil and Asphalt, abated by A1 or A3 Mist Eliminator F-8 (or) F-10 and A31 Thermal Oxidizer H-4607. If A31 and the vapor recovery blower are inoperative, S59 emissions shall be contained in a

District approved closed vent system as specified in Parts 93 and 96. Alternately, S59 emissions shall be vented to source S24, Hot Oil Heater (H-4603), as a backup until A31 is operating. (cumulative increase)

S63 Kerosene/Light Vacuum Gas Oil/Heavy Vacuum Gas Oil/Asphalt Storage Tank, Fixed Roof, TK-31, Capacity: 1,218,000 Gallons abated by A3 or A20 Mist Eliminator F-10 or F-500 and A31 Thermal Oxidizer H-4607. If A31 and the vapor recovery blower are inoperative, S63 emissions shall be contained in a District approved closed vent system as specified in Parts 94 and 96. Alternately, S63 emissions shall be vented to source S24, Hot Oil Heater (H-4603), as a backup until A31 is operating. (cumulative increase)

30. Petroleum materials other than Kerosene, Light or Heavy Vacuum Gas Oil, and Asphalt may be stored in S13, S59, and S63 if all of the following are satisfied:

- a. the storage of each petroleum material complies with all other conditions applicable to S13, S59, or S63.
- b. the storage of each petroleum material complies with all other applicable regulatory requirements
- c. the permittee keeps District approved records which demonstrate to the District's satisfaction that no toxin listed in Table 2-1-5 is emitted from S13, S59, or S63 in an amount in excess of the toxin's respective trigger level set forth in Table 2-1-5.

(cumulative increase, toxics)

31. The true vapor pressure of each material stored in S13, S59, or S63 shall not exceed 1.5 psia. (cumulative increase, toxics)

31a. To assure compliance with the limit in part II.31, the permit holder shall take a sample from each tank on an annual basis and determine the true vapor pressure of the sample. Records of these analyses shall be retained for at least 5 years from the date of the analysis, shall be kept on site, and shall be made available to the District staff on request. (cumulative increase, toxics)

32a. The owner/operator shall maintain and operate A31 Thermal Oxidizer H-4607 and S24 Hot Oil Heater H-4603; with an overall collection and destruction efficiency of at least 98.5%, by weight whenever petroleum and VOC materials are stored and/or transferred at S3, S5, S6, S7, S8, S13, S25, S31, S37, S38, S41, S51, S52, S53, S54, S59, S60, S61, S62, S63, S65, S66 and S70. (Regulation 8-5-306, NSPS, cumulative increase, BACT, toxics)

32b. Deleted. Combined with Part 32a.

32c. Deleted. Combined with Part 32a.

32d. Deleted. Redundant with Regulation 8-18.

32e. To monitor compliance with the standard in 40 CFR 60.112b(a)(3)(i) for fugitive emissions at closed vent systems, the owner/operator shall inspect the closed vent systems that control S13, S59, and S63 using EPA Method 21 on a semi-annual basis. (Regulation 2-6-503)

33a. The total combined throughput of all materials to S13, S59, and S63 shall not exceed 68,208,000 gallons (1,624,600 barrels) in any rolling 12 consecutive month period. (cumulative increase, toxics)

33b. Cutback asphalt materials including but not limited to SC Cutback Asphalt, MC Cutback Asphalt, and FM-1 Cutback Asphalt and other cutback asphalt materials shall NOT be stored in or transferred to S63. (toxics)

34. On a monthly basis, the permittee shall record in a District approved log the total volume of each liquid material throughput to S13, S59, or S63 by material name (e.g., kerosene, light vacuum gas oil, heavy vacuum gas oil, asphalt) each month and each rolling 12 consecutive month period, in gallon units or barrel units. This log shall be retained for at least 5 years from date of entry, shall be kept on site, and shall be made available to the District staff on request. (cumulative increase)

35. Deleted May, 2001

36. Deleted May, 2001

37. Deleted May, 2001

38. Deleted May, 2001

39. Deleted May, 2001

S3 Fixed Roof Storage Tank, TK-1C, Storing: Heavy Vacuum Gas Oil, Capacity: 3,415,000 Gallons operated with a District approved vapor recovery system and abated by (either) A3 or A20 Mist Eliminator F-10 or F-500 and A31 Thermal Oxidizer H-7. If A31 and the vapor recovery blower are inoperative, S3 emissions shall be contained in a District approved closed vent system as specified in Parts 94 and 96. Alternately, S3 emissions shall be vented to source S24, Hot Oil Heater (H-4603), as a backup until A31 is operating. (cumulative increase)

40. Materials other than Heavy Gas Oil may be stored in S3, if all of the following are satisfied:

a. the storage of each petroleum material complies with all other conditions applicable to S3

b. the storage of each petroleum material complies with all other applicable regulatory requirements

c. the permittee keeps District approved records that demonstrate to the District's satisfaction that no toxin listed in Table 2-5-1 is emitted from S3 in an amount in excess of the toxin's respective trigger level set forth in Table 2-5-1. (cumulative increase, toxics)

41. The permittee shall ensure that at least 38,300,000 gallons (the 1996 calendar year baseline throughput to S3) of gas oil is throughput exclusively to S3 for storage during every rolling 12 consecutive month period, prior to

transferring/storing gas oil material into another vessel for which VOC emissions are not abated with a destruction efficiency of at least 98.5%, by weight. (offsets)

42. The true vapor pressure of each and all material stored in S3 shall not exceed 0.5 psia. (cumulative increase, NSPS)

43. Deleted. Combined with Part 32a.

44. Deleted. Redundant with Regulation 8-18.

45. All tank fittings present at S3 shall be gasketed. (BACT)

46. At the conclusion of each month, the permittee shall record in a District approved log the total volume of each and all liquid materials throughput to S3 during that month and for each rolling 12 consecutive month period, in gallon units or barrel units. This log shall be retained for at least 5 years from date of entry, shall be kept on site, and shall be made available to the District staff on request. (cumulative increase)

47. Deleted 11/29/99. Start-up condition

S5 Asphalt Storage Tank, Fixed Roof, TK-2A, Capacity: 3,415,000 Gallons abated by either A1 or A3 Mist Eliminator F-8 or F-10 and A31 Thermal Oxidizer H-4607. If A31 and the vapor recovery blower are inoperative, S5 emissions shall be contained in a District approved closed vent system as specified in Parts 93 and 96. Alternately, S5 emissions shall be vented to source S24, Hot Oil Heater (H-4603), as a backup until A31 is operating. (cumulative increase)

S6 Asphalt Storage Tank, Fixed Roof, TK-2B, Capacity: 3,415,000 Gallons abated by either A1 or A3 Mist Eliminator F-8 or F-10 and A31 Thermal Oxidizer H-4607. If A31 and the vapor recovery blower are inoperative, S6 emissions shall be contained in a District approved closed vent system as specified in Parts 93 and 96. Alternately, S6 emissions shall be vented to source S24, Hot Oil Heater (H-4603), as a backup until A31 is operating. (cumulative increase)

S7 Asphalt Storage Tank, Fixed Roof, TK-3, Capacity: 1,050,000 Gallons abated by either A1 or A3 Mist Eliminator F-8 or F-10 and A31 Thermal Oxidizer H-4607. If A31 and the vapor recovery blower are inoperative, S7 emissions shall be contained in a District approved closed vent system as specified in Parts 93 and 96. Alternately, S7 emissions shall be vented to source S24, Hot Oil Heater (H-4603), as a backup until A31 is operating. (cumulative increase)

S8 Asphalt Storage Tank, Fixed Roof, TK-4, Capacity: 1,050,000 Gallons abated by either A1 or A3 Mist Eliminator F-8 or F-10 and A31 Thermal Oxidizer H-4607. If A31 and the vapor recovery blower are inoperative, S8 emissions shall be contained in a District approved closed vent system as specified in Parts 93 and 96. Alternately, S8 emissions shall be vented to source S24, Hot Oil Heater (H-4603), as a backup until A31 is operating. (cumulative

increase)

S37 Asphalt Storage Tank, Fixed Roof, TK 54, Capacity: 100,000 Gallons abated by A3 or A20 Mist Eliminator F-10 or F-500 and A31 Thermal Oxidizer H-4607. If A31 and the vapor recovery blower are inoperative, S37 emissions shall be contained in a District approved closed vent system as specified in Parts 94 and 96. Alternately, S37 emissions shall be vented to source S24, Hot Oil Heater (H-4603), as a backup until A31 is operating. (cumulative increase)

S38 Asphalt Storage Tank, Fixed Roof, TK-55, Capacity: 100,000 Gallons abated by A3 or A20 Mist Eliminator F-10 or F-500 and A31 Thermal Oxidizer H-4607. If A31 and the vapor recovery blower are inoperative, S38 emissions shall be contained in a District approved closed vent system as specified in Parts 94 and 96. Alternately, S38 emissions shall be vented to source S24, Hot Oil Heater (H-4603), as a backup until A31 is operating. (cumulative increase)

S51 Asphalt Storage Tank TK-506; Fixed Roof Tank, Capacity: 152,880 Gallons abated by A3 or A20 Mist Eliminator F-10 or F-500 and A31 Thermal Oxidizer H-4607. If A31 and the vapor recovery blower are inoperative, S51 emissions shall be contained in a District approved closed vent system as specified in Parts 94 and 96. Alternately, S51 emissions shall be vented to source S24, Hot Oil Heater (H-4603), as a backup until A31 is operating. (cumulative increase)

S52 Asphalt Storage Tank TK 507, Fixed Roof Tank, Capacity: 152,880 Gallons abated by A3 or A20 Mist Eliminator F-10 or F-500 and A31 Thermal Oxidizer H-4607. If A31 and the vapor recovery blower are inoperative, S52 emissions shall be contained in a District approved closed vent system as specified in Parts 94 and 96. Alternately, S52 emissions shall be vented to source S24, Hot Oil Heater (H-4603), as a backup until A31 is operating. (cumulative increase)

S53 Asphalt Storage Tank TK 508, Fixed Roof Tank, Capacity: 152,880 Gallons abated by A3 or A20 Mist Eliminator F-10 or F-500 and A31 Thermal Oxidizer H-4607. If A31 and the vapor recovery blower are inoperative, S53 emissions shall be contained in a District approved closed vent system as specified in Parts 94 and 96. Alternately, S53 emissions shall be vented to source S24, Hot Oil Heater (H-4603), as a backup until A31 is operating. (cumulative increase)

S60 Asphalt Storage Tank TK-505; Fixed Roof, Capacity: 15,000 Gallons abated by (either) A3 or A20 Mist Eliminator F-10 or F-500 and A31 Thermal Oxidizer H-4607. If A31 and the vapor recovery blower are inoperative, S60 emissions shall be contained in a District approved closed vent system as specified in Parts 94 and 96. Alternately, S60 emissions shall be vented to source S24, Hot Oil Heater (H-4603), as a backup until A31 is operating. (cumulative increase)

S61 Asphalt Storage Tank, Fixed Roof, TK-30A, Capacity: 995,400 Gallons abated by A3 or A20 Mist Eliminator F-10 or F-500 and A31 Thermal Oxidizer H-4607. If A31 and the vapor recovery blower are

inoperative, S61 emissions shall be contained in a District approved closed vent system as specified in Parts 94 and 96. Alternately, S61 emissions shall be vented to source S24, Hot Oil Heater (H-4603), as a backup until A31 is operating. (cumulative increase)

S62 Asphalt Storage Tank, Fixed Roof, TK-30B, Capacity: 995,400 Gallons abated by A3 or A20 Mist Eliminator F-10 or F-500 and A31 Thermal Oxidizer H-4607. If A31 and the vapor recovery blower are inoperative, S62 emissions shall be contained in a District approved closed vent system as specified in Parts 94 and 96. Alternately, S62 emissions shall be vented to source S24, Hot Oil Heater (H-4603), as a backup until A31 is operating. (cumulative increase)

S65 Asphalt Storage Tank, Fixed Roof, TK-32 Tank Capacity: 6,920,000 Gallons abated by A3 or A20 Mist Eliminator F-10 or F-500 and A31 Thermal Oxidizer H-4607. If A31 and the vapor recovery blower are inoperative, S65 emissions shall be contained in a District approved closed vent system as specified in Parts 94 and 96. Alternately, S65 emissions shall be vented to source S24, Hot Oil Heater (H-4603), as a backup until A31 is operating. (cumulative increase)

S70 Asphalt Additive Mixing Tank, Fixed Roof, Tank Capacity: 2,200 Gallons abated by A3 or A20 Mist Eliminator F-10 or F-500 and A31 Thermal Oxidizer H-4607. If A31 and the vapor recovery blower are inoperative, S70 emissions shall be contained in a District approved closed vent system as specified in Parts 94 and 96. Alternately, S70 emissions shall be vented to source S24, Hot Oil Heater (H-4603), as a backup until A31 is operating. (cumulative increase)

48. The sum total asphalt throughput to S5, S6, S7, S8, S37, S38, S51, S52, S53, S60, S61, S62, and S65 shall not exceed 6,738,349 barrels (283,010,658 gallons) in any 12 consecutive month period. (cumulative increase, offsets)

49. For S5, S6, S7, S8, S37, S38, S51, S52, S53, S60, S61, S62, S65, S70: Cutback asphalt materials including but not limited to SC Cutback Asphalt, MC Cutback Asphalt, and FM-1 Cutback Asphalt and other cutback asphalt materials shall not be stored in or transferred to any of the above tanks. (toxics)

50. For S5, S6, S7, S8, S37, S38, S51, S52, S53, S60, and S70: the true vapor pressure of each and all materials stored in each tank shall not exceed 0.5 psia. (cumulative increase, offsets)

51. For S61 and S62, the true vapor pressure of each and all materials stored in each tank shall not exceed 0.49 psia. (cumulative increase, offsets, BACT)

52. For S65, the true vapor pressure of each and all materials stored in S65 shall not exceed 0.49 psia. (cumulative increase, offsets, BACT)

53. Deleted. Redundant with Regulation 8-18.

54. Deleted May, 2001.

55. Deleted. Combined with Part 32a

56. Deleted. Combined with Part 32a

57. Deleted. Combined with Part 32a

58. Separately, for each of S5, S6, S7, S8, S37, S38, S51, S52, S53, S60, S61, S62 S65, and S70, at the conclusion of each month, the permittee shall record, by material name, in a District approved log, the total volume of each liquid material throughput to each tank during that month and during each rolling 12 consecutive month period, in gallon units or barrel units. This log shall be retained for at least 5 years from date of entry, shall be kept on site, and shall be made available to the District staff on request. (cumulative increase)

58a. Deleted Application 17468.

58b. The Owner/Operator shall install and properly maintain continuous temperature monitoring and recording devices for A31, Thermal Oxidizer (H-4607) and S24, Hot Oil Heater (H-4603). The Owner/Operator shall operate A-31 with a minimum combustion zone temperature of 1400F to maintain a 98.5% destruction efficiency, whenever emissions are vented to it by one or more operational vapor recovery blowers in organic vapor service. The Owner/Operator shall operate S-24 at a minimum operating temperature of 1115F to maintain a 98.5% destruction efficiency, whenever emissions are vented to it by one or more vapor recovery blowers in organic vapor service. (Source Test Requirements demonstrating compliance with the 98.5% abatement destruction efficiency and the Regulation 6-310 grain loading requirements were completed February 28 and 29, 2004.) (Applications 12704 for A-31 and Application 12236 for S-24 have been submitted for the Title V permit revisions) (Basis: 40 CFR 60.113b(c)(1)(ii) and 60.113b(c)(2); 40 CFR 60.473c; 40 CFR 61.354(c)(1); 40 CFR 61.354(c)(4), Regulation 2-6-409.2.2, 2-6-414)

58c. The temperature limit in Part II.58b for A-31 shall not apply during an "Allowable Temperature Excursion", provided that the temperature controller set point remains at a minimum of 1,400°F. An Allowable Temperature Excursion is one of the following:

- a. A temperature excursion not exceeding 20°F; 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°F;
 - 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 (or any consecutive 12 month period).

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)

58d. For each Allowable Temperature Excursion that exceeds 20°F. 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.

58e. For the purposes of parts II.58c and II.58d, a temperature excursion refers only to temperatures below the limit. (basis: Regulation 2-1-403)

58f. For the purposes of parts II.58c and II.58d, a temperature excursion occurs only when one or more vapor recovery system blowers is operating in organic vapor service, and is vented to A-31. When a blower is used to start up A-31, the blower is in “fresh air” service and not in organic vapor service, until A-31 meets the minimum operating temperature and is acceptable to receive organic vapors. (basis: Regulation 2-1-403)

59. Deleted (S14 is no longer in service)

60. Deleted (S14 is no longer in service)

61. Deleted (S14 is no longer in service)

S15. Deleted (S15 is no longer in service, the gas oil stream is routed to the Refinery for further processing)

62. Deleted (S15 is no longer in service, the gas oil stream is routed to the Refinery for further processing)

63. Deleted (S15 is no longer in service, the gas oil stream is routed to the Refinery for further processing)

64. Deleted (S15 is no longer in service, the gas oil stream is routed to the Refinery for further processing)

S17 Asphalt Loading Racks abated by A2 Mist Eliminator F-9 and A17 Incinerator H-46100

S31 Rail Car Loading Rack; 5 Loading Arms, Loading: Asphalt and Light Vacuum Gas Oil abated by A6 Mist Eliminator F-3 and A31 Thermal Oxidizer H-4607. If A31 and the vapor recovery blower are inoperative, S31 emissions shall be contained in a District approved closed vent system as specified in Parts 94 and 96. Alternately, S31 emissions shall be vented to source S24, Hot Oil

Heater (H-4603), as a backup until A31 is operating. (cumulative increase)

S54 Asphalt Loading Rack abated by (either) A3 or A20 Mist Eliminator F-10 or F-500 and A31 Thermal Oxidizer H-4607. If A31 and the vapor recovery blower are inoperative, S54 emissions shall be contained in a District approved closed vent system as specified in Parts 94 and 96. Alternately, S54 emissions shall be vented to source S24, Hot Oil Heater (H-4603), as a backup until A31 is operating. (cumulative increase)

65. S17 shall be abated by A2 Mist Eliminator F-9 and A17 Incinerator H-46100 at all times that materials are transferred at S17. (cumulative increase)

66. [Deleted. Combined with Part 64b]

67. [Deleted. Combined with part 64b]

68. Emissions from S17 shall be captured by a District approved vapor recovery system and shall be abated by A2 Mist Eliminator F-9 and A17 Incinerator H-46100 with a destruction efficiency of at least 98.5%, by weight, as measured across A17. (cumulative increase, BACT)

69. Deleted Combined with Part 32a.

70. Deleted. Combined with Part 32a.

71. The true vapor pressure of the materials transferred at or sampled from S17 and/or S 54 shall not exceed 0.5 psia except for 5,500 Barrels per year of kerosene when required to produce medium-cure cutback asphalt products. (cumulative increase, offsets)

72. The true vapor pressure of the materials transferred at or sampled from S31 shall not exceed 1.5 psia, unless the material contains asphalt. (cumulative increase, toxics, offsets)

72a. To monitor compliance with the standard in BAAQMD Regulation 8-6-306 for vapor tightness of equipment associated with organic liquid delivery and loading operations at S31, the owner/operator shall inspect the equipment using EPA Method 21 on a quarterly basis. (Regulation 2-6-503)

72b. To monitor compliance with the standard in BAAQMD Regulation 8-6-306 for leak-free equipment associated with organic liquid delivery and loading operations at S31, the owner/operator shall inspect the equipment on a quarterly basis. (Regulation 2-6-503)

73. If asphalt or any asphalt containing material or any material blended with asphalt is transferred at or sampled from S31, the true vapor of the material may not exceed 0.5 psia. (cumulative increase, toxics, offsets)

74. The total combined throughput of asphalt and all asphalt containing materials to S17, S31, and S54 shall not exceed 283,011,000 gallons during any consecutive 12-months. (cumulative increase, offsets)

75. The permittee shall maintain a District approved log of the monthly throughput of asphalt and all asphalt containing materials to S17, S31, and S54 in gallon units or barrel units during each month and during each rolling 12 consecutive month period, in gallon units or barrel units. This log shall be retained for at least 5 years from date of entry, shall be kept on site, and shall be made available to the District staff on request. (cumulative increase)

76. Deleted May, 2001.

77. Deleted May, 2001.

78. Deleted May, 2001.

79. Deleted May, 2001.

80. Deleted May, 2001.

81. Deleted May, 2001.

82. Deleted May, 2001.

S66 Oil Water Separator, Physical Capacity: 830 GPM, Permitted Capacity: 210 GPM abated by (either) A1 or A3 Mist Eliminator F-8 or F-10 and A31 Thermal Oxidizer H-4607. If A31 and the vapor recovery blower are inoperative, S66 emissions shall be contained in a District approved closed vent system as specified in Parts 93 and 96. Alternately, S66 emissions shall be vented to source S24, Hot Oil Heater (H-4603), as a backup until A31 is operating. (cumulative increase)

83. The permittee shall ensure that the throughput of liquid material to S66 shall not exceed 110,376,000 gallons per year (210 gallons per minute). (basis: cumulative increase)

84. The cover and each access opening at S66 shall be equipped with a gasketed, vapor tight cover (as defined in Regulation 8, Rule 8). Each cover and access opening shall be kept closed and sealed except when the opening is being used for inspection, maintenance, or wastewater sampling. (basis: Reg. 8, Rule 8)

85. Deleted. Combined with Part 32a.

86. Deleted. Redundant with Regulation 8-18.

87. Not less frequently than on a monthly basis, the permittee shall measure and record the volume (in gallons) of oil (slop oil) product recovered at S66 and not less frequently than on a monthly basis, the permittee shall measure and record the volume (in gallons) of waste water product recovered at S66 (waste water discharge to City of Benicia). The sum of the volume of slop oil product and the

volume of wastewater product shall recorded in a District approved log as the throughput of liquid material to S66. (basis: cumulative increase)

88. On a monthly basis, the permittee shall record in a District approved log the total volume of all liquid materials throughput to S66 each month, in gallon units or barrel units. This log shall be retained for at least 5 years from date of entry, shall be kept on site, and shall be made available to the District staff on request. (basis: cumulative increase)

89. Deleted 2001.

S16 Truck Loading Rack-Heavy Vacuum Gas Oil

90. The true vapor pressure of the materials transferred at and/or sampled from S16 shall not exceed 0.49 psia. (cumulative increase)

91. The total throughput of materials transferred through S16 shall not exceed 25,749,000 gallons (613,000 barrels) during any consecutive 12-months. (cumulative increase)

91a. The permittee shall maintain a District approved log of the monthly throughput of materials transferred at S16 in gallon units or barrel units during each month and during each rolling 12 consecutive month period, in gallon units or barrel units. This log shall be retained for at least 5 years from date of entry, shall be kept on site, and shall be made available to the District staff on request. (cumulative increase)

S41, Wemco Hydrocleaner Induced Air Flotation Machine, abated by A1 or A3 Mist Eliminator F-8 or F-10 and S24 Hot Oil Furnace H-3 or A31 Thermal Oxidizer.

92. The permittee shall ensure that the throughput of liquid material to S41 shall not exceed 77,263,200 gallons per year (147 gallons per minute). (basis: cumulative increase)

92a. The permittee shall maintain a District approved log of the monthly throughput of liquid material transferred to S41 in gallon units during each month and during each rolling 12 consecutive month period. This log shall be retained for at least 5 years from date of entry, shall be kept on site, and shall be made available to the District staff on request. (cumulative increase)

93. The following sources, which shall be operated with a District approved closed vent system, are connected to vapor recovery collection header #1 and vapor recovery blower B-4608 or spare blower B-46501: S5, S6, S7, S8, S25, S41, S59, and S66. Emissions are contained in the closed vent collection header whenever a blower is not operating, as long as no P/V valve in the header is lifting. The pressure of each of the three headers at a representative location shall be monitored at least once every 8 hours, whenever the vapor recovery blower is not operating. If the manometer pressure of any header exceeds 0.5 ounces (0.87

inches of water column), A-31 or S-24 shall be restarted and emissions conveyed to it by the blower. (basis: cumulative increase)

94. The following sources, which shall be operated with a District approved closed vent system, are connected to vapor recovery collection header #2 and vapor recovery blower B-46500 or spare blower B-46501: S3, S13, S37, S38, S51, S52, S53, S54, S60, S61, S62, S63, S65, and S70. Emissions are contained in the closed vent collection header whenever a blower is not operating, as long as no P/V valve in the header is lifting. The pressure of the each of the three headers at a representative location shall be monitored at least once every 8 hours, whenever the vapor recovery blower is not operating. If the manometer pressure of any header exceeds 0.5 ounces (0.87 inches of water column), A-31 or S-24 shall be restarted and emissions conveyed to it by the blower. (basis: cumulative increase)

95. To determine compliance with Parts 93 and 94, 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. All manometer pressures of each of the three headers abated by A-31 or S-24
- b. Date and time when the blower is down and which abating equipment (A-31, closed vent system or S-24) is in operation
- c. Reason why the blower is down

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)

96. The owner/operator of S3, S5, S6, S7, S8, S12, S13, S25, S26, S27, S28, S31, S37, S38, S-39, S40, S41, S51, S52, S53, S54, S59, S60, S61, S62, S63, S65, S66, S67 and S70 shall not use any P/V valve that leaks total organic compounds in excess of 500 ppmv when the vapor recovery blower is not operating. Any exceedance of this limit will result in a violation, except for P/V valve that is subject to Regulation 8-18 and is already on the non-repairable list. (basis: to allow the use of closed vent system in lieu of A-31 or S-24)

III. MARINE OPERATIONS CONDITIONS-S30, Part 1 through 9, deleted because S30 was not in service since April 5, 2005
(Cumulative Increase)

IV. ODOR REDUCTION MEASURES (Added per AN 14513, 9/95)

*1. The permit holder will maintain water seals, P-traps, caps, covers or equivalent on all process water drains. (1-301)

*2. The permit holder will implement an Asphalt Tank Truck Dome Inspection Program for all asphalt tank trucks that they load. If a truck enters the facility with a leaking or malfunctioning dome lid, the permit holder will take the following action.

*a. First occurrence in rolling twelve month period: the permit holder will orally notify the truck driver and dispatcher of the faulty dome lid, and request that the lid be repaired prior to the truck re-entering the facility.

*b. Second occurrence in a rolling twelve month period: the permit holder will notify the driver and the trucking company in writing that if the truck enters the facility again with a malfunctioning dome hatch, the permit holder will not load the truck until the hatch has been repaired.

*c. Third occurrence in a rolling twelve-month period: the permit holder will not load the truck. The permit holder will also notify the driver and dispatcher, verbally and in writing, that the truck will not be loaded until the hatch has been repaired, and the repair has been inspected or repair documentation has been received by the permit holder to ensure that the hatch is in proper working order.

*The permit holder shall keep records of all inspections and notifications. These records shall be made available to the District upon request.
(1-301)

*3. The permit holder shall provide written notification of the Asphalt Tank Truck Dome Inspection Program to any additional trucking company that may do business with the permit holder in the future, within two weeks of the first asphalt receipt. (1-301)

V. OTHER SOURCES

S24 Hot Oil Heater H-4603; Max Firing Rate 9 MM BTU/hr

1. Respective emissions of nitrogen oxides, and carbon monoxide (CO) from S24 shall not exceed 30 ppm and 50 ppm at 3% O₂. (Cumulative Increase)

IX. RECOMMENDATION

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

A-17 Asphalt Loading Rack Incinerator (H46100), McGill Inc., 2.9 MMBtu/hr, abates S-17 Asphalt Truck Loading Rack

and archive the following sources:

A-4 Thermal Oxidizer (H4606), McGill Inc., 6.5 MMBtu/hr, abates S-17 Asphalt Truck Loading Rack , S-14 Naphtha Truck loading Rack and S-15 Gas Oil Truck Loading Rack

S-14 Naphtha Truck Loading Rack

S-15 Gas Oil Truck Loading Rack

Thu H. Bui

*Senior Air Quality Engineer
Engineering Division
Date:*

THB:T\ValeroAsphalt\21641e

**EVALUATION REPORT
Valero Benicia Asphalt Plant
Plant Number 13193
Application Number 23451**

**3400 East Second St.
Benicia, CA 94510**

I. Background

Valero Benicia Asphalt is requesting to change the NOx Box Permit Condition # 21233 for the following sources at its Benicia Refinery:

- S-20 Steam Boiler, Maximum Firing Rate 14.7 MMBtu/hr**
- S-21 Steam Boiler Maximum Firing Rate H-2B, 14.7 MMBtu/hr**

These boilers and process heaters are subject to Permit Condition #21233, which is for equipment that does not have NOx CEMs to demonstrate compliance with the Regulation 9-10-301 refinery-wide requirement of 0.033 lb/MMBtu. Regulation 9-10 was amended and approved on December 15, 2010 to include a new definition of "Curtail Operation" under Regulation 9-10-222, which defines operations of a boiler, steam generator and process heater at no more than 30% of its rated heat input. Valero is requesting to change low fire rate from 20% to 30% to match the current Curtail Operation definition in Condition #21233, Parts 3B and Part 5B. This will allow Valero to use actual emissions, which are more representative of normal NOx emissions, instead of using the previous 30-day period emissions, when equipment operate at 30% of the rated capacities or lower. The increase in the NOx Box low firing rate from 20% to 30% eliminates a majority of the out-of-box issues that Valero and District Enforcement staff had expressed. It would reduce the need to retest the NOx Boxes to verify compliance at out of box conditions at low fire and reduce District administrative oversight. It would also eliminate the difficulty in reproducing the low fire (curtailed operation) conditions in a source test to verify that the source did not operate with emissions higher than the permit.

The District has observed that the condition limit can be more stringent than the District rule. The NOx Box requirement is a separate policy from Reg. 9-10's curtailed operation; however, in this case, the District will allow Valero to comply with the amended Regulation 9-10 using the actual flow rate (MMBtu/hr) at 30% Curtail Operation for consistency. On January 5, 2012, Valero submitted two years (2010 and 2011) of emissions comparison between the two methods of calculation, actual emissions versus previous 30-day average. The calculation results show negligible theoretical emissions differences of 27 lb/yr and zero lb/yr for 2010 and 2011, respectively. This difference between the two methods is negligible compared to the total annual NOx emissions for Regulation 9-10 sources (3.9 ton/yr). In reality, there is no actual emission increase as a result of the condition change as requested. Valero has always operated the above sources the same way for years with no physical change or change in method of operation.

The Title V Administrative Amendment application was submitted under Application #23452 for this condition change.

II. Emission Calculations

There will be no increase in emissions as a result of this application. This application is to modify permit conditions for existing or permitted sources for the purpose of bringing an existing facility into compliance with a newly-adopted regulatory requirement of the District Regulation 9-10.

III. Plant Cumulative Increase

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

IV. 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.

V. Statement of Compliance

All sources mentioned above are 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 categorically-exempt from CEQA, since this project is proposed for bringing an existing facility into compliance with newly adopted regulatory requirements of the District or of any other local, state or federal agency per Regulation 2-1-312.3.

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.

VI. Permit Conditions

Condition 21233

Valero Refining Company – California
3400 East 2nd 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)
Application 23451 (A0901)
Application 23454 (B2626)
Plant B2626 and A0901
Regulation 9-10 Refinery-Wide Compliance

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

Facility No. B2626, Valero Refining Company

| <u>S#</u> | <u>Description</u> | <u>NOx CEM</u> |
|-----------|--|----------------|
| 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

| <u>S#</u> | <u>Description</u> | <u>NOx CEM</u> |
|-----------|-----------------------------------|----------------|
| 20 | Steam Boiler, H-2A, 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:
 - a. Calculate NOx emissions from each furnace using measured fuel gas rates, and either:
 - 1. CEM data or
 - 2. NOx emission factor from Part 5A
 - b. 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. The Owner/Operator may choose to comply with either 3B or 3C. (Basis: Regulation 9-10-502)
 - A. The NO_x 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 NO_x 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. OR
 - C. The NO_x 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 30% 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 NO_x 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 NO_x box is
 - A. Conduct District approved source tests for NO_x 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 O₂ at low-fire may be different than the minimum O₂ at high-fire. The same is true for the maximum O₂). The Owner/Operator shall also verify the accuracy of the O₂ monitor on an annual basis.
 - C. Determine the highest NO_x 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 NO_x emission factor than tested.
 - D. Plot the points representing the desired operating ranges on a graph. The resulting polygon(s) are the NO_x Box, which represents the allowable operating range(s) for the furnace under which the NO_x emission factor from part 5a is deemed to be valid.
 - 1.) The NO_x Box can represent/utilize either one or two emission factors.
 - 2.) The NO_x Box for each emission factor can be represented either as a 4- or 5-sided polygon The NO_x 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 NO_x box are listed in Part 5.
 - E. Upon establishment of each NO_x 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 OR 5C AND 5D, the Owner/Operator shall operate each source within the NO_x Box ranges listed below at all times of operation. During periods of startup, shutdown or curtailed operation, and for sources temporarily out of service, the Owner/Operator may choose to comply with either 5B OR 5C, except for S-34 and S-35 for which the owner/operator shall comply with Condition 25158. This part shall not apply to any source that has a properly operated and properly installed NO_x 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 (O ₂ % , MMBtu/hr) | Max O ₂ at Low Firing (O ₂ % , MMBtu/hr) | Min O ₂ at High Firing (O ₂ % , MMBtu/hr) | Mid O ₂ at Mid/High Firing (polygon) (O ₂ % , MMBtu/hr) | Max O ₂ at High Firing (O ₂ % , 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 @ 20% or 6 @ 30% | (Note 1), 4 @ 20% or 6 @ 30% | (Note 1), 20 | N/A | (Note 1), 20 |
| Plant A0901 (13193) | | | | | | |
| S-20 | 0.055 | (Note 1), 2.9 @ 20% or 4.4 @ 30% | (Note 1), 2.9 @ 20% or 4.4 @ 30% | (Note 1), 14.7 | N/A | (Note 1), 14.7 |
| S-21 | 0.055 | (Note 1), 2.9 @ 20% or 4.4 @ 30% | (Note 1), 2.9 @ 20% or 4.4 @ 30% | (Note 1), 14.7 | N/A | (Note 1), 14.7 |

Note 1: Per Part 3B and Part 3C, Oxygen limits do not apply to sources with maximum firing rates less than 25 MMBtu/hr. High fire is defined as 100 % of rated heat input, and low fire is defined as 20% (Part 3B) or 30% (Part 3C) of rated heat input

- 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, except for S-35, for which the low-fire shall be 8% of the maximum 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 9-10-301.4.2 (previous 30-day average fire rate). OR
- C. Part 5A does not apply to units in Curtailed Operation (i.e. operation at 30% or less of rated heat input) or to units undergoing startup or shutdown or to units that are temporarily out of service. For units in curtailed operation or undergoing startup or shutdown, the means for determining compliance with the refinery wide limit shall be accomplished using only one method described in 9-10-301.4 consistently for all sources (previous 30-day average or actual firing rate). For units temporarily out of service, the means for determining compliance with the refinery wide limit shall be accomplished using the method described in 9-10-301.5

(previous 30-day average firing rate).

- D. 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. NO_x Box Deviations. (Basis: Regulation 9-10-502)

- A. The Owner/Operator may deviate from the NO_x 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 NO_x 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 NO_x 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 NO_x 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 NO_x 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 NO_x 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 NO_x 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 NO_x 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 NO_x, 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 \geq 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 > NO_x 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 NO_x 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 NO_x 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)

Recommendation

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

- S-20 Steam Boiler, Maximum Firing Rate 14.7 MMBtu/hr**
- S-21 Steam Boiler H-2B, Maximum Firing Rate 14.7 MMBtu/hr**

Thu H. Bui

*Senior Air Quality Engineer
Engineering Division
Date:*

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**EVALUATION REPORT
VALERO REFINING COMPANY
Application #27720 - Plants # 12626 and A0901**

**3400 East Second St.
Benicia, CA 94510**

I. BACKGROUND

Valero has applied for Administrative Change of Conditions for Cogen Condition 19177, Alternate Control Plan IERC 19329, NOx Box Condition 21233, Miscellaneous Condition 24198, Refinery Fuel Gas Condition 25342 and new Condition 26250 to add new NOx/CO CEMS and to utilize NOx emissions factors for sources without NOx CEMS for the various equipment including the following equipment:

Condition 19177

S-1030 Cogeneration Gas Turbine GT-4901
S-1031 Heat Recovery Steam Generator SG-4901

Conditions 19329, 21233, 24198, and 26250

For B2626:

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

For A0901:

S-20 Steam Boiler, H-2A, 14.7 MMBtu/hr
S-21 Steam Boiler, H-2B, 14.7 MMBtu/hr

Condition 25342

S-40 (SG2301), Utility Package Boiler
S-247 (F5401), Reactor Charge Heater
S-248 (F5402), Stripper Reboiler Heater

S-1059 (F-105), Crude Preheat CO Furnace
S-1060 (F-106), Crude Preheat CO Furnace

In preparation for Valero's next Title V renewal under Application 27184 for Facility #B2626 and Application 21785 for Facility #A0901 (for Conditions 19329, 21233, and 26250 only), Valero has applied for the following condition changes. The changes are for typographical errors, wrong references, removal of S-1061 Hydrogen Furnace that is not constructed, removal of H₂S requirements from S-247 and S-248 heaters that are firing natural gas only, NO_x box Condition 21233 removal per amended Regulation 9-10, new Condition 26250 was created to add new NO_x/CO CEMS and to utilize NO_x emissions factors for sources without NO_x CEMS, and miscellaneous administrative corrections; therefore; this application will be treated as an administrative amendment to the Title V Permits.

The proposed revisions to correct Condition 19177 include:

1. Part 2a – SO₂ Curtailment Group Emissions: Correct 34.75 tpy to 32.80 tpy of SO₂. The CEC condition is for total emission of 34.7 tpy would have applied if both Cogen Phase I and II are in place. However, Valero cancelled Phase II Cogeneration unit and S-41 was removed for the curtailment group, but the emissions were not reconciled to 32.8 tpy to reflect Phase I only.
2. Part 14 Combined Heat Input Rate: Remove "each" as it is shown to be applicable to the 810 MMBtu/hr combined heat input rate for the power train (Gas Turbine and Heat Recovery Steam Generator).
3. Part 18f Natural Gas Sulfur Content: Correct the reference Condition 25342, Part 3b rather than Condition 19177, Part 35, which was removed due to fuel gas system permit condition consolidation in Application 24656.
4. Part 46 Fugitive Emissions: Remove the fugitive component counts and retain the annual POC mass limit from Part 22a for fugitive components.

The proposed revisions to correct Condition 24198 include:

1. Parts 3,7 and 8 Regulation 6-1 instead of Regulation 6: Typographical corrections to clarify that the part references Regulation 6, Rule 1 which is the current version of the rule.
2. Part 10 CO Source Test and CEMS Requirement: Delete because the CO source test and CO CEMS requirements are redundant with the same requirement for 9-10-305 compliance demonstration in Condition 26250, Parts 1 and 6 (see below).
3. Part 14 NO_x CEMS Requirement: Delete because the NO_x CEMS requirements are redundant with furnaces listed in Condition 26250, Part 1 (see below) and the S-1059 and S-1060, CO furnaces are not subject to Regulation 9, Rule 10 which is referenced as the basis of the NO_x CEMS requirement.

The proposed revisions to correct Condition 25342 include:

1. Part 1a NSPS Subpart Ja H₂S Annual Limit: Delete S-1061 from the listed source since S-1061 (Hydrogen Reformer Furnace) will not be constructed. Add S-1059 and S-1060 (Pipestill Furnaces) which are subject to the NSPS Subpart Ja fuel gas

- combustion device requirements.
2. Part 1b NSPS J H₂S Annual Limit for Consent Decree: Correct Consent Decree permit condition number shown in the basis of the permit condition.
 3. Part 1c NSPS Subpart Ja H₂S 3-hour limit:
 - Delete S-1061 from the listed source since S-1061 (Hydrogen Reformer Furnace) will not be constructed;
 - Delete S-247 and S-248 per AN 27039 for DHU to Natural Gas Only; - Add S-1059 and S-1060 (Pipestill Furnaces) which are subject to the NSPS Subpart Ja fuel gas combustion device requirements;
 4. Part 2b BACT 365-day TRS Limit: Delete condition because S-1061 will not be constructed. Remove S-247 and S-248 per A/N 27039 for DHU to Natural Gas Only.
 5. Part 2c TRS limit for S-40: Remove “s” in sources.
 6. Part 2e for BACT daily TRS limit: Delete S-1061 because it will not be constructed.
 7. Part 2g for BACT daily TRS limit: Delete S-247 and S-248 per A/N 27039 for DHU to Natural Gas Only.
 8. Part 3a for H₂S CEMs: Remove condition because S-1061 will not be constructed. Delete S-247 and S-248 per A/N 27039 for DHU to Natural Gas Only.
 9. Part 4a 24-hour H₂S and TRS Recordkeeping: Move S-40 to new Part 4e because it is subject to a daily and not a 24-hour average TRS limit.
 10. Part 4c TRS Recordkeeping: Remove condition because S-1061 will not be constructed.
 11. Parts 5a and 5b: Edits for typographical corrections.
 12. Part 5c for Reporting: Delete condition because:
 - S-1061 will be removed because it will not be constructed; and
 - S-247 and S-248 will be removed per AN 27039 for DHU to Natural Gas Only.

Deletion of existing Condition 19239

Condition 19239 is deleted because source S-3 and S-4 that generated NO_x interchangeable Emission Reduction Credits (IERCs) for Regulation 9, Rule 10 compliance were retired at the end of 2010.

Deletion of existing Condition 21233 (NO_x Box)

Condition 21233 is deleted because Valero no longer uses NO_x Boxes for compliance with Regulation 9, Rule 10. This condition is replaced by new Condition 26250 to incorporate the use of NO_x emission factors in lieu of NO_x boxes with corresponding NO_x and CO source test requirements, and to include the new NO_x and CO CEMs installed on S-7, S-20, S-24 and S-25 pursuant to Regulation 9, Rule 10, Section 502.1.2.

Addition of new Condition 26250

1. Part 1 List of Sources: This part lists all sources at Facilities B2626 and A0901 which are subject to Regulation 9, Rule 10. The listing includes the source number, duty, status for NO_x and CO CEMS, and NO_x emission factor where applicable. The NO_x and CO status reflects the recent installation of the four new NO_x and CO CEMS on S-7, S-20, S-24, and S-26 pursuant to Regulation 9-10-502.1.1. The NO_x emission

factors are for the emission sources for which Regulation 9, Rule 10 compliance was previously demonstrated through the use of NOx Boxes as shown in Condition 21233 (see Section 1.2.2).

2. Part 2 NOx Source Test Requirement: The basis for this part is BAAQMD 9-10-502.1.2 which specifies NOx source test requirements for the sources that use Part 1 NOx emission factors for compliance demonstration. Source test frequency is based upon the fired duty as shown in Part 1. As specified by the rule, this part also specifies that the source frequency can exceed the allowed period between tests if the source has been out of service.
3. Part 3 Requirement for NOx Source Tests > NOx Emission Factor: The basis for this part is 9-10-502.1.2 which specifies the procedures to follow when the Part 2 source test results are higher than the Part 1 NOx emission factor.
4. Part 4 Procedure to Establish Lower Emission Factor: The basis for this part is 9-10-502.1.2 which specifies the procedures to follow if an Owner/Operator wishes to establish a lower emission factor for a device that has been altered in a way that reduces the emission rate.
5. Part 5 O2 Monitoring: The basis for this part is 9-10-502. This part replaces the previous Condition 21233, Part 2 for the same requirement.
6. Part 6 CO Source Test Requirement: The basis for this part is 9-10-502.1.2 which specifies CO source test requirements for the sources that do not have CO CEMS. Parts 6a and 6b specify the source test frequency based on the size of the affected unit in accordance with 9-10-502.1.2.1 and 1.2.2. Part 6c provides an allowance for an extended period between source tests for units that are temporarily out of service. The Part 6 CO source test requirements replace the previous Condition 21233, Parts 7 and 8 for the same requirement for CO.
7. Part 7 CO CEMS Requirement: The basis for this part is the previous Condition 21233 Part 9 for CO CEMS when the Part 6 CO source test results exceed the specified level for five consecutive years.
8. Part 8 Recordkeeping: The basis for the recordkeeping requirements is 9-10-504 and previous Condition 21233 Part 10.

II. EMISSION CALCULATIONS

There are no emission increases of any air pollutant for the administrative 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

All sources listed under Section I are expected to be in compliance with their corresponding regulatory requirements.

CEQA

The Air District's permit action is solely an administrative correction of permit conditions and not a "project" subject to CEQA review. Nevertheless, the Air District's action is exempt from CEQA, since the issuance, modification, amendment, or renewal of any permit pursuant to Title V of the federal Clean Air Act is exempt from CEQA unless the permit activity authorizes a physical or operational change (PRC Section 21080.24). Also, the Air District has determined that the action is exempt from CEQA because the permitting of the project involves no expansion of use beyond that existing at the time of the Air District's CEQA determination (CEQA § 21084; Guidelines § 15301).

Reasons for Exemption: The Air District must comply with CEQA when it permits an activity defined by CEQA as a "project". A project is an activity undertaken by a public agency or a private activity that requires some discretionary approval and may cause either a direct physical change in the environment or a reasonably foreseeable indirect change in the environment. Since this permit application is solely for administrative correction of permit conditions, this permit action is not a project subject to CEQA." Also, the permit action is exempt because it permits a minor alteration of an existing use and does not authorize any expansion of that existing use. It does not authorize any physical or operational change. In addition, Valero's requested administrative amendment to the Title V permit is expressly exempt from CEQA.

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.

V. CONDITIONS

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)

Application 27487 Add S-1066 Temporary Replacement Turbine used during maintenance service of S-1030 Primary Turbine (October 2015)

Application 27720 Correction to Parts 2a (SO₂ Curtailment Group Sources and Emissions), 14 (combined heat input rate), 18f (reference to Condition 25342) and 46 (fugitive component emissions) (Feb. 2016)

Definitions:

Year: Any consecutive twelve-month period of time

Heat Input: All heat inputs refer to the heat input at the higher heating value (HHV) of the fuel, in Btu/scf.

Rolling 3-hour period: Any three-hour period that begins on the hour and does not include start-up or shutdown periods.

Firing Hours: Period of time during which fuel, other than pilot gas, is flowing to a unit, measured in fifteen-minute increments.

Start-up Mode: The lesser of the first 256 minutes of continuous fuel flow to the Gas Turbine/HRSG after fuel flow is initiated or the period of time from db spGas Turbine/HRSG fuel flow initiation until the Gas Turbine/HRSG achieves 60 consecutive minutes of CEM data points in compliance with the emission concentration limits of Parts 18(a) and 18(b) or 19(b) and 19(d).

Shutdown Mode: The 30 minute period of time from non-compliance with any requirement listed in Parts 18(a) and 18(b) or 19(b) and 19(d) involving termination of fuel flow to the Gas Turbine/HRSG.

Corrected Concentration: The concentration of any pollutant (generally NO_x, CO, or NH₃) corrected to a standard stack gas oxygen concentration. For emission point P-60 (combined exhaust of S-1030 GasTurbine and S-1031 HRSG duct burners) the standard stack gas oxygen concentration is 15% O₂ by volume on a dry basis.

Conditions for the Approval of the Authority to Construct and Permit to Operate

1. Completed. (Basis: Banking Certificates have been provided)
Prior to the issuance of the Authorities to Construct for this Cogeneration project consisting of Phase I, the Owner/Operator shall provide the following offsets: (Basis: NO_x and POC)
Phase I (S-1030 and S-1031)
NO_x: 13.162TPY from Certificate # 703
2. For SO₂ emissions offsets, a curtailment group is established as follows: (Basis: SO₂ offsets)
Curtailment Group:
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)
 - a. The Owner/Operator shall limit the SO₂ emissions from the Curtailment Group to no more than 32.80 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.
3. Deleted. Commissioning period completed.
4. Deleted. Commissioning period completed.
5. Deleted. Commissioning period completed.
6. Coincident with the as-designed operation of A-60 SCR System, the Owner/Operator of the Gas Turbine (S-1030) and the HRSG (S-1031) shall comply with the NO_x and CO emission limitations specified in parts 18(a), 18(b), 19(b) and 19(d).
7. Deleted. Commissioning period completed.
8. Deleted. Commissioning period completed.
9. Deleted. Commissioning period completed.
10. Deleted. Commissioning period completed.
11. Deleted. Commissioning period completed.

12. Deleted. Commissioning period completed.
13. The Owner/Operator shall only fire the Gas Turbine (S-1030) and HRSG Duct Burner (S-1031) on refinery fuel and/or natural gas. (Basis: BACT for SO₂ and PM₁₀)
14. The Owner/Operator shall limit the combined heat input rate to the power train consisting of a Gas Turbine and its associated HRSG (S-1030 and S-1031) to no more than 810 MM Btu per hour, averaged over any rolling 3-hour period. The gas turbine in the power train (S-1030) shall not exceed 500 MM Btu/hr, maximum firing rate. (Basis: Cumulative Increase, Permit Fees, Modification, Offsets)
15. The Owner/Operator shall limit the combined heat input rate to the power train consisting of a Gas Turbine and its associated HRSG (S-1030 and S-1031) to no more than 19,440 MM Btu per calendar day. (Basis: Cumulative Increase, Permit Fees, Modification, Offsets)
16. The Owner/Operator shall limit the combined cumulative heat input rate for the power train consisting of Phase I (S-1030 and S-1031) to no more than 6,351,000 MM Btu per year. (Basis: Offsets, Cumulative Increase, Modification)
17. The Owner/Operator shall abate the S-1030 Gas Turbine and S-1031 HRSG by the properly operated and properly maintained A-60 Selective Catalytic Reduction (SCR) System and A-61 CO Oxidation Catalyst System whenever fuel is combusted at those sources and the catalyst bed has reached minimum operating temperature as designated by the manufacturer. (Basis: BACT for NO_x)
- 18. *The Owner/Operator of the Gas Turbine (S-1030) and HRSG (S-1031) when firing natural gas exclusively shall comply with requirements (a) through (f) under all operating scenarios, including duct burner firing mode. Requirements (a) through (f) do not apply during a start-up or shutdown mode. (Basis: BACT, PSD, and Toxic Risk Management Policy)***
- 18a(1). The Owner/Operator shall limit the emissions of nitrogen oxides (NO_x) at emission points P-60 to no more than 2.5 ppmv, on a dry basis, corrected to 15% O₂, averaged over one hour period. (Basis: BACT for NO_x when firing natural gas)
- 18a(2) Deleted. Phase II not constructed.
- 18b. Owner/Operator shall limit the carbon monoxide emissions concentration at P-60 to no more than 6 ppmv, on a dry basis, corrected to 15% O₂, averaged over any rolling 3-clock hour period. (Basis: BACT for CO when firing natural gas)
- 18c. The Owner/Operator shall limit the Ammonia (NH₃) emission concentrations at P-60 to no more than 10 ppmv, on a dry basis, corrected to 15% O₂, averaged over any rolling 3-hour period. (Basis: Toxics)
- 18d. The Owner/Operator shall limit the precursor organic compound (POC) mass emissions (as CH₄) from P-60 to no more than 2.0372 pounds per hour or 0.002515 Lb/MM Btu when firing natural gas throughout the gas turbine/HRSG train. (Basis: BACT for POC when firing natural gas)
- 18e. For sulfur dioxide (SO₂) emissions, the Owner/Operator shall limit the sulfur content in the natural gas to no more than 1.0 grain per 100 scf of natural gas. The Owner/Operator shall use standard pipeline quality natural gas as supplied by PG&E.

- The Owner/Operator shall demonstrate compliance in accordance with part # 35.
(Basis: BACT for SO₂ when firing natural gas)
- 18f. For particulate (PM₁₀) emissions, Owner/Operator shall limit the sulfur content in the natural gas to no more than 1.0 grain per 100 scf of natural gas. The Owner/Operator shall use standard pipeline quality natural gas as supplied by PG&E. The Owner/Operator shall demonstrate compliance in accordance with Condition 25342, Part 3b. (Basis: BACT for PM₁₀ when firing natural gas)
19. The Owner/Operator of the Gas Turbine (S-1030) and HRSG (S-1031) shall comply with requirements (a) through (h) under all operating scenarios, including duct burner firing mode. Requirements (a) through (h) do not apply during a start-up or shutdown mode. (Basis: BACT, PSD, and Toxic Risk Management Policy)
- 19a. The Owner/Operator shall limit the emissions of nitrogen oxides (NO_x), calculated in accordance with District approved methods as NO₂, at P-60 (the combined exhaust point for the S-1030 Gas Turbine and the S-1031 HRSG after abatement by A-60 SCR System) to no more than 7.29 pounds per clock hour. (Basis: BACT for NO_x, Offsets)**
- 19b. The Owner/Operator shall limit the emissions of nitrogen oxides (NO_x) at emission points P-60 to no more than 2.5 ppmv, on a dry basis, corrected to 15% O₂, averaged over any 3-clock hour period (Basis: BACT for NO_x)
- 19c. The Owner/Operator shall limit the carbon monoxide mass emissions at P-60 to no more than 10.692 pounds per clock hour, averaged over any rolling 3-hour period (Basis: PSD for CO)
- 19d. The Owner/Operator shall limit the carbon monoxide emission concentration at P-60 to no more than 6 ppmv, on a dry basis, corrected to 15% O₂, averaged over any rolling 3-clock hour period. (Basis: BACT for CO)
- 19e. The Owner/Operator shall limit the Ammonia (NH₃) emission concentrations at P-60 to no more than 10 ppmv, on a dry basis, corrected to 15% O₂, averaged over any rolling 3-hour period. (Basis: Toxics)
- 19f. The Owner/Operator shall limit the precursor organic compound (POC) mass emissions (as CH₄) at P-60 to no more than 2.037 pounds per hour. The Owner/Operator shall demonstrate compliance on source test results. (Basis: BACT)
- 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).
- 19h. The Owner/Operator shall limit the particulate matter (PM₁₀) mass emissions from P-60 to no more than 4.65 pounds per hour averaged over any consecutive 24-hours nor 1.55 pounds per hour averaged over a calendar year. This limit is subject to adjustment based on the results of source tests, in no case, however, may the adjusted limit exceed 4.65 lb/hr averaged over any consecutive 24-hours. Demonstration of compliance will be based on source test results. (Basis: BACT for PM₁₀)
20. The Owner/Operator shall limit the sulfuric acid emissions (SAM) from P-60 combined to no more than 7 tons in any consecutive four quarters. (Basis: PSD)
21. Deleted. Initial source test completed.

22. The Owner/Operator shall limit the total emissions from the power train consisting of Phase I (S-1030 and, S-1031) to no more than the following annual limits (365 day rolling average): (Basis: Cumulative Increase, Offsets, PSD)
- 22a. Phase I (S-1030 and S-1031)
- NOx - 28.603 TPY (based on CEM data)
 - POC – 8.579 TPY (based on Gas Turbine/HRSG POC emissions of 7.983 TPY plus fugitive emissions of 0.596 TPY)
 - SOx – 15.0 (based on TRS measurement)
 - CO - 41.9285 TPY (based on CEM data)
 - PM10 – 6.803 TPY (based on source test results)
- 22b. The PM10 emissions may be adjusted based on source test results for S-1030 and, S-1031) if the particulate emission rate exceeds the assumed level. In no case shall the adjustment when added to the assumed level for Phase I exceed a total of 10.919 tons per year of PM10 emissions. This allowance is based only on the construction of Phase I. The Cogeneration project increase in PM10 is limited to the available offsets for the proposed project, i.e. the contemporaneous emission reductions from the shutting down of two boilers (S-38 and, S-39). The owner shall submit a new application for any increase in PM10 beyond the allowable level. (Basis: Cumulative Increase, Offsets)
- 22c. The PM10 emissions may be adjusted based on the use of recycled water in the exempt wet cooling tower instead of fresh water. In no case shall the adjustment when added to the assumed PM10 level on fresh water exceed the total of 3.8 tons per year for the wet cooling tower (restricted to toxic risk values). This adjustment along with the allowable adjustment in Part 22(b) shall not exceed a combined total of 10.919 tons/year in Phase I. The Cogeneration project increase in PM10 is limited to the available offsets for the proposed project, i.e. the contemporaneous emission reductions from the shutting down of two boilers (S-38 and, S-39). The owner shall submit a new application for any increase in PM10 beyond the allowable level. (Basis: Cumulative Increase, Offsets)
- 22d. The Owner/Operator shall prepare an annual calendar-year report and submit it to the District documenting compliance with these annual limitations on mass emissions. The Owner/Operator shall submit the report to the District no later than 60 days after the close of the calendar year. (Basis: Compliance Monitoring)
23. To demonstrate compliance with parts 19(f), 19(g),19(h), 20 and parts of 22, the Owner/Operator shall calculate and record on a daily basis, the Precursor Organic Compound (POC) mass emissions, Fine Particulate Matter (PM10) mass emissions (including condensable particulate matter), Sulfuric Acid Mist (SAM) and Sulfur Dioxide (SO2) mass emissions from each power train. The Owner/Operator shall use the actual Heat Input Rates and District-approved emission factors to calculate these emissions. The calculated emissions shall be presented as follows:
- (a) For each calendar day, the Owner/Operator shall summarize the POC, PM10, SAM and SO2 emissions for the combined power train: [Gas Turbine (S-1030)/HRSG (S-1031)]

- (b) On a daily basis, the 365 day rolling average cumulative total POC, PM₁₀, SAM and SO₂ mass emissions, for the power train: Gas Turbine (S-1030)/HRSG (S-1031).
(Basis: Offsets, PSD, Cumulative Increase)
24. 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 emission monitors as specified in Volume V of the District's Manual of Procedures. 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 the testing date(s). As indicated above, the Owner/Operator shall measure the contribution of condensable PM (back half) to the total PM₁₀ emissions. However, the Owner/Operator may propose alternative measuring techniques to measure condensable PM such as the use of a dilution tunnel or other appropriate method used to capture semi-volatile organic compounds. Source test results shall be submitted to the District within 60 days of conducting the tests.
(Basis: Offsets, PSD, Cumulative Increase)
25. The Owner/Operator shall submit all reports (including, but not limited to monthly CEM reports, monitor breakdown reports, emission excess reports, equipment breakdown reports, calculated compliance records, etc.) as required by District Rules or Regulations or through permit conditions, and in accordance with all procedures and time limits specified in the Rule, Regulation, Manual of Procedures, or Enforcement Division Policies & Procedures Manual. (Basis: Regulation 2-6-502)
26. The Owner/Operator shall maintain all records and reports on site for a minimum of 5years. These records shall include but are not limited to: continuous monitoring records (firing hours, fuel flows, emission rates, monitor excesses, breakdowns, etc.), source test and analytical records, natural gas sulfur content analysis results, emission calculation records, records of plant upsets and related incidents. The length of time, description and quantity of excess emissions associated with breakdowns shall be included in the recordkeeping requirements. The Owner/operator shall make all records and reports available to District and the CEC CPM staff upon request. (Basis: Regulation 2-6-501)
27. The Owner/Operator shall notify the District of any violations of these permit conditions consistent with the requirements of the Title V permit (Basis: Regulation 2-1-403)
28. The Owner/Operator shall have a stack height for emission points P-60 each at least 80 feet above grade level at the stack base. (Basis: PSD, TRMP)
29. The Owner/Operator shall provide adequate stack sampling ports and platforms to enable the performance of source testing. The location and configuration of the stack sampling ports shall be subject to BAAQMD review and approval. (Basis: Regulation 1-501)
30. Deleted. Required notifications completed.
31. For the startup period for the Gas Turbine/HRSG, the Owner/Operator shall limit the startup period to no more than the period defined in the Startup Mode. [Basis: Cumulative Increase, Toxics]

32. Unwarranted. (Basis: Cogeneration plant has been incorporated into the Title V permit. The condition to submit an application for a significant revision of the Title V permit to include the Cogeneration facility is no longer needed.)
33. Deleted. Phase II not constructed.
34. The Owner/Operator of the Cogeneration project shall comply with the continuous emission monitoring requirements of 40 CFR Part 75. (Basis: Regulation 2, Rule 7)
35. Deleted. (Replaced by LPFG Condition 25342, Parts 3b and 4b).
36. Deleted. (Replaced by LPFG Condition 25342, Part 5b).
37. The Owner/Operator shall equip the two sources (S-1030 and, S-1031) with a District approved continuous fuel flow monitor and recorder in order to determine the fuel consumption. (Basis: BACT, Offsets, Cumulative Increase, Monitoring)
38. The Owner/Operator shall install, calibrate, maintain and operate a District-approved continuous emission monitor and recorder for NO_x, CO and O₂. (Basis: BACT, Offsets, Cumulative Increase, Monitoring)
39. ***The Owner/Operator shall conduct annual source test 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. (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. (Basis: Cumulative Increase)
41. The Owner/Operator shall equip all hydrocarbon control valves installed as part of the Cogeneration Project in Phase I and Phase II with live loaded packing systems and polished stems, or equivalent. (Basis: Cumulative Increase Offsets)
42. Deleted. [Basis: Inspection of hydrocarbon valves covered by Regulation 8, Rule 18.]
43. The Owner/Operator shall equip all connectors installed in the piping systems as a result of Phase I of the Cogeneration project with graphitic-based gaskets unless the service requirements prevent this material. Any connector found to be leaking in excess of 100 ppm shall be subject to the leak repair provisions of Regulation 8, Rule 18. (Basis: RACT, offsets, Cumulative Increase)
44. The Owner/Operator shall equip all new hydrocarbon centrifugal compressors installed as part of Phase I of the Cogeneration project with "wet" dual mechanical seals with a heavy liquid barrier fluid, or dual dry gas mechanical seals buffered with inert gas. All compressors shall be inspected and repaired in accordance with District Regulation 8, Rule 18. All compressors found to leaking in excess of 500 ppm shall be subject to the leak repair provisions of Regulation 8, Rule 18. (Basis: RACT, Offsets, Cumulative Increase)

45. Deleted. (Basis: New fugitive equipment in organic service has been integrated into the owner's fugitive equipment monitoring and repair program and meets the requirements of District Regulation 8-18.)
46. ***The Owner/Operator of the Cogeneration project consisting of S-1030 and S-1031 has been permitted to install fugitive components with an annual mass limit for POC (Part number 22a). (Basis: Cumulative Increase, Offsets)***
47. Deleted. (Basis: The S-38 and S-39 steam boilers have been completely shutdown.)
48. Deleted. Phase II not constructed.

Temporary Condition for Phase I: Expires after the first 36 hours of Commissioning

49. Deleted. (Basis: Phase I commissioning period has ended.)

Condition for S-1066 or equivalent turbine, temporary operates during the GE maintenance service of S-1030, primary turbine

50. The owner/operator shall ensure that S-1066 or equivalent turbine can only be temporary operated during the GE maintenance service of S-1030 as agreed by Valero and GE contract. Both S-1030 and S-1066 or equivalent turbines cannot be operated at the same time. (Basis: Cumulative Increase, Offsets)
51. The owner/operator shall operate S-1066 or equivalent turbine in compliance with all regulatory requirements and Permit Conditions that apply to S-1030 at all times when S-1066 or equivalent turbine is in operation. (Basis: Cumulative Increase, Offsets)
52. The owner/operator shall not perform commissioning nor combustor tuning on S-1066 or equivalent turbine during the period of temporary operation in Part 50. (Basis: Offsets)
53. The owner/operator shall include all emissions from S-1006 or equivalent turbine as part of S-1030 total emissions. (Basis: Cumulative Increase)

Condition 24198

APPLICATION 16937 (Jan 2009), VIP Amendments

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

APPLICATION 27720 (April 2016), Change of Conditions revisions to add new NOx/CO CEMS for S7, S20, S24, and S26 into new Condition 26250

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 6-1-301 (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 6-1-301)

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 (Basis: Redundant with 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 6-1-310 (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 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 6-1-301 shall be demonstrated at the outlet of A-8/A-10 baghouses. (Basis: Regulation 6-1-310)
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 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 6-1-330)
9. Deleted (Basis: Redundant with annual PM10 source test requirement in Condition 20820, Part 72)
10. Deleted. (Basis: CO source test and CEMS requirements removed because they are redundant with the same requirement for 9-10-305 compliance demonstration in Condition 26250, Parts 1 and 6).
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 (NO_x 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 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. Deleted (Basis: Redundant for sources with NO_x CEMS listed in Condition 26250, Part 1, and not applicable to S-1059 and S-1060 which are not subject to BAAQMD Regulation 9, Rule 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)

Condition # 25342

Refinery Low Pressure Fuel Gas System

A/N 24656 Consolidation of all fuel gas system requirements (September 2012)

A/N 27039 DHU furnaces firing switched to natural gas only

A/N 27720 Correction to Parts 1a, 1c: Add S-1059, S-1060 and remove S-1061 (Hydrogen Reformer Furnace will not be constructed); Parts 2b, 2e, 3a, 4c and 5c: Remove S-1061; Part 4a: Move S-40 to Part 4e because it is subject to a daily, not a 24-hour average TRS limit. (April 2016)

1. The Owner/Operator shall limit the hydrogen sulfide (H₂S) 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].
 - S-1059 (F-105), Crude Preheat CO Furnace
 - S-1060 (F-106), Crude Preheat CO 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 # 24245]
 - 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 S1030, and S1031, NSPS Ja for S1059 and S1060].

S1030 (GT4901), Turbine
S1031 (SG4901), Steam Generator
S1059 (F-105), Crude Preheat CO Furnace
S1060 (F-106), Crude Preheat CO 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. Deleted. [Basis: S-1061 Hydrogen Furnace not constructed and S-247/S-248 removed per NSR A/N 27039 for natural gas only firing]

- c. For the listed source, 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. Deleted. S-1061 Hydrogen Furnace not constructed.

- 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. Deleted. S-247/S-248 removed per NSR A/N 27039 for firing natural gas only.

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 (H₂S) 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

- b. For the listed sources, a District approved continuous gaseous fuel monitor/recorder to determine the hydrogen sulfide (H₂S) 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].

S21 (F301), Hydrogen Reformer Furnace
S22 (F351), Hydrogen Reformer Furnace
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. Deleted. (S-1061 will not be constructed)
- d. Deleted. S-247/S-247 removed per NSR A/N 27039 for firing natural gas only.
- e. For the listed source, daily average TRS content of the refinery fuel gas [Basis: Banked POC Credits]

S40 (SG2301), Utility Package Boiler

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
- vi. Annual averaged TRS content, previous four quarters.

c. Deleted. S-1060 Hydrogen Furnace not constructed and S-247/248 removed per NSR A/A 27039 for firing natural gas only.

Condition 26250

Application No. 27720, Change of Conditions – New Condition to replace Condition 21233 to add new NOx/CO CEMs for S7, S20, S24, and S26 per 9-10-502.1.1 and to utilize NOx emissions factors for sources without NOx CEMS for Reg. 9, Rule 10 compliance per alternate compliance option provided in 9-10-308.

Plant B2626 and A0901
Regulation 9-10 Compliance

1. The owner/operator of the following sources are subject to the refinery-wide NOx emission rate and the CO concentration limits in Regulation 9-10: (Basis: Regulation 9-10-301, 303, 305 & 308)

Facility No. B2626, Valero Refining Company

| <u>S#</u> | <u>Description</u> | <u>NOx CEM</u> | <u>CO CEM</u> | <u>NOx Emission Factor Lb/MMBtu</u> |
|-----------|--|----------------|---------------|---|
| 7 | F-103 Jet Fuel HF, 53 MMBtu/hr | Yes | Yes | |
| 20 | F-104 Naphtha HF, 62 MMBtu/hr | Yes | Yes | |
| 21 | F-301 Hydrogen, 614 MMBtu/hr | Yes | No | |
| 22 | F-351 Hydrogen, 614 MMBtu/hr | Yes | No | |
| 23 | F-401 Gas Oil HC, 200 MMBtu/hr | Yes | No | |
| 24 | F-601 Cat Feed HF, 33 MMBtu/hr | Yes | Yes | |
| 25 | F-701 Cat Feed, 230 MMBtu/hr | Yes | No | |
| 26 | F-801 HCN HF, 33 MMBtu/hr | Yes | Yes | |
| 30 | F-2901 PFR Preheat, 463 MMBtu/hr total | Yes | No | |
| 31 | F-2902 PFR Preheat, 463 MMBtu/hr total | Yes | No | |
| 32 | F-2903 PFR Preheat, 463 MMBtu/hr total | Yes | No | |
| 33 | F-2904 PFR Preheat, 463 MMBtu/hr total | Yes | No | |
| 34 | F-2905 PFR Regen Gas, 74 MMBtu/hr | No | No | 0.250 |
| 35 | F-2906 PFR React Gas, 14 MMBtu/hr | No | No | 0.200 |
| 40 | SG-2301 Steam Gen, 218 MMBtu/hr | Yes | No | |
| 41 | SG-2302 Steam Gen, 218 MMBtu/hr | Yes | No | |
| 173 | F-902 Coker Steam Superheat, 20 MMBtu/hr | No | No | 0.050 |
| 220 | F-4460 MRU Hot Oil, 351 MMBtu/hr | Yes | Yes | |

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

| <u>S#</u> | <u>Description</u> | <u>NOx CEM</u> | <u>CO CEM</u> | <u>NOx Emission Factor Lb/MMBtu</u> |
|-----------|-----------------------------------|----------------|---------------|---|
| 20 | Steam Boiler, H-2A, 14.7 MMBtu/hr | No | No | 0.055 |
| 21 | Steam Boiler, H-2B, 14.7 MMBtu/hr | No | No | 0.055 |

2. For sources listed in Part 1 without a NOx CEMS, the owner/operator shall conduct source tests on the schedule listed below to demonstrate compliance with the Part 1 NOx emission factor. The source tests are performed in order to measure NOx 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 9-10-502.1.2)

- a. Annual source test for sources rated less than 25 MM Btu/hr. The time interval between source tests shall not exceed 16 months.
 - b. Semi-annual source test for sources rated 25 MM Btu or more. The time interval between source tests shall be no less than 5 months and no more than 8 months.
 - c. For sources that have been shut down longer than the period allowed between source testing periods, the required source tests may be delayed until the source returns to service.
3. For sources listed in Part 1 without a NO_x CEMS, the owner/operator shall use the new higher emission factor for determining compliance with the Part 1 NO_x emission factor if a source test conducted for Part 2 measures an emission factor higher than the emission factor listed in Part 1. The owner/operator may re-test at operating conditions substantially similar to those during the original test and appeal the change in emission factor to the APCO within 60 days. (Basis: Regulation 9-10-502.1.2)
4. For sources listed in Part 1 without a NO_x CEMS, the owner/operator may submit source test data with a permit application to establish a lower emission factor for Part 1 for a device that has been altered in a way that reduces the emission rate. The APCO may require that a source test be performed at a specific operating condition if the APCO determines that such a condition is a representative operating condition that has not been previously tested. Source test results shall be submitted to the APCO within 60 days of any test. (Basis: Regulation 9-10-502.1.2)
5. 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)
6. For sources listed in Part 1 without a CO CEM, the Owner/Operator shall conduct a District-approved source test on the schedule listed below to demonstrate compliance with Regulation 9-10-305 (CO not to exceed 400 ppmv, dry, at 3% O₂, operating day average). The source tests are performed in order to measure 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 9-10-305).
 - a. Annual source test for sources rated less than 25 MM Btu/hr. The time interval between source tests shall not exceed 16 months.
 - b. Semi-annual source test for sources rated 25 MM Btu or more. The time interval between source tests shall be no less than 5 months and no more than 8 months.
 - c. For sources that have been shut down longer than the period allowed between source testing periods, the required sources tests may be delayed until the source returns to service.
7. For any source listed in Part 1 without a CO CEM and 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)
8. The owner/operator must maintain records of CEM and parametric monitoring system measurements, hourly and daily NO_x emissions, and source tests conducted to demonstrate

compliance with Part 1. 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)

VI. RECOMMENDATION

It is recommended that an administrative change of conditions be issued to Valero for the following equipment:

For B2626:

- 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 E
- 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
- S-247 (F5401), Reactor Charge Heater
- S-248 (F5402), Stripper Reboiler Heater
- S-1030 Cogeneration Gas Turbine GT-4901, 500 MMBtu/hr
- S-1031 Heat Recovery Steam Generator SG-4901
- S-1059 (F-105), Crude Preheat CO Furnace
- S-1060 (F-106), Crude Preheat CO Furnace

For A0901:

- S-20 Steam Boiler, H-2A, 14.7 MMBtu/hr
- S-21 Steam Boiler, H-2B, 14.7 MMBtu/hr

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

PUBLIC COPY
EVALUATION REPORT
VALERO REFINING COMPANY
Application #27600- Plant # 13193

3400 East Second St.
Benicia, CA 94510

I. BACKGROUND

Valero has applied for a change of condition to the Permit to Operate for the following equipment to comply with Regulation 9, Rule 10, Section 308:

Valero Refinery Plant # 12626

| | |
|--------------|---|
| S-7 | F-103 Jet Fuel HF, 53 MMBtu/hr |
| S-20 | F-104 Naphtha HF, 62 MMBtu/hr |
| S-21 | <i>F-301 Hydrogen, 614 MMBtu/hr</i> |
| 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 |

Asphalt Plant # 13193 (# A901)

| | |
|-------------|--|
| S-20 | Steam Boiler, H4602A, 14.7 MMBtu/hr |
| S-21 | Steam Boiler, H4602B, 14.7 MMBtu/hr |

The Valero refinery (P/N 12626) and asphalt plant (P/N 13193) operate 20 combustion devices constructed before 1994 that are subject to BAAQMD Regulation 9-10-301, which limits the refinery-wide average NOx concentration of 0.033 pounds NOx per million BTU (0.033 lb/MMBtu). In the past, Valero complied with Regulation 9, Rule 10, Section 301 by using NOx interchangeable emissions reduction credits (IERCs) in accordance with an approved Regulation 2, Rule 9 Alternative Compliance Plan as allowed by Permit Conditions # 19329, # 21233 and # 25158. The IERCs Valero has used for compliance with Section 9-10-301 were generated annually by emissions reductions in excess of those required by Section 9-10-304 achieved through NOx emissions controls on refinery CO Furnaces S-3 (F-103) and S-4 (F-104). Under Regulation 2, Rule 9, IERCs were surrendered at the end of each compliance period in an amount sufficient to offset any emissions in excess of the standard in Regulation 9-10-301. The use of IERCs imposed no limit on mass emissions.

Sources S-3 and S-4 CO Boilers were permanently shut down on December 31, 2010 and replaced by new CO boilers S-1059 and S-1060 and associated SCRs plus a flue gas scrubber as part of the Valero Improvement Project (VIP) Amendment. As a result, IERCs generated by S-3 and S-4 are no longer available. The remaining IERCs generated from S-3 and S-4 in 2010 expired on December 31, 2015, since IERCs are only valid for 5 years under Regulation 2-9-601.5. The new CO boilers S-1059 and S-1060 are subject to BACT with more stringent NOx control than the 0.033 lb/MMBtu limit and, as a result, are no longer subject to NOx Regulation 9-10-301 and cannot generate NOx IERCs.

In 2013, the District recognized that the Regulation 9-10-301 standard acted in some cases as a disincentive to achieving the NOx benefits and greenhouse gas benefits that would come from replacing older combustion units with cleaner and more efficient new units. This is because the standard is rate-based, limiting NOx emissions per unit of total heat input to all the devices, but imposing no limit on the total amount of NOx emitted. If a refinery seeks to replace any device within the group that alone emits at a rate below the standard (but above the rate of a new device that would replace it), and thereby confers benefits toward meeting the rate-based standard on the entire group, the remaining group of devices could fail to meet the Regulation 9-10-301 standard. This would act as a disincentive to replacement despite the fact that total mass emissions would be reduced by replacement of the old device with a new device. Because of this disincentive, it was the District's view that refineries might be delaying replacement of older devices.

In October 2013, the District amended Regulation 9-10, Nitrogen Oxides and Carbon Monoxide from Boilers, Steam Generators and Process Heaters in Petroleum Refineries, to include an Alternate NOx Compliance Plan (ANCP) option that provides for an alternative standard for older units based on mass emissions while limiting the heaters to their historic NOx mass emission levels. A refinery wishing to meet a mass-based NOx standard for its older units submits continuous emission monitoring system (CEMS) data or, in the absence of CEMS data, source test data showing daily mass emissions for 10 days of operation of the units during the prior three years, with the same 10 days used for all of the units. The District reviews the data to verify that the data meets rule requirements. If the data is adequate, the rule establishes a daily mass emission standard for each unit that is the average of the 10 daily mass emission measurements.

The refinery may use IERCs pursuant to Regulation 2, Rule 9 or ERCs pursuant to Section 9-10-308. If it is using credits, the refinery also submits documentation for any credits to be used for compliance. If ERCs are used, the amount of credits required to make up the difference between the standard and actual emissions is established before operation of the units under the plan, and unit emissions combined with credits may not exceed the mass emission limit. As a result, the standard with ERCs is prospective, with emissions from each unit limited to historic average mass emissions, in contrast to the IERC compliance option, which imposes no limit on mass emissions.

With this application, Valero has proposed to use NOx ERCs to comply with an ANCP pursuant to Section 9-10-308, effective on January 1, 2016. The District will impose the alternate refinery-wide daily NOx mass emissions limit, in pounds NOx/day, in lieu of the concentration emissions limit of 0.033 lb/MMBtu in Regulation 9-10-301. To establish the alternate refinery-wide daily NOx mass emissions, Valero has calculated the average of actual daily emissions on 10 different

days during the 3-year period immediately preceding the date of this ANCP application, and the District has verified this calculation. Valero may surrender the NOx ERC on a one-time basis at a 1.15 to 1 ratio to make up for the average difference between actual operating emissions (lb NOx/day) and the emissions that would meet the 0.033 lb NOx/MMBtu. Valero's calculation shows that it must provide 560.1 tons of NOx Emission Reduction Credits (ERCs) for the ANCP for this application. Detailed calculation of the NOx refinery-wide daily emissions limit is explained in Section II, Emission Calculations.

The District will also impose additional requirements for compliance monitoring for the mass emission standard. The 2013 amendments to Regulation 9-10 made two changes to NOx monitoring requirements in Regulation 9-10. First, the regulation required each refinery to monitor at least 95% of the NOx emissions from pre-1994 heaters, on a weight basis, with a continuous emission monitoring system (CEMS). On October 10, 2014, the District approved installation of NOx CEMS on four pre-1994 combustion sources so that no less than 95% of the NOx emissions, by weight, subject to either 9-10-301 or 308 are monitored with a NOx CEMS as required by Regulation 9-10-502. These sources are S-7, S-20, S-24 and S-26. The CEMS on each of the four sources will be installed according to the approved monitoring plan and the District's Manual of Procedures, Volume V. In addition, Valero has voluntarily installed and operated carbon monoxide (CO) CEMS on the same four sources to demonstrate compliance with the CO emissions limit of 400 ppmv, dry at 3% oxygen, based on an operating day average, as required by Regulation 9-10-305.

Under the second change to the monitoring requirements in Regulation 9, Rule 10, periodic source tests for heaters without CEMS will continue to be required at the same frequency, but testing will not be limited to the particular combinations of firing rates and exhaust oxygen levels of the NOx Box in Condition # 21233. Instead, each non-CEMS heater will be assigned an emission factor, based on one or more past source tests that will apply to all operating conditions and will be incorporated into a permit condition. Periodic source tests will be used to verify a NOx emission rate no higher than the emission factor for each heater. If a periodic source test shows a NOx emission rate that exceeds the emission factor assigned to the heater, the higher measured emission rate would then be the basis for a new emission factor at that heater. Based on these monitoring requirements, the current Condition # 19329 (Alternate Compliance Plan using IERCs) is being deleted. Condition # 25158 is being deleted because the NOx emissions rate is no longer required for temporary shutdown sources. They are now subject to the annual mass emissions. In addition, Condition # 21233 (NOx Box) is being deleted and replaced by the new Condition #26250 (ANCP).

II. EMISSION CALCULATIONS

The devices listed below in Table 1 are currently subject to the Rule 9-10-301 concentration-based emissions limit. With approval of this application, these sources will be subject to the alternate daily NOx mass emissions limit in accordance with Rule 9-10-308. All the sources listed in Table 1 are included in the emissions analysis performed for this application and presented in Appendix B.

Table 1 Devices Subject to the ANCP, Proposed Daily Mass Limit, Required ERCs

| Source# | Description | Baseline Emissions Data Source | Emission Factor (lb/MMBtu) | Average Baseline NOx Emissions (lb/day) ¹ |
|--|-------------------------------|--|----------------------------|--|
| Sources at Refinery B2626 | | | | |
| 7 ² | F-103 Jet Fuel HF | Source test (11/2004) | █ | 106.8 |
| 20 ² | F-104 Naphtha HF | Source test (5/2014) | █ | 122.0 |
| 21 | F-301 Hydrogen | CEMS | ---- | 463.7 |
| 22 | F-351 Hydrogen | CEMS | ---- | 564.7 |
| 23 | F-401 Gas Oil HC | CEMS | ---- | 157.3 |
| 24 ² | F-601 Cat Feed HF | Source test (11/2012) | █ | 219.9 |
| 25 | F-701 Cat Feed | CEMS | ---- | 723.7 |
| 26 ² | F-801 HCN HF | Source test (10/2002) | █ | 62.6 |
| 30 | F-2901 PFR Preheat | CEMS | ---- | 1288.7 |
| 31 | F-2902 PFR Preheat | | | |
| 32 | F-2903 PFR Preheat | | | |
| 33 | F-2904 PFR Preheat | | | |
| 34 | F-2905 PFR Regen Gas | NOx Box factor from source testing (Cond. 21233) | █ | 129.6 |
| 35 | F-2906 PFR React Gas | NOx Box factor from source testing (Cond. 21233) | █ | 31.9 |
| 40 | SG-2301 Steam Gen | CEMS | ---- | 80.2 |
| 41 | SG-2302 Steam Gen | CEMS | ---- | 452.3 |
| 173 | F-902 Coker Steam Superheater | NOx Box factor from source testing (Cond. 21233) | █ | 14.2 |
| 220 | F-4460 MRU Hot Oil | CEMS | ---- | 50.2 |
| Sources at Asphalt Plant A0901 | | | | |
| 20 | Steam Boiler, H-4602A | NOx Box factor from source testing (Cond. 21233) | █ | 8.9 |
| 21 | Steam Boiler, H-4602B | NOx Box factor from source testing (Cond. 21233) | █ | 7.8 |
| Total Average Baseline NOx Emissions (lb/day) | | | | 4,484.3 |
| Total Allowed NOx Emissions (lb/day) | | | | 1,815.5 |
| ERCs Required [(Total Average Baseline – Total Allowed x 1.15) x 365 / 2,000] (tons/yr) | | | | 560.1 |

Note 1: Based on the average of the daily emissions on 10 different days during the 3-year period immediately preceding the date of the application for this ACP (9-10-308) (see Appendix B)
 Note 2: Sources with NOx and CO CEMs installed by 1/1/2016

As set forth in Table 1, Valero submitted a combination of CEMS data, source test data (for four sources – S-7, S-20, S-24 and S-26 – that will be equipped with a NOx CEMS), and emission factors from Condition 21233 (NOx Box Condition) that have been enforced by regular source tests.

As required by Regulation 9-10-308.1.1, Valero submitted data for 10 different days during the 3-year period immediately preceding the date of this application. The following Table 2 shows the dates that were used in the baseline calculation.

Table 2: 10 Baseline Dates

| Day | Date |
|-----|------------|
| 1 | 11/12/2013 |
| 2 | 11/13/2013 |
| 3 | 11/14/2013 |
| 4 | 4/8/2014 |
| 5 | 9/30/2014 |
| 6 | 10/2/2014 |
| 7 | 10/3/2014 |
| 8 | 10/4/2014 |
| 9 | 10/5/2014 |
| 10 | 10/6/2014 |

The District has verified all data submitted.

III. PLANT CUMULATIVE INCREASE SINCE 4/5/1991

The cumulative increase for this application is zero for all pollutants. This application does not involve any physical change, change in method of operation, or increase in throughput or production that will result in an increase in either the daily or annual emission of any regulated air pollutant. This application is an alteration to the way Valero demonstrates overall emissions compliance with Regulation 9-10 through mass emissions (lb/day) instead of emission factor (lb/MMBtu).

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, and BACT does not apply to the sources mentioned above.

VI. OFFSETS

As required by Regulation 9-10-308.1.2, Valero will surrender NOx Emission Reduction Credits (ERCs) on a one-time basis at a 1.15:1 ratio to make up the difference between the actual operating emissions in pounds NOx/day, which are unchanged by this application, and the emissions that would meet the 0.033 pounds NOx/million BTU NOx limit in 9-10-301.

| | |
|--|---------|
| Total Average Baseline NOx Emissions per 9-10-308 (lb/day) | 4,484.3 |
| Total Allowed NOx Emissions per 9-10-301 (lb/day) | 1,815.5 |
| ERCs Required [(4,484.3 – 1,815.5 x 1.15) x 365 / 2,000] (tons/yr) | 560.1 |

Valero will provide 560.1 ton/yr of NOx using the following ERCs certificates in Table 3.

Table 3: Amount of ERCs and Certificate Number

| Certificate Number | Type of ERCs | Ton |
|-----------------------|--------------|----------------|
| 1481 | NOx | 3.571 |
| 1483 | NOx | 32.9 |
| 1485 | NOx | 80 |
| 1486 | NOx | 60 |
| 1487 | NOx | 17.77 |
| 1315 | NOx | 43.843 |
| 1317 | NOx | 46.991 |
| 1319 | NOx | 46.482 |
| 1321 | NOx | 46.018 |
| 1323 | NOx | 42.309 |
| 1183 | NOx | 140.52 |
| Total | | 560.404 |
| | | |
| ERCs for ANCP | | 560.1 |
| ERCs Remaining | | 0.304 |

The remaining extra ERCs will be returned to Valero when this application is issued.

VII. STATEMENT OF COMPLIANCE

All sources listed in this application are subject to the mass emission limit established through this application pursuant to Regulation 9-10-308 - Alternate NOx Compliance Plan in lieu of Regulation 9-10-301, which limits the refinery-wide average NOx concentration of 0.033 pounds NOx per million BTU (0.033 lb/MMBtu).

This project is ministerial under CEQA because the District’s review of the project is limited to determining whether all sources currently subject to Section 9-10-301 are to be subject to the alternative mass-based standard; whether submitted CEM and source test data complies with objective District Manual of Procedures requirements; whether baseline calculations were performed correctly and in accordance with the fixed procedures established by Regulation 9, Rule 10; and whether the amount of ERC required for compliance has been calculated correctly in accordance with the methodology in the rule.

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 requirements. Valero is responsible to submit a PSD permit application to EPA if PSD is triggered. 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.

VIII. CONDITIONS

Condition # 10574, Part 20 is changed to specify that the Alternate Compliance Plan is now the Alternate NOx Compliance Plan per Regulation 9-10-308.

The current Condition # 19329 (Alternate Compliance Plan using IERCs) has been deleted as part of the ANCP approval. This change was approved as part of AN 27720 for Change of Conditions.

Condition #21233 (NOx Box) has been deleted and was replaced with the new Condition #26250 (ANCP). This change was approved as part of AN 27720 for Change of Conditions.

Condition # 24198, part 10 (CO source tests) was deleted and replaced with Condition 26250, Parts 1 and 6. Part 14 (NOx CEMS) was deleted and replaced with Condition 26250, Part 1. These changes were approved as part of AN 27720 for Change of Conditions.

Condition # 25158, deleted (replaced by Condition # 26250).

**Condition 10574
Valero Refining Company
3400 East Second Street
Benicia, CA 94510**

**CLEAN FUELS PROJECT
APPLICATION 10392
APPLICATION 3782 Alkylation Production Project
APPLICATION 13201, Correct NSPS J H2S Concentration (Oct 2005)
APPLICATION 16937 (Jan 2009), VIP Amendments. Condition superseded by Condition 24197 upon startup of S-1061, Hydrogen Reformer Furnace
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)
APPLICATION 27570 Revision for Regulation 9-10-308 ANCP (Jan. 2016)**

PERMIT CONDITIONS

S-220 Hot Oil System
S-21 Hydrogen Reformer Furnace, F-301
S-22 Hydrogen Reformer Furnace, F-351
Refinery Fuel Gas System

Source Test/Continuous Emission Monitors

For any source test or continuous emission monitor/recorder (CEM) required by any permit condition associated with the Clean Fuels Project (CFP), the following shall apply:

- A. Completed
- B. Completed
- C. Completed
- D. Completed
- E. Completed
- F. The Owner/Operator shall install, maintain, calibrate and operate each CEM in accordance with all applicable District regulations. For Part number 15, the Owner/Operator shall include a data logging device that averages the CEM concentration readings for the Refinery fuel gas over the 24-hour time period (calendar day). [Basis: BACT]

Recordkeeping and Monthly Reporting

- G. The Owner/Operator shall keep records of all necessary information to demonstrate compliance with all permit conditions associated with the Clean Fuels Project. The Owner/Operator shall retain all records for at least five years from the date of entry, and shall be made available to the District upon request. This includes, but is not limited to, records of the following: [Basis: BACT]

Fuel usage type and amount for:

S-220 Hot Oil System

S-21 Hydrogen Reformer Furnace

S-22 Hydrogen Reformer Furnace

CEM data and CEM indicated excesses;

Fuel gas H₂S concentration (24-hour Average);

Fuel gas total reduced sulfur Concentration (24-hour Average)

Fuel gas usage rates (cubic feet/day)

Fuel heat content, HHV [24-hour average]

Actual Firing Rate (Btu/month)

Miscellaneous

- H. The Owner/Operator shall vent any process vessel depressurization gas to a control device with an overall capture and destruction efficiency of 95%, on a mass basis. [Basis: Cumulative Increase]
- I. Deleted. [Basis: Recordkeeping is covered by BAAQMD Regulation 9-10-504.]

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]

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).

COMBUSTION SOURCES

General Combustion

The following are general requirements for all new or modified combustion sources associated with the Clean Fuels Project:

- 17. The Owner/Operator shall only fire in all new and modified combustion sources (S-21, S-22 and S-220), as part of the CFP, natural gas, LPG/pentane gases or refinery fuel gas. In no case shall any combustion source burn a fuel with a H2S concentration exceeding 100 ppmv, averaged over 24 hours (calendar day). [Basis: BACT, Cumulative Increase]
- 18. The Owner/Operator shall limit the total combined emissions from these new and modified combustion sources (S-21, S-22 and S-220), installed as a part of the CFP to no more than the following annual limits: [Basis: BACT, Cumulative Increase, Offsets] [Basis: SO2 Contemporaneous offset credits for SO2 and PM10 in Application #18888]

| | S-21, S-22 and S-220 |
|-----------|----------------------|
| Pollutant | Annual (tons) |
| NOx(1) | 17.11 (S-220 only) |
| CO | 134.904 |
| SO2 | 59.358 |
| PM10 | 26.981 |
| POC | 15.514 |

Note 1. Deleted. [Basis: There is no NOx increase in emissions from the S-21 and S-22 Hydrogen Heaters.]

- 19. The Owner/Operator shall equip the three furnaces (S-21, S-22 and S-220) with a District approved continuous fuel flow monitor and recorder in order to determine fuel consumption. [Basis: Regulation 9-10-502.2]
- 20. The Owner/Operator shall calculate and totalize NOx, CO, POC, SO2 and PM10 emissions from all new and modified combustion sources (S-21, S-22 and S-220) in the Clean Fuels Project on a calendar year basis to demonstrate compliance with Condition number 18. The emission factors or procedure to be used for this purpose shall be:

NOx: Summation of daily emissions in Alternative NOx Compliance Plan for Regulation 9-10-308 compliance

CO: 0.0200 lb/MMBtu

POC: 0.0023 lb/MMBtu

SO2: 0.0069 lb/MMBtu

PM10: 0.0040 lb/MMBtu

The Owner/Operator shall retain the results on site for a period of at least five years and make them available to District staff upon request.

[Basis: BACT, Cumulative Increase]

- 21. Except for no more than 3 minutes in any hour, the Owner/Operator shall limit the visible emissions from the three combustion sources (S-21, S-22 and S-220) or the three abatement devices (A-43, A-44 and A-45) installed as part of the CFP to no more than Ringelmann No. 1.0 or 20% opacity. [Basis: BAAQMD 6-301]

22. For purposes of permitting S-220, S-21 and S-22, a maximum limit of 24 consecutive hours has been set for startup and shutdown. The 24-consecutive-hour startup period may be extended to include furnace dryout/warmup periods (mechanical and process) that are limited to not exceed an additional 72 consecutive hours. The 24 hour period does not apply during the initial startup of the Units. [Basis: Cumulative Increase]

S-220 Hot Oil System

23. Except during startup and shutdown, the Owner/Operator shall limit emissions of nitrogen oxides from the S-220 Hot Oil System to no more than 10 ppmv, dry, corrected to 3% oxygen, (0.0118 lb/MMBtu) averaged over any 3 consecutive hours. [Basis: BACT, Offsets, Cumulative Increase]
24. For the S-220 Hot Oil System, the Owner/Operator shall limit the CO emissions to no more than 28 ppmv, dry, corrected to 3% oxygen, (0.02 lb/MM Btu) averaged over 8 hours, except during periods of startup and shutdown. [Basis: BACT, Offsets, Cumulative Increase]
25. The Owner/Operator shall abate S-220 at all times by A-45 Selective Catalytic Reduction System when it is in operation. Operation of the A-45 Selective Catalytic System shall be in accordance with manufacturer's recommended procedures during periods of operation. [Basis: BACT, Offsets, Cumulative Increase]
26. Except during periods of startup and shutdown, the Owner/Operator shall limit ammonia emissions (ammonia slip) from the SCR unit (A-45) to no more than 10 ppmv of ammonia, dry, corrected to 3% oxygen, averaged over any consecutive 3 hour period. [Basis: BACT, Offsets, Cumulative Increase]
27. For source S-220, the Owner/Operator shall install, calibrate, maintain, and operate a District-approved continuous emission monitor and recorder for NOx and O2. [Basis: Monitoring]
28. Completed.
29. The Owner/Operator shall limit the total combined heat input for S-220 to no more than 28.908 million therms (2.89 trillion Btus) in any 365 consecutive day period. [Basis: BACT, Offsets, Cumulative Increase]
30. The Owner/Operator shall limit the firing rate of the S-220 MRU Hot Oil Furnace to no more than 351 million Btu per hour (Maximum firing rate). (Basis: Cumulative Increase, Toxics)
S-21 Hydrogen Reformer Furnace, F-301
S-22 Hydrogen Reformer Furnace, F-351
31. For the S-21 and S-22 furnaces, the Owner/Operator shall limit the emissions of nitrogen oxides based on CEM data to no more than 60 ppmv, dry, corrected to 3% oxygen, (0.0708 lb/MMBtu) averaged over any consecutive 24 hour period, except during periods of startup and shutdown. For the S-21 and S-22 furnaces when monitored without a CEM, the Owner/Operator shall limit the emissions of nitrogen oxides to no more than 60 ppmv, dry, corrected to 3% oxygen determined in accordance with the test method outlined in the District Source Test Method 13A or 13B. [Basis: Cumulative Increase, Offsets]
32. For the S-21 and S-22 furnaces, the Owner/Operator shall limit emissions of CO to no more than 28 ppmv, dry, corrected to 3% oxygen (0.02 lb/MM Btu) averaged over any consecutive 8 hour period, except for periods during periods of startup and shutdown. [Basis: Cumulative Increase]
33. The Owner/Operator shall equip Sources S-21 and S-22 with low NOx burners. The Owner/Operator shall operate the low NOx burners systems in accordance with the manufacturer's recommended procedures during periods of operation. [Basis: BAAQMD 9-10]
34. Not Implemented
35. Not Implemented

36. Completed
37. The Owner/Operator shall limit the total combined heat input for S-21 and S-22 to no more than 106 million therms (10.6 trillion Btus) in any 365 consecutive day period. [Basis: Cumulative Increase, Offsets]
38. The Owner/Operator shall limit the firing rate of the S-21 Hydrogen Reforming Furnace to no more than 614 million Btu per hour (maximum firing rate) for all fuels combusted at the source. (Basis: Cumulative Increase, Toxics)
39. The Owner/Operator shall limit the firing rate of the S-22 Hydrogen Reforming Furnace to no more than 614 million Btu per hour (maximum firing rate) for all fuels combusted at the source. (Basis: Cumulative Increase, Toxics)
40. Deleted. [Basis: The Owner/Operator has installed the continuous emission monitor for S-21 for NOx and O2.]
41. Deleted. [The Owner/Operator has installed the continuous emission monitor for S-22 for NOx and O2.]

TANKAGE

S-227 175,000 Barrel Fixed Roof Tank

42. The S-227 Pentane Storage Tank installed by the Owner/Operator shall be a fixed roof tank connected to the A-46/A-47 vapor recovery system. NSPS requirements of 40 CFR 60, Subpart Kb will be applied to this tank. [Basis: Cumulative Increase, Offsets, Toxics]
43. The Owner/Operator shall operate Tank S-227 with a minimum pressure relief valve (PRV) set pressure of 1 psig. [Basis: BAAQMD 8-5]
44. The Owner/Operator shall not store any material in S-227 storage tank, other than the materials specified in this application for the tank, if the new material will result in an emission increase of POC or an increase in toxicity. This prohibition includes (but is not limited to) the storage of a new material with a) higher vapor pressure at actual storage temperature; b) lower initial boiling point; c) larger percentage of a toxic component; and d) new toxic compounds. The 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, Offsets, BACT, Toxics]
45. The Owner/Operator shall vent all POC emissions from tank cleaning, degassing, or product changeout to a control device with an overall capture and destruction efficiency of at least 90%, on a mass basis. [Basis: RACT]

TOXICS

46. Completed. [Basis: The Owner/Operator has performed the necessary source tests for toxics.]

OFFSETS (DISTRICT EMISSIONS BANK)

47. Completed. [Basis: The Owner/Operator has met their offset obligation for NOx, POC, SO2 and PM10.]

48. Completed. [Basis: The Owner/Operator has paved two heavily traveled roads in the Refinery to provide contemporaneous emissions reduction for PM10.]

49. Completed. [Basis: The Owner/Operator has made the paved road wide enough to for vehicles to pass without excursion onto the unpaved shoulders.]

50. Deleted. [Basis: No longer required to monitor mass emissions from the S-21 and S-22 Hydrogen Furnaces through a condition due to required monitoring of furnaces under Regulation 9, Rule 10.]

51. The total daily throughput of alkylate from the Alkylation Unit (S-1007) shall not exceed 22,800 barrels. (Basis: BACT, Cumulative Increase)

52. *Owner/Operator has been permitted to install fugitive components for the Alkylation Production Project (AN 3782). The POC emission 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 26250

Application No. 27570, Alternate NOx Compliance Plan for utilization of alternate compliance option provided in 9-10-308.

Application No. 27720, Change of Conditions – New Condition to replace Condition 21233 to add new NOx/CO CEMs for S7, S20, S24, and S26 per 9-10-502.1.1 and to utilize NOx emissions factors for sources without NOx CEMS for Reg. 9, Rule 10 compliance per alternate compliance option provided in 9-10-308.

Plant B2626 and A0901
Regulation 9-10 Compliance

2. The owner/operator of the following sources are subject to the refinery-wide daily mass NOx emission limit in Part 9 and the CO concentration limits in Regulation 9-10: (Basis: Regulation 9-10-303, 305 & 308)

Facility No. B2626, Valero Refining Company

| S# | Description | NOx CEM | CO CEM | NOx Emission Factor Lb/MMBtu |
|-----------|--------------------------------|----------------|---------------|---|
| 7 | F-103 Jet Fuel HF, 53 MMBtu/hr | Yes | Yes | |
| 20 | F-104 Naphtha HF, 62 MMBtu/hr | Yes | Yes | |
| 21 | F-301 Hydrogen, 614 MMBtu/hr | Yes | No | |
| 22 | F-351 Hydrogen, 614 MMBtu/hr | Yes | No | |

| | | | | |
|-----|--|-----|-----|-------|
| 23 | F-401 Gas Oil HC, 200 MMBtu/hr | Yes | No | |
| 24 | F-601 Cat Feed HF, 33 MMBtu/hr | Yes | Yes | |
| 25 | F-701 Cat Feed, 230 MMBtu/hr | Yes | No | |
| 26 | F-801 HCN HF, 33 MMBtu/hr | Yes | Yes | |
| 30 | F-2901 PFR Preheat, 463 MMBtu/hr total | Yes | No | |
| 31 | F-2902 PFR Preheat, 463 MMBtu/hr total | Yes | No | |
| 32 | F-2903 PFR Preheat, 463 MMBtu/hr total | Yes | No | |
| 33 | F-2904 PFR Preheat, 463 MMBtu/hr total | Yes | No | |
| 34 | F-2905 PFR Regen Gas, 74 MMBtu/hr | No | No | 0.250 |
| 35 | F-2906 PFR React Gas, 14 MMBtu/hr | No | No | 0.200 |
| 40 | SG-2301 Steam Gen, 218 MMBtu/hr | Yes | No | |
| 41 | SG-2302 Steam Gen, 218 MMBtu/hr | Yes | No | |
| 173 | F-902 Coker Steam Superheat, 20 MMBtu/hr | No | No | 0.050 |
| 220 | F-4460 MRU Hot Oil, 351 MMBtu/hr | Yes | Yes | |

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

| S# | Description | NOx CEM | CO CEM | NOx Emission Factor Lb/MMBtu |
|-----------|-----------------------------------|----------------|---------------|---|
| 20 | Steam Boiler, H-2A, 14.7 MMBtu/hr | No | No | 0.055 |
| 21 | Steam Boiler, H-2B, 14.7 MMBtu/hr | No | No | 0.055 |

2. For sources listed in Part 1 without a NOx CEMS, the owner/operator shall conduct source tests on the schedule listed below to demonstrate compliance with the Part 1 NOx emission factor. The source tests are performed in order to measure NOx 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 9-10-502.1.2)
 - d. Annual source test for sources rated less than 25 MM Btu/hr. The time interval between source tests shall not exceed 16 months.
 - e. Semi-annual source test for sources rated 25 MM Btu or more. The time interval between source tests shall be no less than 5 months and no more than 8 months.
 - f. For sources that have been shut down longer than the period allowed between source testing periods, the required source tests may be delayed until the source returns to service.

3. For sources listed in Part 1 without a NOx CEMS, the owner/operator shall use the new higher emission factor for determining compliance with the Part 1 NOx emission factor if a source test conducted for Part 2 measures an emission factor higher than the emission factor listed in Part 1. The owner/operator may re-test at operating conditions substantially similar to those during the original test and appeal the change in emission factor to the APCO within 60 days. (Basis: Regulation 9-10-502.1.2)

4. For sources listed in Part 1 without a NOx CEMS, the owner/operator may submit source test data with a permit application to establish a lower emission factor for Part 1 for a device that has been altered in a way that reduces the emission rate. The APCO may require that a source test be performed at a specific operating condition if the APCO determines that such a condition is a representative operating condition that has not been previously tested. Source test results shall be submitted to the APCO within 60 days of any test. (Basis: Regulation 9-10-502.1.2)

5. 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)
6. For sources listed in Part 1 without a CO CEM, the Owner/Operator shall conduct a District-approved source test on the schedule listed below to demonstrate compliance with Regulation 9-10-305 (CO not to exceed 400 ppmv, dry, at 3% O₂, operating day average). The source tests are performed in order to measure 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 9-10-305).
 - d. Annual source test for sources rated less than 25 MM Btu/hr. The time interval between source tests shall not exceed 16 months.
 - e. Semi-annual source test for sources rated 25 MM Btu or more. The time interval between source tests shall be no less than 5 months and no more than 8 months.
 - f. For sources that have been shut down longer than the period allowed between source testing periods, the required sources tests may be delayed until the source returns to service.
7. For any source listed in Part 1 without a CO CEM and 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)
8. The owner/operator must maintain records of CEM and parametric monitoring system measurements, hourly and daily NO_x emissions and source tests conducted to demonstrate compliance with Parts 1 and 9. 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)
9. The owner/operator of all sources listed in Part 1 shall comply with the daily mass NO_x emission limit of 4,484.3 lb/day through the use of an approved Alternate NO_x Compliance Plan (ANCP). (Basis: Regulation 9-10-308)
10. The owner/operator of each source listed in Part 1 shall determine compliance with Part 9 as follows: (Basis: Regulation 9-10-308)
 - c. Calculate NO_x emissions from each furnace using measured fuel gas rates, and either:
 - i. NO_x CEM data, or
 - ii. NO_x emission factor from Part 1 for sources S-34, S-35, S-173 at Valero Refinery, and sources S-20 and S-21 at Valero Asphalt Plant
 - d. The daily mass NO_x emission rate shall be determined by summing total emissions from sources listed in Part 1 above.
11. The owner/operator of each source listed in Part 1 that is temporarily out of service or in start-up, shutdown or in curtailed operation shall determine compliance with Part 9 by calculating NO_x

emissions from each furnace using measured NOx CEM data or the emission factor listed in Part 1 and operating day heat input. (Basis: Regulation 9-10-406)

12. The applicant shall submit quarterly reports of their ANCP activity no later than 30 days after the close of each calendar quarter. (Basis: Regulation 9-10-505.2)

1. 2.

IX. RECOMMENDATION

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

Valero Refinery 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

Asphalt Plant # 13193 (# A901)

- S-20 Steam Boiler, H4602A, 14.7 MMBtu/hr
- S-21 Steam Boiler, H4602B, 14.7 MMBtu/hr

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

THB:E:\Valero Asphalt\27600\27600e_Public_THB

**EVALUATION REPORT
VALERO REFINING COMPANY
Application #27939- Plant # 12626**

**3400 East Second St.
Benicia, CA 94510**

I. BACKGROUND

Valero has applied for Administrative Change of Conditions for Condition 20820 for the following equipment:

S-5 FCCU

S-6 Fluid Coker

In preparation for termination of the Consolidated Consent Decree, referenced in this application as: 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, Valero proposes changes to the following permit conditions, which implemented various consent Decree requirements. These changes were requests from EPA during Consent Decree discussions about what conditions should remain as permanent conditions and what condition should be revised and/or added.

1. Condition 20820 was issued under NSR Application 16937 for VIP Amendments. The revised Condition 20820, Parts 63, 67a and 67b will clarify that S-5 FCCU and S-6 Fluid Coker are subject to the short-term and long-term BACT SO₂ emission limits.
2. The revised Condition 20820, Parts 63, 67a and 67b will clarify that the startup, shutdown, emergency bypass and bypass exemption does not apply to the long-term SO₂ limits.
3. New Condition 26298, Part 1 was created to ensure that burning of fuel oil in Valero refinery heaters and boilers is prohibited as requested by EPA during the review of CD termination.
4. Foot note 4 was added to Condition 20820, Part 63 to indicate that S-5 and S-6 are subject to the 365-day and 7-day SO₂ limits with the following text "SO₂ emissions from S-5 (FCCU) and S-6 (Coker) shall not exceed the limits identified in the table."

Although proposed changes to Consent Decree Permit Conditions 24245 were considered during the Consent Decree discussions between Valero and E PA, no changes to Consent Decree Permit Condition 24245 were included at this time.

Valero submitted the Administrative Revision to the Title V permit under Application 27940. Modifications to Valero Title V permit are shown in Appendix A.

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

Sources S-5 FCCU and S-6 Coker

- Sources S-5 and S-6 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-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 PM₁₀ emissions to be less than 40 lb/hr.
- Sources S-5 and S-6 (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.

- Sources S-5 and S-6 (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 SO₂ 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).
- Source 5 (FCCU) is subject to and expected to comply with the following Section 112 of the Clean Air Act, New Source Performance Standards and National Emission Standards for Hazardous Air Pollutants (NESHAP).
 - 40 CFR Part 60, Subpart A – General Provisions
 - 40 CFR Part 60, Subpart J – 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
- Source 6 (Fluid Coker) is 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 63, Subpart CC – Petroleum Refineries
 - 40 CFR Part 63, Subpart A – General Provisions
- Sources S-5 (FCCU) and S-6 (Fluid Coker) are subject to and expected to comply with the 40 CFR 64, Compliance Assurance Monitoring, since the sources have potential to emit above the major source threshold, are abated by a control device and are subject to federal emission limits with abatement by a control device. Sources S-5 and S-6 are exempt from the CAM Plan requirements because they are equipped with CEMs or CPMS for NO_x, SO₂, opacity, and O₂.

CEQA

The Air District's permit action is solely an administrative correction of permit conditions to address changes in federal requirements and does not authorize any physical or operational changes. This action is undertaken as part of the process for incorporating changes into the Title V permit. The Air District's action is exempt from CEQA, since the issuance, modification, amendment, or renewal of any permit pursuant to Title V of the federal Clean Air Act is exempt from CEQA unless the permit activity authorizes a physical or operational change (Public Resources Code Section 21080.24; CEQA Guidelines § 15281). It is also exempt pursuant to CEQA's "common sense exception" in Guidelines § 15061(b)(3), since it can be seen with certainty that there is no possibility that reflecting changes in federal requirements that are independent of this action may have a significant effect on the environment.

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.

VII. 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 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 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 UNIT (S-1036, S-1051, and S-1052), and ALKY GUARD BED (S-1063)

APPLICATION 27939 (May 2016): Consolidated Consent Decree Termination to revise

Condition 20820 to clarify that the short-term and long-term BACT-based SO2 emission limits in Parts 63, 67a, and 67b apply to the S-5, Fluid Catalytic Cracking Unit and S-6, Fluid Coker and to clarify that the startup, shutdown, emergency bypass and bypass exemption does not apply to the long-term SO2 limits, and Condition 26298, Part 1 was added to ensure that burning of fuel oil in Valero refinery heaters and boilers is prohibited.

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.)
 - 1.2. Deleted (Completed. All new light hydrocarbon centrifugal compressors installed as part of these VIP projects will be installed with “wet” dual mechanical seals with a heavy liquid barrier-fluid, or dual dry gas mechanical seals buffered with inert gas).
 - 1.3. 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).
 - 1.4. 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, 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 NO_x, 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 NO_x 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 NO_x, CO, and O₂. Partially*

Deleted (Fuel gas TRS and H2S CEMS replaced by Condition 25342, Part 3a.). [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 NO_x, 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 AND 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/CKR 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 NO_x, 1.8 SO_x, 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 NO_x, 0.16 SO_x, 0.56 PM₁₀, 0.29 NMOC, 1.27 CO.

Coke Exports via Ship at Valero Coke Dock in lb/1000 tons:

44.2 NO_x, 33.1 SO_x, 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 and volume (bbl) of crude oil by ship and barge, (2) the total number of deliveries and volume (bbl) of PGO by ship and barge, and (3) the total number of shipments and amount (tons) of coke by ship. 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. Deleted. [Completed. Offsets for VIP fugitives and crude tankage have been provided.]

STORAGE TANKS

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 kbbbl/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]

MISCELLANEOUS UNITS, VESSELS AND 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 kbbbl/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 kbbbl/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 kbbbl/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 kbbbl/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 kbbbl per day, daily maximum
77 kbbbl 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 AND 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 |
|-------------------------|---|-----------------------------------|
| NO_x | 42.8 ppmvd @ 3% O₂ 365-day avg. | 610.6 tpy² |
| NO_x | 85.6 ppmvd @ 3% O₂ 7-day avg. | 6,194 lbs/day, 7-day avg. |
| NO_x | 150 ppmvd¹ @ 3% O₂ 1-calendar day avg. | 10,344 lbs/day¹ |
| SO₂ | 21.4 ppmvd @ 3% O₂ 365-day avg. (equivalent to 25 ppmvd @ 0% O₂ 365-day avg.)⁴ | 393.2 tpy |
| SO₂ | 42.8 ppmvd @ 3% O₂ 7-day avg. (equivalent to 50 ppmvd @ 0% O₂ 7-day avg.)⁴ | 4,309 lbs/day, 7-day avg. |
| SO₂ | 440 ppmvd¹ @ 3% O₂ 1-calendar day avg. | 22.1 ton/day¹ |
| CO | 35.2 ppmvd @ 3% O₂ 365-day avg. | 209.5 tpy |
| CO | 100 ppmvd¹ @ 3% O₂ 1-calendar day avg. | 4,402 lbs/day¹ |
| PM₁₀ | 40 lbs/hr¹ as determined by BAAQMD ST-15 or EPA Method 17 in conjunction with EPA Methods 1, 2, 3 and 4 | 114.8 tpy |
| NMOC³ | 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 purposes of this condition, NMOC is equivalent to precursor organic compounds (POC).

⁴ SO₂ emissions from S-5 (FCCU) and S-6 (Coker) shall not exceed the limits identified in the table.

- a. **The Owner/Operator shall monitor compliance with emissions limits above by using District approved continuous emission monitor (CEM) data for NO_x, 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 NO_x, 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 factor (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 start up period of A-1059 and A-1060 SCRs may last up to 12 hours per startup event. NO_x 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. NO_x 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. NO_x 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 CKR 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. NO_x 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 (equivalent to 25 ppmvd, dry, corrected to 0% oxygen, any 365 consecutive days average), and (b) SO₂ emissions – 42.8 ppmv dry, corrected at 3% oxygen, any 7–calendar days average (equivalent to 50 ppmvd dry, corrected at 0% oxygen, any 7-calendar days average), and (c) except during periods of startup and shutdown, bypass and emergency bypass as defined in Part 65, 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 NO_x, 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]

70. Deleted. [Basis: Initial source test for NO_x, 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 compliance with the NMOC and PM10 mass rates 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 # 26298

APPLICATION 27939 (May 2016): Consolidated Consent Decree Termination to revise Condition 20820 to clarify that the short-term and long-term BACT-based SO2 emission limits in Parts 63, 67a, and 67b apply to the S-5, Fluid Catalytic Cracking Unit and S-6, Fluid Coker and to clarify that the startup, shutdown, emergency bypass and bypass exemption does not apply to the long-term SO2 limits, and Condition 26298, Part 1 was added to ensure that burning of fuel oil in Valero refinery heaters and boilers is prohibited.

1. The owner/operator of Valero Refinery shall not burn fuel oil in its heaters and boilers.
(Basis: Regulation 2-1-403)

VIII. RECOMMENDATION

It is recommended that a conditional change to the Permit to Operate be issued to Valero for the following equipment:

S-5 FCCU

S-6 Fluid Coker

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

E:\Valero\27939\27939e

APPENDIX A

Revision to Section II-PERMIT CONDITIONS

II. PERMIT CONDITIONS

| | |
|-------|---|
| 26298 | Fuel oil usage prohibition for refinery heaters and boilers |
|-------|---|

Condition # 26298

APPLICATION 27939 (May 2016): Consolidated Consent Decree Termination to revise Condition 20820 to clarify that the short-term and long-term BACT-based SO2 emission limits in Parts 63, 67a, and 67b apply to the S-6, Fluid Coker and the S-5, Fluid Catalytic Cracking Unit, and to clarify that the startup, shutdown, emergency bypass and bypass exemption does not apply to the long-term SO2 limits, and Condition 26298, Part 1 was added to ensure that burning of fuel oil in Valero refinery heaters and boilers is prohibited.

1. The owner/operator of Valero Refinery shall not burn fuel oil in its heaters and boilers. (Basis: Regulation 2-1-403)

Revisions to Tables IV-A5 and VII-A5 in Title V Permit under Application 27940

**Table IV – Refinery
Generally Applicable Requirements
which Require Routine Monitoring**

| Applicable Requirement | Regulation Title or Description of Requirements | Federally Enforceable (Y/N) | Future Effective Date |
|------------------------|---|-----------------------------|-----------------------|
| BAAQMD Condition 26298 | | | |
| Part 1 | Fuel oil usage prohibition for refinery heaters and boilers (Regulation 2-1-403) | Y | |

Table IV - A4
Source-Specific Applicable Requirements
Fluid Catalytic Cracking Unit, Catalyst Regenerator
S-5 (R-702)

| Applicable Requirement | Regulation Title or Description of Requirement | Federally Enforceable (Y/N) | Future Effective Date |
|-------------------------------|--|-----------------------------|-----------------------|
| Part 47 | Throughput recordkeeping requirements for FCCU, S-5 (Recordkeeping) | Y | |
| Part 61 | Abatement requirements and vapor flow limit for S-5, S-6, S-1059, and S-1060 (Cumulative increase) | Y | |
| Part 63 | Summary table of combustion emission limits for S-1059 and S-1060 PS Furnaces (Cumulative increase, BACT, offsets) | Y | |
| Part 63.a | Monitoring requirements for combustion emission limits (Monitoring, BACT) | Y | |
| Part 67.a | SO2 emission limit, 365-day rolling average (BACT) | Y | |
| Part 67.b | SO2 emission limit, 7-day rolling average (BACT) | Y | |
| Part 69 | SO2 CEMS requirements (CEM Monitoring) | Y | |
| BAAQMD Condition 24245 | | | |
| Part 13 | SO2 Emission Reductions from FCCU – Install and operate a regenerative scrubber to control SO2 emissions and comply with limits no greater than 25 ppmvd, 365-day rolling average and 50 ppmvd, 7-day rolling average, both at 0% O2 (Basis: Consent Decree VI.B Paragraph 67) | Y | |
| Part 14 | SO2 Emission Reductions from FCCU – SO2 CEMS requirement, comply with Appendix F, excluding Sections 5.1.1, 5.1.3, and 5.1.4 which are superseded by this condition) (Basis: Consent Decree VI.B Paragraph 90) | Y | |
| Part 15 | SO2 Emission Reductions from FCCU – SO2 CEMS must be made available to EUP for life of Consent Decree (Basis: Consent Decree VI.B Paragraph 92) | Y | |
| Part 16 | SO2 Emission Reductions from FCCU – Submit site-specific SO2/TRS monitoring plan (Basis: Consent Decree VI.B Paragraph 93) | Y | |
| Part 17 | CO, Opacity and Particulate Emissions From FCCU – Limit CO emissions from FCCU to 500 ppmvd (at 0% O2), one-hour average (Basis: Consent Decree VII Paragraph 94) | Y | |
| Part 18 | CO, Opacity and Particulate Emissions From FCCU – Limit PM emissions from the VCCU to 1 lb/1000 lbs coke burned, one-hour average over three performance test runs (Basis: Consent Decree VII Paragraph 95) | Y | |
| Part 19 | CO, Opacity and Particulate Emissions From FCCU – Except as specified in Paragraph, comply with the CO, opacity, and PM emission standards specified in Paragraphs 94 and 95 and all requirements of 40CFR60, Subparts A and J (Basis: Consent Decree VII Paragraph 96) | Y | |

Table IV - A4
Source-Specific Applicable Requirements
Fluid Catalytic Cracking Unit, Catalyst Regenerator
S-5 (R-702)

| Applicable Requirement | Regulation Title or Description of Requirement | Federally Enforceable (Y/N) | Future Effective Date |
|------------------------|---|-----------------------------|-----------------------|
| Part 20 | CO, Opacity and Particulate Emissions From FCCU – Notifications per 40CFR60, Subparts A and J related to CO, opacity, and PM emissions from FCCU are not required (Basis: Consent Decree VII Paragraph 100) | Y | |
| Part 21 | CO, Opacity and Particulate Emissions From FCCU – CO CEMS or EPA-approved AMP, CEMS data availability, comply with Appendix F, excluding Sections 5.1.1, 5.1.3, and 5.1.4 which are superseded by this condition), performance testing for PM satisfied by 40CFR63, Subpart UUU (Basis: Consent Decree VII Paragraph 101) | Y | |
| Part 22 | CO, Opacity and Particulate Emissions From FCCU – CO, opacity, and PM limits do not apply during periods of startup, shutdown or malfunction of the FCCU or applicable CO or PM control equipment (Basis: Consent Decree VII Paragraph 102) | Y | |
| Part 23 | CO, Opacity and Particulate Emissions From FCCU – COMS or approved AMP requirements, including compliance with all applicable requirements of 40CFR60, Appendix A and Appendix B (Basis: Consent Decree VII Paragraph 103) | Y | |
| Part 24 | CO, Opacity and Particulate Emissions From FCCU – Submit to EPA an AMP for combined FCCU/Fluid Coker emissions (Basis: Consent Decree VII Paragraph 105) | Y | |
| Part 25 | NSPS Applicability to SO2 Emissions from FCCU Regenerators – FCCU regenerator shall be subject to 40CFR60, Subparts A and J for SO2 emissions (Basis: Consent Decree VIII Paragraph 107) | Y | |
| Part 26 | NSPS Applicability to SO2 Emissions from FCCU Regenerators – Notifications per 40CFR60, Subparts A and J related to SO2 emissions from FCCU are not required (Basis: Consent Decree VIII Paragraph 108) | Y | |
| Part 27 | NSPS Applicability to SO2 Emissions from FCCU Regenerators – SO2 CEMS requirement, make data available to EPA, and comply with 40CFR60, Appendix A and Appendix F, excluding Sections 5.1.1, 5.1.3, and 5.1.4 which are superseded by this condition) (Basis: Consent Decree VIII Paragraph 109) | Y | |
| Part 28 | NSPS Applicability to SO2 Emissions from FCCU Regenerators – SO2 limits do not apply during periods of startup, shutdown or malfunction of the FCCU or applicable SO2 control equipment (Basis: Consent Decree VIII Paragraph 110) | Y | |

**Table IV - A5
Source-Specific Applicable Requirements
Fluid Coker
S-6 (R-902)**

| Applicable Requirement | Regulation Title or Description of Requirement | Federally Enforceable (Y/N) | Future Effective Date |
|-------------------------------|--|-----------------------------|-----------------------|
| BAAQMD Condition 20820 | | | |
| Part 61 | Abatement requirements and vapor flow limit for S-5, S-6, S-1059, and S-1060 (Cumulative increase) | Y | |
| Part 63 | Summary table of combustion emission limits for S-1059 and S-1060 PS Furnaces (Cumulative increase, BACT, offsets) | Y | |
| Part 63.a | Monitoring requirements for combustion emission limits (Monitoring, BACT) | Y | |
| Part 67.a | SO2 emission limit, 365-day rolling average (BACT) | Y | |
| Part 67.b | SO2 emission limit, 7-day rolling average (BACT) | Y | |
| Part 69 | SO2 CEMS requirements (CEM Monitoring) | Y | |

**Table VII - A4 Combustion
Applicable Limits and Compliance Monitoring Requirements
S-5 (R702) – FLUID CATALYTIC CRACKING UNIT, CATALYST REGENERATOR**

| Type of Limit | Citation of Limit | FE Y/N | Future Effective Date | Limit | Monitoring Requirement Citation | Monitoring Frequency | Monitoring Type |
|-----------------|---|--------|-----------------------|--|---|----------------------|---------------------|
| SO ₂ | 40 CFR Part 60.104(b)(1) and Condition 24245 Part 25 | Y | | 50 ppmv @ 0% O ₂ , 7-day rolling average | 40 CFR Part 60.105(a)(9) and Condition 24245, Part 27 (AMP for alternate O ₂ CEMS span approved by EPA on January 2, 2013) | C | SO ₂ CEM |
| SO ₂ | Condition 20820, Parts 63, 67.a, and 67.b Condition 24245 Part | Y | | 21.4 ppmvd @ 3% O ₂ (25 ppmvd @ 0% O ₂), 365-day rolling average; 42.8 ppmvd @ 3% O ₂ (50 ppmv @ 0% O ₂), 7-day rolling average | Condition 20820, Parts 63.a and 69 and Condition 24245, Part 14 | C | SO ₂ CEM |

| Table VII - A4 Combustion Applicable Limits and Compliance Monitoring Requirements S-5 (R702) – FLUID CATALYTIC CRACKING UNIT, CATALYST REGENERATOR | | | | | | | |
|--|-------------------|--------|-----------------------|-------|---------------------------------|----------------------|-----------------|
| Type of Limit | Citation of Limit | FE Y/N | Future Effective Date | Limit | Monitoring Requirement Citation | Monitoring Frequency | Monitoring Type |
| | 13 | | | | | | |

Table VII – A5 Combustion
Applicable Limits and Compliance Monitoring Requirements
S-6 (R-902) – FLUID COKER

| Type of Limit | Citation of Limit | FE Y/N | Future Effective Date | Limit | Monitoring Requirement Citation | Monitoring Frequency (P/C/N) | Monitoring Type |
|-----------------|-------------------|--------|-----------------------|--|------------------------------------|------------------------------|---------------------|
| SO ₂ | BAAQMD 9-1-310.1 | Y | | SO ₂ emission limits for FCCUs and fluid cokers (1000 ppmv), averaged over 1 hour | BAAQMD 9-1-502; BAAQMD 1-520.6 | C | SO ₂ CEM |
| SO ₂ | | Y | | 21.4 ppmvd @ 3% O ₂ (25 ppmvd@ 0% O ₂), 365-day average; 42.8 ppmvd @ 3% O ₂ (50 ppmvd @ 0% O ₂), 7-day average | Condition 20820, Parts 63.a and 69 | C | SO ₂ CEM |

**Table VII – A5 Combustion
 Applicable Limits and Compliance Monitoring Requirements
 S-6 (R-902) – FLUID COKER**

| Type of Limit | Citation of Limit | FE Y/N | Future Effective Date | Limit | Monitoring Requirement Citation | Monitoring Frequency (P/C/N) | Monitoring Type |
|---------------|-------------------|--------|-----------------------|-------|---------------------------------|------------------------------|-----------------|
| | | | | | | | |

APPENDIX B

Alternative Monitoring Plans (AMPs)

List of AMPs:

| Description | Source(s) | Request Submittal Date | EPA Approval Date | EPA Point of Contact | Title V Permit | Appendix Location |
|--|------------------|-------------------------------|--------------------------|--|-----------------------|--------------------------|
| NSPS J/Ja Tank Degassing H2S CEMS (Envent) | Multiple | 4/5/2013 | 4/11/2013 | Joel Jones, Assistant Director, Air, Waste, and Toxics Branch Enforcement Division | Renewal, 2015 | B-1 |
| NSPS J/Ja Tank Degassing H2S CEMS (GEM) | Multiple | 4/11/2013 | 4/11/2013 | Joel Jones, Assistant Director, Air, Waste, and Toxics Branch Enforcement Division | Renewal, 2015 | B-2 |
| NSPS J/Ja Tank Degassing H2S CEMS (Global) | Multiple | 1/28/2015 (for Region IX) | 8/11/2014 (Region VI) | Joel Jones, Assistant Director, Air, Waste, and Toxics Branch Enforcement Division | Renewal, 2015 | B-3 |

Appendix B-1

40 CFR 60, NSPS Subparts J and Ja
Refinery-Wide

Envent AMP (Region 9),
VCU tank degassing alternative monitoring 4-11-13



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

APR 11 2013

Steve M. Sellinger
President and CEO
Envent Corporation
3220 East 29th Street
Long Beach, California 90806-2321

Re: Request for Approval of an Alternative Monitoring Plan for Tank Degassing and Vapor Control Projects at Petroleum Refineries

Dear Mr. Sellinger:

The United States Environmental Protection Agency, Region IX (EPA) has received your April 5, 2013, request (enclosed for reference) on behalf of Envent Corporation (Envent) for an alternative monitoring plan (AMP) with regard to the New Source Performance Standards for Petroleum Refineries, which are codified at 40 Code of Federal Regulations (CFR), Part 60, Subparts J and Ja (NSPS J and Ja). EPA hereby approves your request subject to the conditions and limitations described in this letter.

Among other things, NSPS J and Ja prohibit the owner or operator of a fuel gas combustion device from burning any gas generated at a petroleum refinery that contains hydrogen sulfide (H₂S) in excess of the following limits:

- (i) 230 milligrams per dry standard cubic meter (40 CFR § 60.104(a)(1)); and
- (ii) 162 parts per million by volume (ppmv) determined hourly on a 3-hour rolling average basis, and 60 ppmv determined daily on a 365-successive calendar day rolling average basis (40 CFR § 60.102a(g)(1)(ii)).

With regard to these H₂S limits, NSPS J and Ja require the owner or operator of a fuel gas combustion device (FGCD) to install, calibrate, maintain, and operate a continuous monitoring system (CMS) to monitor and record the concentration of H₂S in the fuel gases before being burned in the FGCD (40 CFR §§ 60.105(a)(4) and 60.107a(a)(2)).

According to your request, Envent performs vapor control and degassing services for tanks, vessels, and pipes at petroleum refineries by using thermal oxidizers. As you state in your request, Envent's thermal oxidizers combust vapors that may be considered refinery fuel gas. Thus, Envent's thermal oxidizers are FGCDs subject to NSPS J and Ja. The issue, according to your request, is that Envent's thermal oxidizers are mobile FGCDs that are used on temporary bases at petroleum refineries, which makes it infeasible and impractical to install H₂S CMS as required under NSPS J and Ja.

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Envent Corporation
Request for AMP
Page 2

Given that Envent's mobile thermal oxidizers are not fixtures at petroleum refineries, but are transported to the refineries on temporary bases to perform discrete degassing of tanks, vessels, or pipes, EPA agrees that it is impractical to require monitoring of these thermal oxidizers using H₂S CMS as required under NSPS J and Ja. Therefore, in accordance with 40 CFR § 60.13(i) and after consideration of your written request, EPA approves as an alternative to the continuous monitoring requirements of 40 CFR §§ 60.105(a)(4) and 60.107a(a)(2), the following AMP:

1. Envent shall use either H₂S colorimetric tube testing or a portable H₂S meter to determine the concentration of H₂S in gases entering each Envent mobile thermal oxidizer unit (the "Grab Sample"). Each Grab Sample shall be taken at the inlet to each mobile thermal oxidizer unit.
2. For each discrete degassing event, Envent shall perform a Grab Sample within 30 minutes of startup of each mobile thermal oxidizer unit (the "Initial Grab Sample").
3. If the Initial Grab Sample indicates a H₂S concentration equal to or less than 162 ppmv, then the inlet gas stream is deemed to meet the H₂S limits of NSPS J and Ja and no further monitoring is required for that discrete degassing event.
4. If the Initial Grab Sample indicates a H₂S concentration more than 162 ppmv, then for that discrete degassing event, the inlet gas stream is deemed to have exceeded the 230 milligrams per dry standard cubic meter limit of 40 CFR § 60.104(a)(1) and the 162 ppmv limit of 40 CFR § 60.102a(g)(1)(ii). Alternatively, Envent may demonstrate compliance with the H₂S limits in 40 CFR §§ 60.104(a)(1) and 60.102a(g)(1)(ii) by averaging three Grab Samples: (i) the Initial Grab Sample; (ii) a Grab Sample taken between 61 and 120 minutes after startup of the mobile thermal oxidizer unit; and (iii) a Grab Sample taken between 121 and 180 minutes after startup of the mobile thermal oxidizer unit. Envent can use this alternative method of demonstrating compliance only if it has three valid Grab Samples taken with the specified time periods.
5. Envent shall record the results of each Grab Sample and keep the records of all Grab Samples for at least five years.
6. Within 5 business days after each discrete degassing event, Envent shall provide the owner or operator of the petroleum refinery where the discrete degassing event is performed with the results of each Grab Sample, as well as a list of all dates and times when any Grab Sample indicates a H₂S concentration more than 162 ppmv. The purpose of this reporting requirement is to provide the owner or operator of the petroleum refinery with the data necessary for inclusion in its excess emissions and monitoring systems performance report or summary report form under 40 CFR § 60.7(c).
7. This AMP is limited to the requirements to install an H₂S CMS under NSPS J and Ja, and does not change Envent's obligations to meet all other applicable NSPS requirements, including but not limited to (i) the requirement to maintain and operate (to the extent practicable) any affected facility (including associated air pollution control equipment) in a manner consistent with good air pollution control practice for minimizing emissions (40 CFR § 60.11(d)); and (ii) the prohibition against concealing an emission which would otherwise constitute a violation of an applicable standard, including the use of gaseous diluents to achieve compliance with a

Envent Corporation
Request for AMP
Page 3

standard which is based on the concentration of a pollutant in the gases discharged to the atmosphere (40 CFR § 60.12).

Although this AMP is effective immediately, it shall automatically expire on the effective date of any change that EPA makes to NSPS J or Ja that directly addresses the requirement to monitor the H₂S concentration in the fuel gases burned in mobile FGCDs used to degassing tanks, vessels, or pipes at petroleum refineries.

If you have any questions regarding this determination, please contact Joseph Lapka, Acting Chief of EPA Region IX's Air Enforcement Section, at (415) 947-4226 or at lapka.joseph@epa.gov.

Sincerely,



Joel Jones
Assistant Director, Air, Waste, and Toxics Branch
Enforcement Division, EPA Region IX

11 April '13

Enclosure

cc:



April 5, 2013

Debrah Jordan
Director, Air Division
75 Hawthorne St
San Francisco, CA 94105
(Attn: Joseph Lapka – Air D-5)

**RE: Request for Alternative Monitoring Plan
40 CFR Parts 60.13 (i)
Standards of Performance for Petroleum Refineries**

Dear Ms. Jordan;

As discussed with your staff, Envent Corporation desires to obtain an Alternative Monitoring Plan (AMP) for the measurement of Hydrogen Sulfide (H₂S) in the vapor stream from tank degassing and vapor control projects in refineries. In some cases, these vapors may be considered "refinery fuel gas" and subject our thermal oxidizer/combustion units to the monitoring standards of NSPS Subpart J and Ja. Due to the nature of our temporary operations it is infeasible and impractical to perform the monitoring required by Subpart J and Ja. We are requesting your approval of the monitoring program detailed below.

In summary, we provide vapor control and degassing services for tanks, vessels, pipes and other vessels and systems using thermal oxidizers (aka thermal combustion units). In some cases, these vapors may be considered "refinery fuel gas". Due to our temporary and mobile nature of our operation, we are requesting an AMP that provides a feasible method for H₂S testing while still ensuring the limit is not exceeded. We propose that the AMP will limit the inlet vapor stream to the Envent Mobile Thermal Oxidizer units to 162 PPMV H₂S as determined using an H₂S Colorimetric Tube Testing or the RKI Eagle H₂S Meter. We propose that the operator measure and record the concentration of hydrogen sulfide (H₂S) at the inlet to the thermal oxidizer at

3220 East 29th Street, Long Beach, California 90806-2321

PHONE: 888.997.9465 • FAX: 562.997.9485 • www.enventcorporation.com • www.tankdegassing.com

MARTINEZ, CA • LONG BEACH, CA • DENVER, CO • HOUSTON, TX • NEWARK, NJ

*Envent Corporation
Request for AMP
April 5, 2013*

start up using colorimetric tubes or an RKI H2S Meter within 30 minutes of startup. If the inlet concentration of H2S is equal to or less than 150 ppmv, then the inlet gas stream is considered a low sulfur gas stream with H2S less than 162 PPMV and no additional testing is required.

In the event the H2S is above 150 PPMV, we will use an H2S scrubber unit or other means of controlling H2S in the fuel gas before it enters our combustion chamber. Once the scrubber or other means of address the H2S is instituted and the system started up again, another sample will be taken of the inlet to the thermal oxidizer within 30 minutes. If the inlet to the thermal oxidizer is less than 162 PPMV, the system will be considered in full compliance with NSPS Subpart J and no further testing will be required.

Please issue an AMP to allow our operation as described above.

If you have any questions, please don't hesitate to call me at (925) 787-5527.

Sincerely,



Steve M. Sellinger
President & CEO

Cc: Mr. Joseph Lapka
Air D-5
75 Hawthorne St
San Francisco, CA 94105

Ms. Brenda Shine
Office of Air Quality Planning & Standards
Sector Policies and Programs Division, Refining and Chemicals Group
Environmental Protection Agency
Research Park, NC 27711

3220 East 29th Street, Long Beach, California 90806-2321
PHONE: 888.997.9465 • FAX: 562.997.9485 • www.enventcorporation.com • www.tankdegassing.com

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Appendix B-2

40 CFR 60, NSPS Subparts J and Ja
Refinery-Wde

GEM AMP (Region 9),
VCU tank degassing alternative monitoring 4-11-13



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

APR 11 2013

Chris Longo
Regulatory Compliance Manager
GEM Mobile Treatment Services
1196 East Willow Street
Signal Hill, California 90755

Re: Request for Approval of an Alternative Monitoring Plan for Tank Degassing and Vapor Control Projects at Petroleum Refineries

Dear Mr. Longo:

The United States Environmental Protection Agency, Region IX (EPA) has received your April 11, 2013, request (enclosed for reference) on behalf of GEM Mobile Treatment Services (GEM) for an alternative monitoring plan (AMP) with regard to the New Source Performance Standards for Petroleum Refineries, which are codified at 40 Code of Federal Regulations (CFR), Part 60, Subparts J and Ja (NSPS J and Ja). EPA hereby approves your request subject to the conditions and limitations described in this letter.

Among other things, NSPS J and Ja prohibit the owner or operator of a fuel gas combustion device from burning any gas generated at a petroleum refinery that contains hydrogen sulfide (H₂S) in excess of the following limits:

- (i) 230 milligrams per dry standard cubic meter (40 CFR § 60.104(a)(1)); and
- (ii) 162 parts per million by volume (ppmv) determined hourly on a 3-hour rolling average basis, and 60 ppmv determined daily on a 365-successive calendar day rolling average basis (40 CFR § 60.102a(g)(1)(ii)).

With regard to these H₂S limits, NSPS J and Ja require the owner or operator of a fuel gas combustion device (FGCD) to install, calibrate, maintain, and operate a continuous monitoring system (CMS) to monitor and record the concentration of H₂S in the fuel gases before being burned in the FGCD (40 CFR §§ 60.105(a)(4) and 60.107a(a)(2)).

According to your request, GEM performs vapor control and degassing services for tanks, vessels, and pipes at petroleum refineries by using combustion devices. These combustion devices are FGCDs subject to NSPS J and Ja. The issue, according to your request, is that GEM's combustion devices are mobile FGCDs that are used on temporary bases at petroleum refineries, which makes it infeasible and impractical to install H₂S CMS as required under NSPS J and Ja.

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Given that GEM's combustion devices are not fixtures at petroleum refineries, but are transported to the refineries on temporary bases to perform discrete degassing of tanks, vessels, or pipes, EPA agrees that it is impractical to require monitoring of these thermal oxidizers using H₂S CMS as required under NSPS J and Ja. Therefore, in accordance with 40 CFR § 60.13(i) and after consideration of your written request, EPA approves as an alternative to the continuous monitoring requirements of 40 CFR §§ 60.105(a)(4) and 60.107a(a)(2), the following AMP:

1. GEM shall use either H₂S colorimetric tube testing or a portable H₂S meter to determine the concentration of H₂S in gases entering each GEM mobile combustion device (the "Grab Sample"). Each Grab Sample shall be taken at the inlet to each mobile combustion device.
2. For each discrete degassing event, GEM shall perform a Grab Sample within 30 minutes of startup of each mobile combustion device (the "Initial Grab Sample").
3. If the Initial Grab Sample indicates a H₂S concentration equal to or less than 162 ppmv, then the inlet gas stream is deemed to meet the H₂S limits of NSPS J and Ja and no further monitoring is required for that discrete degassing event.
4. If the Initial Grab Sample indicates a H₂S concentration more than 162 ppmv, then for that discrete degassing event, the inlet gas stream is deemed to have exceeded the 230 milligrams per dry standard cubic meter limit of 40 CFR § 60.104(a)(1) and the 162 ppmv limit of 40 CFR § 60.102a(g)(1)(ii). Alternatively, GEM may demonstrate compliance with the H₂S limits in 40 CFR §§ 60.104(a)(1) and 60.102a(g)(1)(ii) by averaging three Grab Samples: (i) the Initial Grab Sample; (ii) a Grab Sample taken between 61 and 120 minutes after startup of the mobile thermal oxidizer unit; and (iii) a Grab Sample taken between 121 and 180 minutes after startup of the mobile thermal oxidizer unit. GEM can use this alternative method of demonstrating compliance only if it has three valid Grab Samples taken with the specified time periods.
5. GEM shall record the results of each Grab Sample and keep the records of all Grab Samples for at least five years.
6. Within 5 business days after each discrete degassing event, GEM shall provide the owner or operator of the petroleum refinery where the discrete degassing event is performed with the results of each Grab Sample, as well as a list of all dates and times when any Grab Sample indicates a H₂S concentration more than 162 ppmv. The purpose of this reporting requirement is to provide the owner or operator of the petroleum refinery with the data necessary for inclusion in its excess emissions and monitoring systems performance report or summary report form under 40 CFR § 60.7(c).
7. This AMP is limited to the requirements to install an H₂S CMS under NSPS J and Ja, and does not change GEM's obligations to meet all other applicable NSPS requirements, including but not limited to (i) the requirement to maintain and operate (to the extent practicable) any affected facility (including associated air pollution control equipment) in a manner consistent with good air pollution control practice for minimizing emissions (40 CFR § 60.11(d)); and (ii) the prohibition against concealing an emission which would otherwise constitute a violation of an applicable standard, including the use of gaseous diluents to achieve compliance with a standard which is based on the concentration of a pollutant in the gases discharged to the atmosphere (40 CFR § 60.12).

Although this AMP is effective immediately, it shall automatically expire on the effective date of any change that EPA makes to NSPS J or Ja that directly addresses the requirement to monitor the H₂S concentration in the fuel gases burned in mobile FGCDs used to degassing tanks, vessels, or pipes at petroleum refineries.

If you have any questions regarding this determination, please contact Joseph Lapka, Acting Chief of EPA Region IX's Air Enforcement Section, at (415) 947-4226 or at lapka.joseph@epa.gov.

Sincerely,



Joel Jones
Assistant Director, Air, Waste, and Toxics Branch
Enforcement Division, EPA Region IX

11 April '13

Enclosure

cc:



REVISION
CORRECTIONS
FOR CHANGE

Ms. Kathleen H. Johnson
EPA- Director of Enforcement Region 9
75 Hawthorne St
San Francisco C.A. 94105

April 11, 2013

Re: Request for alternative monitoring plan to 40 CFR section 60.13 (i)

Dear Ms. Johnson:

For temporary and mobile fuel gas combustion devices will EPA allow the use of hand held H2S monitors or colorimetric tube testing to meet monitoring requirements for combustion units as listed in Subpart Ja § 60.107a (2)?

CEM's monitoring during vapor control projects of short duration presents significant operational and logistical difficulties. Activities such as tank, vessel and pipeline vapor control and degassing are of short duration and represent a small portion of total emissions facility-wide. GEM is able to meet the intent of limiting the quantity of sulfur compounds combusted under NSPS Ja through other methods more appropriate to these types of temporary operations.

Restrictions on H2S combustion and subsequent SOx emissions are already required of GEM's combustion equipment throughout several of California AQMD/APCD's. Compliance with required H2S limits has been demonstrated in these areas through the use of appropriate monitoring devices, sampling frequency, and recordkeeping. GEM proposes the use of hand-held instruments to regularly monitor combusted vapor streams in order to satisfy H2S restrictions imposed by NSPS Ja.

Examples of representative air district permit requirements are enclosed (SCAQMD-Permit Cond #29 & 30) as well as examples of GEM's record keeping methodology (SCAQMD-Log). Also included is information on proposed monitoring Instruments (BW Tech & Colorimetric). GEM H2S Meters are maintained by a thorough maintenance program which includes daily calibration as well as quarterly factory servicing. Alternatively colorimetric tube testing may be employed provided detector tubes of the appropriate range are utilized.

Best Regards,

A handwritten signature in black ink, appearing to read "Chris Longo", is written over a light blue horizontal line.

Chris Longo
Regulatory Compliance Manager

4-11-13
Date

Appendix B-3

40 CFR 60, NSPS Subparts J and Ja
Refinery-Wide

Global AMP Request (Region 9),
VCU tank degassing alternative monitoring request, 1-28-15



12600 North Featherwood
Suite #330 | Houston, TX 77034
Ph: +1.713.678.7400 | Fx: +1.713.672.3988
info@gvcontrol.com | www.gvcontrol.com

Ms. Kathleen H. Johnson
EPA – Director of Enforcement Region 9
75 Hawthorne Street
San Francisco, CA 94105

January 28, 2015

Re: Request for Alternative Monitoring Plan (AMP)
40 CFR Part 60.13(i)
Standards of Performance for Petroleum Refineries

Dear Ms. Johnson:

Global Vapor Control, Inc. (GVC) desires to obtain an Alternative Monitoring Plan (AMP) for the measurement of Hydrogen Sulfide (H₂S) in the vapor stream from tank degassing and vapor control projects in refineries. In some cases, these vapors may be considered "refinery fuel gas" and subject our thermal oxidizer units to the monitoring standards of NSPS Subpart J and Ja. Due to the temporary and mobile nature of our operations it is infeasible and impractical to perform the monitoring required by Subpart J and Ja. We are requesting your approval of the monitoring program detailed below.

Specifically, GVC provides vapor control and degassing services for tanks, pipelines and other vessels and systems using portable temporary thermal oxidizer units (TOUs). In some cases, these vapors may be considered "refinery fuel gas." Due to the temporary and mobile nature of our operation, we are requesting an AMP that provides a feasible method for H₂S testing while still ensuring the limit is not exceeded. We propose that the AMP will limit the inlet vapor stream to the GVC TOU to 162 PPMV H₂S as determined using an H₂S Colorimetric Tube Testing or a portable H₂S Meter to determine the concentration of H₂S gas entering each TriStar/GVC TOU. We propose that the operator measure and record the concentration of hydrogen sulfide (H₂S) at the inlet to the thermal oxidizer at startup using colorimetric tubes or a portable H₂S meter within 30 minutes of startup. If the inlet concentration of H₂S is equal to or less than 150 ppmv, then the inlet gas stream is considered a low sulfur gas stream with H₂S less than 162 PPMV and no additional testing is required.

A TriStar Global Energy Solutions Company
www.TriStarGES.com



12600 North Featherwood
Suite #330 | Houston, TX 77034
Ph: +1.713.678.7400 | Fx: +1.713.672.3988
info@gvcontrol.com | www.gvcontrol.com

In the event the H₂S is above 150 PPMV, we will use an H₂S scrubber unit or other means of controlling H₂S in the fuel gas before it enters our combustion chamber. Once the scrubber or other means of address the H₂S is instituted and the system started up again, another sample will be taken of the inlet to the thermal oxidizer within 30 minutes. If the inlet to the thermal oxidizer is less than 162 PPMV, the system will be considered in full compliance with NSPS Subpart J and no further testing will be required.

Attached please find our current AMP issued and followed for Region 6, we would hope to have a similar AMP issued for Region 9 as described.

If you have any questions, please don't hesitate to call me directly at (832) 775-1591.

Sincerely,

A handwritten signature in blue ink, appearing to read "BRCarter", is written over a horizontal line.

Brian R. Carter
General Counsel



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733

August 11, 2014

Brian Carter
Tristar Global Energy Solutions Company
dba Global Vapor Control
12500 North Featherwood, Suite #330
Houston, TX 77034

Re: Alternative Monitoring Plan (AMP) – Tank Degassing and Similar Vapor Control Projects at Various Petroleum Refineries in Region 6 Subject to New Source Performance Standards (NSPS) for Petroleum Refineries (Subpart J and Ja) – Hydrogen Sulfide (H₂S) Monitoring for Vapors Combusted in Portable Thermal Oxidizers Owned/Operated by Tristar Global dba Global Vapor Control (Tristar/GVC).

Dear Mr. Carter:

This letter is in response to your request dated February 11, 2014, pertaining to the use of portable temporary thermal oxidizer units (TOUs) for emissions control during tank degassing and similar vapor control projects at various petroleum refineries located in Region 6 that are subject to NSPS Subparts J or Ja. Upon review of information provided, the United States Environmental Protection Agency (EPA) conditionally approves your AMP for facilities located in Region 6, as explained below and further outlined in the Enclosure to our letter.

Specifically, Tristar/GVC performs degassing services for tanks, vessels, and pipes located at petroleum refineries. The use of portable TOUs to combust vapors that are refinery fuel gas streams result in the TOUs being considered fuel gas combustion devices subject to either NSPS Subpart J or Subpart Ja, depending on the particular refinery-specific operations. Therefore, although your AMP only references NSPS Subpart Ja, our evaluation covers provisions from both Subparts J and Ja. NSPS Subpart J and Ja prohibit the owner or operator of a fuel gas combustion device from burning vent gas generated at a petroleum refinery that contains H₂S in excess of the following limits:

- 1) 230 milligrams per dry standard cubic meter (mg/dscm), per 40 CFR § 60.104(a)(1);
- 2) 162 parts per million by volume (ppmv) determined hourly on a 3-hour rolling average basis and 60 ppmv determined daily on a 365-day successive calendar day rolling average basis, per 40 CFR § 60.102a (g)(1)(ii).

In addition, NSPS Subparts J and Ja require the owner or operator of a fuel gas combustion device to install, calibrate, maintain, and operate a continuous emission monitoring system (CEMS) to monitor and record the concentration of H₂S in the fuel gases before being burned in a combustion device, per 40 CFR §§ 60.105(a)(4) and 60.107a(a)(2), respectively. Since your portable TOUs are used on a temporary basis at each facility, you contend that installation of an H₂S CEMS would not be economically feasible and technically impractical to implement.

Based upon the information provided to date, EPA agrees that, for the specific portable and temporary combustion device use as described in your request, it is impractical to require monitoring via an H₂S CEMS as specified by NSPS Subparts J and Ja. Therefore, per 40 CFR § 60.13(i), EPA

EPA Region 6 Conditional AMP Approval
Tristar/GVC - Portable Thermal Oxidizers, NSPS Subpart Ja

Page 2

conditionally approves Tristar/GVC's AMP. Our conditional approval is limited to the monitoring of H₂S for the operations described in your AMP request, and delineated in the Enclosure to this letter. Please note that our conditional approval does not alter Tristar/GVC's or a refinery's obligations to meet all other applicable NSPS requirements, including, but not limited to, the following NSPS General Provisions:

- 1) the requirement to maintain and operate affected facilities and associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions, per 40 CFR § 60.11(d); and,
- 2) the prohibition against concealing emissions which would otherwise constitute a violation of an applicable standard, including the use of gaseous diluents to achieve compliance with a standard which is based on the concentration of a pollutant in the gases discharged to the atmosphere, per 40 CFR § 60.12.

In addition, if a refinery already has an approved AMP for control and monitoring of tank, vessel and piping degassing emissions, then the refinery's AMP shall remain in effect, in addition to non-over-lapping provisions of this conditional approval that are specific to Tristar/GVC's operation of the portable TOUs. If overlapping provisions need to be addressed, either Tristar/GVC or the refinery may submit a request for site-specific review and revision to a particular facility's approved AMP.

This conditional approval is based upon consultation with our Office of Air Quality Planning and Standards (OAQPS) and our Office of Enforcement and Compliance Assistance. This conditional approval shall automatically expire on the effective date of any change to NSPS Subparts J or Ja that directly affects the requirements to monitor H₂S concentrations in fuel gases burned in portable combustion devices. Furthermore, if Tristar/GVC's use of portable TOUs during degassing operations changes from the representations made in the request, this approval will become null and void. If a refinery's operations change such that the sulfur content of the off-gas vent streams increases beyond levels specified in the Enclosure to this letter, then the refinery must document the change(s) and furnish the data to Tristar/GVC, so that you may follow appropriate steps in either 40 CFR §§ 60.105(b)(3)(i)-(iii) or 60.107a(b)(3)(i)-(iii). Finally, EPA's conditional approval should be referenced and attached to Tristar/GVC's Texas Permit By Rule Registration #120116, dated May 21, 2014, three Louisiana air permits issued in May and June 2012, and any new source review permit in other EPA Region 6 states where degassing operations at refineries will occur, to ensure federal enforceability. If you have any questions about this conditional approval, please feel free to contact Diana Lundelius of my staff at (214) 665-7468, or by e-mail at lundelius.diana@epa.gov.

Sincerely,



Steve Thompson,
Associate Director
Air/Toxics and Inspection
Coordination Branch

Enclosure

ENCLOSURE

Alternative Monitoring Plan (AMP) Evaluation For Monitoring H₂S in Vapors Combusted in Portable Thermal Oxidizer Units During Degassing Services For Tanks, Vessels, and Piping at Petroleum Refineries Located in EPA Region 6

Tristar/GVC requested approval of an alternative monitoring plan (AMP) on February 11, 2014, for monitoring hydrogen sulfide (H₂S) in vapors that are combusted in their portable thermal oxidizer units (TOUs). Tristar/GVC performs degassing services for tanks, vessels, and piping at petroleum refineries using portable and temporary TOUs as emission control devices. Since Tristar/GVC's portable TOUs combust vapors that may be considered refinery fuel gas, the TOUs are combustion devices subject to New Source Performance Standards (NSPS) for Petroleum Refineries, Title 40 Code of Federal Regulations (C.F.R.) Part 60, Subpart Ja. While the TOUs are subject to NSPS Ja, the incoming fuel gas streams from degassing at various refineries may be subject to either NSPS J or Ja. Since the TOUs are portable units that are used on a temporary basis, and are not permanent equipment owned or operated by the petroleum refineries, EPA agrees that it is not economically feasible and technically impractical to install H₂S CEMS, as required under either NSPS Subparts J or Ja.

Based on Tristar/GVC's representations of the degassing operations that will be covered by the AMP, the operation of the portable combustion devices, and other information furnished in the company's AMP request of February 11, 2014, and in email correspondence on May 21 and June 16, 2014, the following conditions are required as part of EPA's approval:

1. Each refinery where Tristar/GVC conducts degassing operations shall provide Tristar/GVC the following information:
 - (i) a list of the tanks, vessels and piping where degassing operations may occur;
 - (ii) a site plan diagram showing the locations and orientation of the tanks, vessels, and piping where degassing operations will occur, and the locations where Tristar/GVC may locate the portable thermal oxidizers and other equipment necessary for the degassing operations;
 - (iii) the names and titles of responsible refinery individuals who will review and approve degassing grab sample records and log sheets for the refinery;
 - (iv) a list of the materials stored in each tank, vessel, or piping area, and Material Safety Data Sheets (MSDS) for each material;
 - (v) a list of operating restrictions, if any, to ensure that degassing operations conform to special conditions in the refinery's air permits; and,
 - (vi) if applicable, a copy of the refinery's AMP for degassing operations that includes the use of portable control and combustion devices.

2. Tristar/GVC shall use either H₂S length of stain colorimetric tube testing or a portable H₂S meter to determine the concentration of H₂S in gases entering each Tristar/GVC portable TOU (i.e. a "grab sample"). Each grab sample shall be taken at the inlet of each mobile thermal oxidizer unit.

3. For each discrete degassing event, Tristar/GVC shall collect a grab sample for H₂S within 30 minutes of startup of each portable TOU (the "initial grab sample").
4. If the initial grab sample indicates an H₂S concentration equal to or less than 162 ppmv, then the inlet gas stream is deemed to meet the H₂S limits of NSPS J and Ja, and no further monitoring is required for that discrete degassing event.
5. If the initial grab sample indicates a H₂S concentration more than 162 ppmv, then for that discrete degassing event, the inlet gas stream is deemed to have exceeded the 230 mg/dsem limit of 40 C.F.R. § 60.104(a)(1) and the 162 ppmv limit of 40 C.F.R. § 60.102a(g)(1)(ii). Alternatively, Tristar/GVC may demonstrate compliance with the H₂S limits in 40 C.F.R. §§ 60.104(a)(1) and 60.102a(g)(1)(ii) by averaging three grab samples:
 - (i) the initial grab sample;
 - (ii) a grab sample taken between 61 and 120 minutes after startup of the mobile thermal oxidizer unit; and,
 - (iii) a grab sample taken between 121 and 180 minutes after startup of the mobile thermal oxidizer unit.

Tristar/GVC can use this alternative method of demonstrating compliance only if three valid grab samples are taken within the specified time periods.

6. Tristar/GVC shall record the results of each grab sample, the key activities completed with each degassing operation, and other relevant information, on the forms furnished for approval to EPA Region 6. Tristar/GVC shall keep the records of all grab samples and degassing events for at least five years.
7. Within 5 business days after each discrete degassing event, Tristar/GVCs shall provide the owner or operator of the petroleum refinery where the discrete degassing event is performed the results of each grab sample, as well as a list of all dates and times when any grab sample indicated an H₂S concentration exceeded 162 ppmv. The purpose of this reporting requirement is to provide the owner or operator of the petroleum refinery with the data necessary for inclusion in excess emission reports and monitoring system performance reports required by 40 C.F.R. § 60.7(c).
8. Vapors from degassing operations shall be vented only to a TOU which is in full operation, and has been issued an air permit or other appropriate air emissions authorization by the State where the refinery is located.
9. Refineries must comply with the other applicable requirements of NSPS Subpart J or Ja that apply to the refinery fuel gas when Tristar/GVC conducts degassing operations. The use of Tristar/GVC's portable TOUs for control of H₂S and other refinery fuel gas vent stream pollutants at processes other than the degassing operations represented is not covered or authorized by this conditional AMP.

APPENDIX C

Compliance Assurance Monitoring

Valero Benicia Asphalt Plant
Facility #A0901
Compliance Assurance Monitoring (CAM) Analysis

| Source # | Source Description | Pollutant | PTE Emissions > 100 tpy criteria > 10 tpy HAP ¹ | Control Device Used? Y/N | Federally Enforceable Emissions Limit or Standard | | | Existing Monitoring | Is Limit or Standard post 11/15/90 ² (Y/N) | Subject to CAM? | | | Exempt from CAM? | | | Conclusion/Notes |
|-----------------------------------|---|-------------------|--|-----------------------------|--|-----------------------------|------|---------------------|--|-----------------|-------------------|-------------------|-----------------------|---|--|------------------|
| | | | | | Limit | Reference | Note | | | (Y/N) | Citation | Description | (Y/N) | Citation | Description | |
| 3 | Gas Oil Storage Tank, TK4601C | VOC | See Note | N | -- | -- | -- | Source Test | -- | N | 40 CFR 64.2(a)(2) | No Control Device | -- | -- | -- | Not Subject |
| 5-8, 37, 38, 51-54, 60-62, 65, 70 | Sources with Closed Vent Systems: Fixed Roof Storage Tanks and Asphalt Loading Rack (S54) | PM | See Note | Y | Ringelmann No. 1 for no more than 3 minutes/hour | SIP 6-301 | -- | Temperature CPMS | Y | Y | -- | -- | Y | Both 40 CFR 64.2(b)(1)(i) and 40 CFR 64.2(b)(1)(vi) | Both Standard/Limit adopted post 1990 and Continuous Compliance Determination Method | Exempt |
| | | | | | 0.15 grain/dscf | SIP-6-310 | -- | Temperature CPMS | Y | | | | | | | |
| | | | | | 0% opacity except for one consecutive 15-minute period in any 24-hour period | 40 CFR 60.472(c) | -- | Temperature CPMS | Y | | | | | | | |
| | | NMHC < 42.705 tpy | Condition 1240, Part I.14 | -- | Temperature CPMS | ND | | | | | | | | | | |
| | | VOC | See Note | Y | 95% control of inlet VOC | Condition 1240, Part II.32a | -- | Temperature CPMS | ND | Y | -- | -- | Y | 40 CFR 64.2(b)(1)(vi) | Continuous Compliance Determination Method | |
| 9 | Naphtha Storage Tank, TK4607 | VOC | See Note | N | -- | -- | -- | Source Test | -- | N | 40 CFR 64.2(a)(2) | No Control Device | -- | -- | -- | Not Subject |
| 12, 13, 26, 28, 59, 63, 67 | Fixed Roof Storage Tanks with Closed Vent Systems | VOC | See Note | Y | 95% control of VOC | SIP 8-5-306 | -- | Temperature CPMS | ND | Y | -- | -- | Y | 40 CFR 64.2(b)(1)(vi) | Continuous Compliance Determination Method | Exempt |
| | | | | | NMHC < 42.705 tpy | Condition 1240, Part I.14 | -- | Temperature CPMS | ND | Y | -- | Y | 40 CFR 64.2(b)(1)(vi) | Continuous Compliance Determination Method | | |
| | | | | | 95% control of inlet VOC | Condition 1240, Part II.32a | -- | Temperature CPMS | ND | Y | -- | Y | 40 CFR 64.2(b)(1)(vi) | Continuous Compliance Determination Method | | |
| S13, S59, S63 | Fixed Roof Storage Tanks with Closed Vent Systems | VOC | See Note | Y | 95% control of inlet VOC | 40 CFR 60.112b(a)(3)(ii) | -- | Temperature CPMS | ND | Y | -- | -- | Y | 40 CFR 64.2(b)(1)(vi) | Continuous Compliance Determination Method | Exempt |

¹ Pre-control PTE emissions for the source are assumed to be greater than the major source threshold as described in section 112(b) of the Clean Air Act (40 CFR 64.2(a)(3), 40 CFR 71.2).

² ND indicates that it was not necessary to determine the regulatory adoption date because there is an alternate exemption from the regulation.

Valero Benicia Asphalt Plant
Facility #A0901
Compliance Assurance Monitoring (CAM) Analysis

| Source # | Source Description | Pollutant | PTE Emissions > 100 tpy criteria > 10 tpy HAP ¹ | Control Device Used? | Federally Enforceable Emissions Limit or Standard | | | Existing Monitoring | Is Limit or Standard post 11/15/90 ² | Subject to CAM? | | | Exempt from CAM? | | | Conclusion/Notes |
|----------|--|-----------|--|----------------------|---|-------------------------------------|------|---------------------|---|-----------------|-------------------|-------------------|------------------|---|--|------------------|
| | | | | Y/N | Limit | Reference | Note | | (Y/N) | (Y/N) | Citation | Description | (Y/N) | Citation | Description | |
| 16 | Truck Loading Rack, Heavy Vacuum Gas Oil | VOC | See Note | N | -- | -- | -- | NA | -- | N | 40 CFR 64.2(a)(2) | No Control Device | -- | -- | -- | Not Subject |
| 17 | Truck Loading Racks - HVGO | | See Note | Y | Ringelmann No. 1 for no more than 3 minutes/hour | SIP 6-301 | -- | Temperature CPMS | Y | Y | -- | -- | Y | Both 40 CFR 64.2(b)(1)(i) and 40 CFR 64.2(b)(1)(vi) | Both Standard/Limit adopted post 1990 and Continuous Compliance Determination Method | Exempt |
| | | PM | | | 0.15 grain/dscf | SIP-6-310 Condition 1240, Part 1.14 | -- | | Y | | | | | Both 40 CFR 64.2(b)(1)(i) and 40 CFR 64.2(b)(1)(vi) | Both Standard/Limit adopted post 1990 and Continuous Compliance Determination Method | |
| | | VOC | | | NMHC < 42.705 tpy | | -- | | ND | | | | | 40 CFR 64.2(b)(1)(vi) | Continuous Compliance Determination Method | |
| 18 | Crude Unit | VOC | See Note | N | -- | -- | -- | NA | -- | N | 40 CFR 64.2(a)(2) | No Control Device | -- | -- | -- | Not Subject |
| 19 | Vacuum Heater | NOx | See Note | N | -- | -- | -- | Source Test | -- | N | 40 CFR 64.2(a)(2) | No Control Device | -- | -- | -- | Not Subject |
| | | CO | See Note | N | -- | -- | -- | Source Test | | | | | | | | |
| | | SO2 | See Note | N | -- | -- | -- | NA | | | | | | | | |
| | | PM | See Note | N | -- | -- | -- | NA | | | | | | | | |
| | | VOC | See Note | N | -- | -- | -- | NA | | | | | | | | |
| 20 | Steam Boiler | NOx | See Note | N | -- | -- | -- | Source Test | -- | N | 40 CFR 64.2(a)(2) | No Control Device | -- | -- | -- | Not Subject |
| | | CO | See Note | N | -- | -- | -- | Source Test | | | | | | | | |
| | | SO2 | See Note | N | -- | -- | -- | NA | | | | | | | | |
| | | PM | See Note | N | -- | -- | -- | NA | | | | | | | | |
| | | VOC | See Note | N | -- | -- | -- | NA | | | | | | | | |
| 21 | Steam Boiler | NOx | See Note | N | -- | -- | -- | Source Test | -- | N | 40 CFR 64.2(a)(2) | No Control Device | -- | -- | -- | Not Subject |
| | | CO | See Note | N | -- | -- | -- | Source Test | | | | | | | | |
| | | SO2 | See Note | N | -- | -- | -- | NA | | | | | | | | |
| | | PM | See Note | N | -- | -- | -- | NA | | | | | | | | |
| | | VOC | See Note | N | -- | -- | -- | NA | | | | | | | | |
| 24 | Hot Oil Heater | NOx | See Note | N | -- | -- | -- | NA | -- | N | 40 CFR 64.2(a)(2) | No Control Device | -- | -- | -- | Not Subject |
| | | SO2 | See Note | N | -- | -- | -- | NA | | | | | | | | |
| | | PM | See Note | N | -- | -- | -- | Temperature CPMS | | | | | | | | |
| | | VOC | See Note | N | -- | -- | -- | Temperature CPMS | | | | | | | | |

¹ Pre-control PTE emissions for the source are assumed to be greater than the major source threshold as described in section 112(b) of the Clean Air Act (40 CFR 64.2(a)(3), 40 CFR 71.2).

² ND indicates that it was not necessary to determine the regulatory adoption date because there is an alternate exemption from the regulation.

Valero Benicia Asphalt Plant
Facility #A0901
Compliance Assurance Monitoring (CAM) Analysis

| Source # | Source Description | Pollutant | PTE Emissions > 100 tpy criteria > 10 tpy HAP ¹ | Control Device Used? | Federally Enforceable Emissions Limit or Standard | | | Existing Monitoring | Is Limit or Standard post 11/15/90 ² | Subject to CAM? | | | | Exempt from CAM? | | Conclusion/Notes |
|----------|---|-----------|--|----------------------|---|-------------------------|------|---------------------|---|-----------------|-------------------|--|-------|---|--|------------------|
| | | | | Y/N | Limit | Reference | Note | | (Y/N) | (Y/N) | Citation | Description | (Y/N) | Citation | Description | |
| 31 | Rail Car Asphalt and Gas Oil Loading Rack | VOC | See Note | Y | 0.17 lbs/1,000 gallons loaded | BAAQMD 8-6-301 | -- | Temperature CPMS | Y | Y | -- | -- | Y | Both 40 CFR 64.2(b)(1)(i) and 40 CFR 64.2(b)(1)(vi) | Both Standard/Limit adopted post 1990 and Continuous Compliance Determination Method | Exempt |
| | | PM | See Note | Y | Ringelmann No. 1 for no more than 3 minutes/hour 0.15 grain/dscf | SIP 6-301 SIP-6-310 | -- | | Y Y | Y | 40 CFR 64.2(a)(2) | No Control Device | -- | -- | -- | -- |
| 34 | Tank Heater | NOx | See Note | N | -- | -- | -- | NA | -- | N | 40 CFR 64.2(a)(2) | No Control Device | -- | -- | -- | Not Subject |
| | | VOC | See Note | N | -- | -- | -- | NA | -- | N | 40 CFR 64.2(a)(2) | No Control Device | -- | -- | -- | Not Subject |
| | | SO2 | See Note | N | -- | -- | -- | NA | -- | N | 40 CFR 64.2(a)(2) | No Control Device | -- | -- | -- | Not Subject |
| | | PM | See Note | N | -- | -- | -- | NA | -- | N | 40 CFR 64.2(a)(2) | No Control Device | -- | -- | -- | Not Subject |
| 68 | Emergency Diesel-Powered Firewater Pump | PM | See Note | N | -- | -- | -- | NA | -- | N | 40 CFR 64.2(a)(2) | No Control Device | -- | -- | -- | Not Subject |
| 69 | Asphalt Loading Bin | PM | See Note | N | -- | -- | -- | Temperature CPMS | -- | N | 40 CFR 64.2(a)(2) | No Control Device | -- | -- | -- | Not Subject |
| 71 | Emergency Diesel Air Compressor | PM | No | Y | PM Emission Standard | CARB ATCM 93115.6(b)(3) | -- | NA | ND | N | 40 CFR 64.2(a)(3) | Potential Pre-Control Emissions < Major Source | -- | -- | -- | Not Subject |

¹ Pre-control PTE emissions for the source are assumed to be greater than the major source threshold as described in section 112(b) of the Clean Air Act (40 CFR 64.2(a)(3), 40 CFR 71.2).

² ND indicates that it was not necessary to determine the regulatory adoption date because there is an alternate exemption from the regulation.