Bay Area Air Quality Management District

939 Ellis Street
San Francisco, CA 94109
(415) 771-6000

Statement of Basis
for
MAJOR FACILITY REVIEW PERMIT

for

Equilon Enterprises, LLC.
dba Shell Oil Products US Martinez Terminal
Facility #B1956

A support facility for:

Shell Martinez Refinery, Shell Oil Products US
Facility #A0011

Facility Address:
Shell Martinez Refinery
1801 Marina Vista Drive
Martinez, CA 94553

Mailing Address:
1801 Marina Vista Drive
Martinez, CA 94553

September 2014

TABLE OF CONTENTS

Title V Statement of Basis

This is the draft initial permit for a petroleum bulk terminal that is a support facility for Shell Martinez Refinery, Shell Oil Products US (Site No. A0011). Explained in detail in this Statement of Basis, as a support facility, this Equilon Enterprises, LLC, Martinez Terminal Title V permit includes the applicable regulatory requirements that would otherwise apply to the Martinez Terminal if it was included as part of the Shell refinery's Title V permit.

A. Background

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

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

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

Each facility in the Bay Area is assigned a facility number that consists of a letter and a 4-digit number. This facility number is also considered to be the identifier for the permit. The identifier for this facility is B1956.

B. Facility Description

Equilon Enterprises, LLC, dba Shell Oil Products US Martinez Terminal (Equilon) owns a Gasoline Bulk Terminal that is integrated into the overall Shell Martinez Refinery facility. Gasoline and other related products that are stored at the Shell Martinez Refinery are transferred by pipeline to Equilon where they are blended and loaded into tanker trucks.

General Description of an Oil Refinery:

An oil refinery is an intermediary between crude oil and a refined product. It takes dirty, low-value oil originating from the ground and distills it under atmospheric pressure into its primary components: gases (light ends), gasolines, kerosene and diesels (middle distillates), heavy distillates, and heavy bottoms. The heavy bottoms go on to a vacuum distillation unit to be distilled again, this time under a vacuum, to salvage any light ends or middle distillates that did not get separated under atmospheric pressure; the heaviest bottoms continue on to a coker to obtain more components of value.

Other product components are processed by downstream units to be cleaned (hydrotreated), cracked (catalytic or hydrocracking), reformed (catalytic reforming), or alkylated (alkylation) to form gasolines and high-octane blending components, or to have sulfur or other impurities removed to make diesel fuel. Many of these downstream units rely on high purity hydrogen to function as designed. Depending on the process units in a refinery and the crude oil input, an oil refinery can produce a wide range of salable products: many different grades of gasoline and gasoline blend stocks, several grades of diesel, kerosene, jet and aviation fuel, fuel oil, bunker fuels, waxes, solvents, sulfur, coke, asphalt, or chemical plant feedstocks.

A more 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/ch05/

The principal sources of air emissions from refineries are:

- Combustion units (furnaces, boilers, and cogeneration facilities)
- FCC (Fluidized Catalytic Cracking)
- Storage tanks
- Fugitive emissions from pipe fittings, pumps, and compressors
- Sulfur plants
- Wastewater treatment facilities

The primary sources of emissions from the Equilon Martinez Terminal are from the truck loading operations. Loading operation emissions are generally controlled through the use of a vapor recovery system and carbon adsorption technology.

The Equilon Martinez Terminal facility is an integral part of the Shell Martinez Refinery owned by Shell Oil Products US Facility A0011. The major integration is as follows:

- All petroleum products loaded at the Equilon Martinez Terminal are produced in process units located at the Shell Martinez Refinery.
- All petroleum products loaded at the Equilon Martinez Terminal are stored in tanks located at the Shell Martinez Refinery.

- Terminal wastewater is delivered to the Shell Martinez Refinery wastewater system where it is treated in the Shell Martinez Refinery wastewater treatment facility. Emissions from process wastewater are included in the fugitive emissions.

Emissions for the facility are shown in the following table.

Description	Potential to Emit, Tons/yr				
	Organic	NOx	CO	PM	SO2
Truck Loading Racks	**14.36**	**0**	**0**	**0**	**0**
Slop Tank	**0.02**	**0**	**0**	**0**	**0**
Transportable Containers	**0.07**	**0**	**0**	**0**	**0**
Abatement Device Secondary Emissions	**0.04**	**1.51**	**6.05**	**0.06**	**0.004**
Total Facility Emissions	**14.49**	**1.51**	**6.05**	**0.06**	**0.004**

Hazardous Air Pollutants are shown in the following table.

HAP		Potential to Emit	
		Lb/year	Tons/year
Benzene		101.2	0.0506
Ethylbenzene		25.3	0.0127
n-Hexane		167.8	0.0839
Iso-Octane		230.5	0.1153
IsoPropyl Benzene		3.4	0.0017
Naphthalene		4.4	0.0022
1,2,4-Trimethylbenzene		39.0	0.0195
Toluene		207.5	0.1038
Xylene (Total)		144.3	0.0722
		Total HAP	0.4619
		Maximum HAP (Iso-Octane)	0.1153

Combustion greenhouse gases (GHG) are shown in the following table. Emissions are only from intermittently used backup abatement devices and are based on natural gas combustion of 15,120 MMBtu/yr. These emissions are conservative since normally abatement is through carbon absorption.

GHG	Emission Factor		Potential to Emit		
	Kg/MMBtu	Lb/MMbtu	Lb/year	Tons/year	MT/year
Carbon Dioxide	66.72	147	2,222,640	1,111	0.355

C. Permit Content

The legal and factual basis for the permit follows. The permit sections are described in the order that they are presented in the permit.

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.

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 or S-24).

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

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

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

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 equipment, 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 this table are the maximum allowable capacities for each source, pursuant to Standard Condition I.J and Regulation 2-1-403.

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 a significant source pursuant to the definition in BAAQMD Rule 2-6-239.

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) listed following the corresponding District Rules. SIP rules are District rules that have been approved by EPA into 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 portions of the SIP rule are cited separately after the District rule. The SIP portions will be federally enforceable; the non-SIP versions will not be federally enforceable, unless EPA has approved them through another program.
- Other District requirements, such as the Manual of Procedures, as appropriate.
- Federal requirements (other than SIP provisions)
- BAAQMD permit conditions. The text of BAAQMD permit conditions is found in Section VI of the permit.
- Federal permit conditions. The text of Federal permit conditions, if any, is found in Section VI of the permit.

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

Complex Applicability Determinations:

This facility was originally permitted by Shell Oil Company Plant 11 in 1978 via Application 26635. On March 22, 1979, Shell was granted a Permit to Operate for the following sources:

S-1701	No 1 Truck Loading Rack
S-1702	No 2 Truck Loading Rack
S-1703	No 3 Truck Loading Rack
S-1704	12,000 Gallon Underground Slop Tank

In 1986, via Application 31461, these sources were permitted by Shell Oil Company Plant 3694 as follows:

S-1	No 1 Truck Loading Rack
S-2	No 2 Truck Loading Rack
S-3	No 3 Truck Loading Rack
S-4	8,000 Gallon Underground Slop Tank

In 1998, the ownership of these sources was transferred to Equilon Plant 11956 and currently the sources are permitted by Equilon Enterprises, LLC, Martinez Terminal, d.b.a. Shell Oil Products US.

The Air District has determined that Equilon Enterprises, LLC, Martinez Terminal qualifies as part of the same facility as the Shell Martinez Refinery Facility pursuant to the definition of "Facility" in Regulation 2-6-206. In order to be considered the same facility, or one major source for the purposes of District Regulation 2-6, Title V and federal permitting purposes, sources must be:

1. located on contiguous or adjacent property
2. under common control, and
3. belonging to the same "industrial grouping" (or one is a support facility for the other).

In the case of the Equilon Enterprises, LLC, Martinez Terminal, factors one and three are clearly met. First, the facility is located adjacent to the Shell Martinez Refinery. In addition, the terminal is a support facility for the refinery. Since all petroleum products that are loaded at the terminal are delivered from the Shell Martinez Refinery, the terminal supports the operation of the refinery. The Air District has also determined that the terminal and refinery are under "common control." The Equilon Enterprises, LLC, Martinez Terminal facility was initially permitted by Shell Oil Company in 1978. Transfer of ownership to Equilon Enterprises, LLC in 1986 did not alter the control of the terminal because Shell has an ownership stake in Equilon and Shell corporate staff services the terminal. The Equilon Enterprises, LLC, Martinez terminal is integrated in the Shell Martinez Refinery by connecting and using Shell supporting utilities (e.g. wastewater).

The fact that there are no shared personnel or administrative functions locally between Shell and Equilon weigh against a finding for common control. However, the service provided by Equilon for Shell (loading petroleum products) is controlled by Shell. Equilon only loads petroleum products produced by Shell. If the Shell refinery operation produces less products, or does not

produce petroleum products (e.g. during a process upset or shutdown), Equilon must curtail or cease operations. Therefore, the District has determined that the Equilon Enterprises, LLC, Martinez Terminal should be treated as part of the same "facility" as the Shell Martinez Refinery.

Because it has been determined that the Equilon Enterprises, LLC, Martinez Terminal is part of the Shell Martinez Refinery Title V facility, Equilon Enterprises, LLC, Martinez Terminal must obtain a Title V permit. While Equilon Enterprises, LLC, Martinez Terminal may obtain its own permit (rather than be included in Shell's Title V permit), as it has chosen, the applicable requirements that would otherwise be required under a single permit for the sources must be included in Equilon Enterprises, LLC, Martinez Terminal individual permit as "a major source may not be divided in a way that changes how it would be subject to or comply with applicable requirements compared with what would otherwise occur if a single title V permit were issued to that major source." *See* Memorandum from John S. Seitz, EPA, *Major Source Determinations for Military Installations under the Air Toxics, New Source Review, and Title V Operating Permit Programs of the Clean Air Act,* August 2, 1996. For these reasons, the District has determined that the Equilon Enterprises, LLC, Martinez Terminal Title V permit must include the regulatory requirements that would otherwise apply to the Martinez Terminal if it was included as part of the Shell refinery's Title V permit.

The following section includes the applicability determinations for this facility.

Regulation 8, Rule 2, Miscellaneous Operations

The Equilon Enterprises, LLC Martinez Terminal is subject to Regulation 8, Rule 2, Miscellaneous Operations because the plant includes equipment that routinely vents to atmosphere and this operation is not limited by other Rules in Regulation 8, Regulation 10 or Regulation 12, Rule 12. Regulation 8-2-301 limits any discharge into the atmosphere to 15 lb/day and to a concentration of 300 ppm total carbon on a dry basis.

Regulation 8, Rule 5 -- Storage of Organic Liquids

The Equilon Enterprises, LLC Martinez Terminal owns and operates the following organic liquid storage tanks:

S-4	8,000 Gallon Underground Slop Tank
S-6	500 Gallon Transportable Container
S-7	500 Gallon Transportable Container
S-8	500 Gallon Transportable Container
S-9	500 Gallon Transportable Container

In Condition 24738, Part 3, the 500 gallon containers are limited to storing materials with a true vapor pressure at or below 0.50 psia. Therefore, these sources qualify for Regulation 8-5-117 Limited Exemption, Low Vapor Pressure. Only Regulation 8-5-307.3 is applicable to the four 500 gallon containers.

S-4 Slop Tank is permitted for high vapor pressure materials. Therefore, S-4 is subject to Regulation 8, Rule 5. S-4 is also subject to Regulation 8, Rule 33. The Regulation 8, Rule 5 emissions standards, administrative, recordkeeping and procedure requirements that are applicable to S-4 Slop Tank are as follows:

- Regulation 8-5-301, Storage Tanks Control Requirements
- Regulation 8-5-302, Requirements for Submerged Fill Pipes
- Regulation 8-5-303, Requirements for Pressure Vacuum Valves
- Regulation 8-5-306, Requirements for Approved Emission Control Systems
- Regulation 8-5-307, Requirements for Fixed Roof Tanks, Pressure Tanks and Blanketed Tanks
- Regulation 8-5-328, Tank Degassing Requirements
- Regulation 8-5-331, Tank Cleaning Requirements
- Regulation 8-5-403, Inspection Requirements for Pressure Relief Devices
- Regulation 8-5-404, Inspection, Abatement Efficiency Determination and Source Test Reports
- Regulation 8-5-501, Records
- Regulation 8-5-502, Source Test Requirements
- Regulation 8-5-602, Analysis of Samples, True Vapor Pressure
- Regulation 8-5-603, Determination of Abatement Efficiency
- Regulation 8-5-604, Determination of Applicability Based on True Vapor Pressure
- Regulation 8-5-605, Measurement of Leak Concentrations and Residual Concentrations
- Regulation 8-5-606, Analysis of Samples, Tank Cleaning Agents

Regulation 8, Rule 6 -- Organic Liquid Bulk Terminals and Bulk Plants

The Equilon Enterprises, LLC Martinez Terminal is subject to Regulation 8, Rule 6, because it operates truck loading station S-5 that loads ethanol, a regulated organic materials other than gasoline. However, the ethanol is blended into the gasoline to meet product specifications. Sole ethanol loading is performed infrequently and only to 'top off' a truck in the event that a quality control test of the truck contents shows low ethanol content. Therefore, ethanol loading operations qualify for Regulation 8-6-115 Exemption, Bulk Gasoline Distribution Facilities. Diesel is also loaded, but as long as the temperature of Diesel fuel does not exceed 230F, the true vapor pressure is below 0.50 psia. Therefore Diesel loading operations qualify for Regulation 8-6-110 Exemption, Low Vapor Pressure Organic Liquids.

Regulation 8, Rule 8 -- Wastewater Collection and Separation Systems

The Equilon Enterprises, LLC Martinez Terminal is located on property owned by or adjacent to the Shell Martinez Refinery. The Shell Martinez Refinery owns and operates a refinery wastewater collection and treatment system. The Equilon Enterprises, LLC Martinez Terminal uses this refinery wastewater system. The terminal wastewater is collected and discharged into the oil-water separator located at the east end of the terminal. From there wastewater is pumped to the Shell Martinez Refinery LOG API Separator S-1469. Therefore, the Equilon Enterprises, LLC Martinez Terminal is subject to Regulation 8, Rule 8 Wastewater Collection and Separation Systems as described in Regulation 8-8-101, Description:

> **8-8-101 Description**: The purpose of this Rule is to limit the emissions of organic compounds from wastewater collection and separation systems that handle liquid organic compounds from industrial processes.

Wastewater components are defined in Regulation 8-8-200 Definitions. There are two types of wastewater components that are subject to Regulation 8, Rule 8. The first type are the components on the Equilon Enterprises, LLC Martinez Terminal Site. The second type are the components not on the Equilon Enterprises, LLC Martinez Terminal Site. However, the Equilon Enterprises, LLC Martinez Terminal does not operate the off-site components. This distinction is key in the determination of the applicable requirements.

The on-site wastewater components and the reference definition are as follows:

- Junction Box, Regulation 8-8-217
- Lift Stations, Regulation 8-8-221
- Manholes, Regulation 8-8-222
- Oil-Water Separation Trench, Regulation 8-8-223
- Process Drains, Regulation 8-8-225
- Reaches, Regulation 8-8-226
- Sewer Line, Regulation 8-8-218
- Trenches, Regulation 8-8-228
- Vent Pipes, Regulation 8-8-229

The off-site wastewater components and the reference definition are as follows:

- Air Flotation Unit, Regulation 8-8-209
- Oil-Water Separator Effluent, Regulation 8-8-214
- Oil-Water Separator Effluent Channel/Pond, Regulation 8-8-206
- Oil-Water Separator Slop Oil Vessel, Regulation 8-8-213
- Pre-Air Flotation Unit Flocculation Sump, Basin, Chamber, or Tank, Regulation 8-8-212
- Secondary Treatment Processes, Regulation 8-8-208
- Sludge-dewatering Unit, Regulation 8-8-215
- Wastewater (Oil-Water) Separator, Regulation 8-8-202

The Regulation 8, Rule 8 emissions standards and recordkeeping requirements that are applicable to the on-site components are as follows:

- Regulation 8-8-303, Gauging and Sampling Devices
- Regulation 8-8-306, Oil-Water Separator Effluent Channel, Pond, Trench, or Basin
- Regulation 8-8-308, Junction Box
- Regulation 8-8-503, Inspection and Repair Records

The Regulation 8, Rule 8 emission standards that are applicable to the offsite treatment of the wastewater are as follows:

- Regulation 8-8-301, Wastewater Separators Greater than 760 Liters per Day and Smaller than 18.9 Liters per Second
- Regulation 8-8-304, Sludge-dewatering Unit
- Regulation 8-8-305, Oil-Water Separator And/Or Air Flotation Unit Slop Oil Vessels
- Regulation 8-8-307 Air Flotation Unit

However, since the Equilon Enterprises, LLC Martinez Terminal does not own or operate these offsite equipment, Equilon Enterprises, LLC is not subject to these standards.

In addition, since the Equilon Enterprises, LLC Martinez Terminal is a support facility of a Petroleum Refinery as defined in Regulation 8-8-224, the following emission standards, administrative requirements and recordkeeping requirements also apply to the Equilon Enterprises, LLC wastewater:

- Regulation 8-8-312, Controlled Wastewater Collection System Components at Petroleum Refineries
- Regulation 8-8-313, Uncontrolled Wastewater Collection System Components at Petroleum Refineries
- Regulation 8-8-314, New Wastewater Collection System Components at Petroleum Refineries
- Regulation 8-8-402, Wastewater Inspection and Maintenance Plan at Petroleum Refineries
- Regulation 8-8-403, Petroleum Refinery Compliance Schedule
- Regulation 8-8-404, Uncontrolled Wastewater Collection System Components Election
- Regulation 8-8-505, Records for Wastewater Collection System Components at Petroleum Refineries

<u>Regulation 8, Rule 18 -- Equipment Leaks</u>

The Equilon Enterprises, LLC Martinez Terminal is subject to Regulation 8, Rule 18, Equipment Leaks, which limits emissions of organic compounds and methane from leaking equipment at petroleum refineries, chemical plants, bulk plants and bulk terminals. The type of equipment covered in this regulation are valves, connectors, pumps, compressors, pressure relief devices, diaphragms, hatches, sight-glasses, fittings, sampling ports, meters, pipes, and vessels. The specific reference definitions are as follows:

- Regulation 8-18-204, Connection
- Regulation 8-18-214, Pressure Relief Device
- Regulation 8-18-218, Rupture Disc
- Regulation 8-18-221, Valve

The emission standards that are applicable to the Equilon Enterprises, LLC Martinez Terminal are as follows:

- Regulation 8-18-301, General
- Regulation 8-18-302, Valves
- Regulation 8-18-303, Pumps and Compressors
- Regulation 8-18-304, Connections
- Regulation 8-18-305, Pressure Relief Devices

In addition, the administrative, monitoring and recordkeeping requirements are as follows:

- Regulation 8-18-401, Inspection
- Regulation 8-18-402, Identification
- Regulation 8-18-403, Visual Inspection Schedule
- Regulation 8-18-404, Alternate Inspection Schedule
- Regulation 8-18-502, Records
- Regulation 8-18-503, Reports

Regulation 8, Rule 28 -- Episodic Releases from Pressure Relief Devices at Petroleum Refineries and Chemical Plants

The Equilon Enterprises, LLC Martinez Terminal is subject to Regulation 8, Rule 28, which prevents episodic emissions of organic compounds from pressure relief devices. Equilon Enterprises, LLC is subject to Regulation 8, Rule 28 because the Martinez Terminal is a support facility of, a Petroleum Refinery as defined in Regulation 8-28-209. Further, as explained above, this facility was originally owned and operated by a company whose parent company is the same as that of the petroleum refinery. The Martinez Terminal continues to be integrated into the petroleum refinery operation. Products loaded at the Martinez Terminal are stored in and delivered from the petroleum refinery and materials received at the Martinez Terminal (e.g. ethanol) are delivered to and stored at the petroleum refinery.

The majority of relief valves at the Martinez Terminal are thermal relief valves that are vented to process drains. These relief valves are exempt from Regulation 8, Rule 28, pursuant to Regulation 8-28-115 Exemption, Thermal Relief Valves.

A review of the Terminal drawings revealed that there are two relief valves located downstream of the carbon vessels used to abate the loading racks and at least one relief valve located on the gas feed line to the carbon beds. Normally, when the carbon system is operating correctly, the gas at these relief valve would contain very low levels of hydrocarbons. There is potential for the carbon system to malfunction causing high hydrocarbon content, but this malfunction itself would not cause a overpressure situation. Therefore, it is very unlikely that a Release Event as defined in Regulation 8-28-214 would occur. However, relief valves upstream of the carbon beds contain organic material and could cause a release event.

The following emission standards are applicable to the Equilon Enterprises, LLC Martinez Terminal.

- Regulation 8-28-302, Pressure Relief Devices at New or Modified Sources at Petroleum Refineries. The modification that triggers this standard was completed in 1986 when the A-2 Carbon Vapor Recovery System was added (Application 31461).

The administrative, monitoring and recordkeeping requirements applicable to the Equilon Enterprises, LLC Martinez Terminal are as follows:

- Regulation 8-28-402, Inspection
- Regulation 8-28-404, Identification
- Regulation 8-28-405, Process Safety Requirements
- Regulation 8-28-406, Monitoring System Demonstration Report
- Regulation 8-28-407, Process Unit Identification Report
- Regulation 8-28-502, Records
- Regulation 8-28-503, Monitoring

Regulation 8, Rule 33 -- Gasoline Bulk Terminals and Gasoline Cargo Tanks

The Equilon Enterprises, LLC Martinez Terminal is subject to Regulation 8, Rule 33, because it operates truck loading stations that load gasoline. The Equilon Enterprises, LLC Martinez Terminal is a Gasoline Bulk Terminal as defined in Regulation 8-33-203.

The Regulation 8, Rule 33 emissions standards, administrative, recordkeeping and procedure requirements that are applicable to S-1, S-2, S-3 and S-5 Truck Loading Racks are as follows:

- Regulation 8-33-301, Final Gasoline Bulk Terminal Limitations
- Regulation 8-33-303, Bottom Fill Requirement
- Regulation 8-33-304, Gasoline Cargo Tank Requirements
- Regulation 8-33-305, Gasoline Bulk Terminal Equipment Maintenance and Repair
- Regulation 8-33-306, Operating Practices
- Regulation 8-33-307, Loading Practices
- Regulation 8-33-308, Vapor Storage Tank Requirements
- Regulation 8-33-309, Gasoline Bulk Terminal Vapor Recovery System Requirements
- Regulation 8-33-401, Equipment Installation and Modification
- Regulation 8-33-403, Bulk Terminal Monitoring, Inspection, Notification and Reporting Requirements
- Regulation 8-33-501, Burden of Proof
- Regulation 8-33-502, Vapor Storage Tank Emissions Records
- Regulation 8-33-503, Annual Source Test:
- Regulation 8-33-504, Pressure/Vacuum Valve, Liquid Fill and Vapor Hose Connector Leak Check Records

- Regulation 8-33-505, Loading Rack Backpressure Records
- Regulation 8-33-506, Parametric Correlation Records
- Regulation 8-33-507, Parametric Variable Monitoring Records
- Regulation 8-33-601, Emission Rate Determination
- Regulation 8-33-603, Back Pressure Determination from Vapor Recovery Systems
- Regulation 8-33-604, Vapor Tight (Gasoline Cargo Tanks)
- Regulation 8-33-605, Analysis of Samples
- Regulation 8-33-606, Vapor Leak Concentration Determination

Regulation 9, Rule 1 -- Sulfur Dioxide

The Equilon Enterprises, LLC Martinez Terminal is permitted to operate A-3 Portable Thermal Oxidizer. This device combusts waste gas from the truck loading operations using natural gas as a fuel. Both the waste gas and natural gas are expected to be low in sulfur content. However, this source has a potential to emit sulfur dioxide and is subject to the requirements of Regulation 9, Rule 1. The emission standards that are applicable to the Equilon Enterprises, LLC Martinez Terminal are as follows:

- Regulation 9-1-301, Limitations on Ground Level Concentrations
- Regulation 9-1-302, General Emission Limitation

The administrative, monitoring and recordkeeping requirements applicable to the Equilon Enterprises, LLC Martinez Terminal are only Regulation 9-1-501, Area Monitoring Requirements, upon request of the APCO.

Regulation 9, Rule 2 -- Hydrogen Sulfide

The Equilon Enterprises, LLC Martinez Terminal is permitted to operate several devices that abate the emissions from the Truck Loading Operations. One of these, A-3 Portable Thermal Oxidizer, combusts waste gas from the truck loading operations using natural gas as a fuel. Both the waste gas and natural gas are expected to be low in hydrogen sulfide content. However, this facility has a potential to emit hydrogen sulfide and is subject to the requirements of Regulation 9, Rule 2. The emission standards that are applicable to the Equilon Enterprises, LLC Martinez Terminal are as follows:

- Regulation 9-2-301, Limitations on Hydrogen Sulfide

The APCO may require Equilon Enterprises, LLC Martinez Terminal to comply with the administrative, monitoring and recordkeeping requirements applicable of Regulation 9-2-501, Area Monitoring Requirements.

40 CFR 60 Subpart K, Ka and Kb, Standards of Performance for Storage Vessels.

The Equilon Enterprises, LLC Martinez Terminal is potentially subject to 40 CFR 60 Subpart K, Ka and Kb because the facility has equipment that stores petroleum or organic liquids.

The S-4 8,000 Gallon Slop Tank was originally constructed in 1978. Since the Authority to Construct was granted 12/13/1978, S-4 is subject to 40 CFR 60 Subpart Ka, Standards of Performance for Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984. However, the S-4 storage capacity is less than 40,000 gallons. Therefore, the Equilon Enterprises, LLC Martinez Terminal is not an affected facility pursuant to 60.110a(a).

The S-6, S-7, S-8 and S-9 500 Gallon Transportable Containers were originally constructed in 2010. Therefore, these storage vessels are potentially subject to Subpart Kb—Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984. However, pursuant to 60.110b(a), Subpart Kb only applies to containers with a capacity greater than or equal to 75 cubic meters (19,800 gallons). Since S-6, S-7, S-8 and S-9 all have a capacity less than 19,800 gallons, they are not subject to Subpart Kb.

40 CFR 60 Subpart J and Ja-- NSPS Petroleum Refineries

The Equilon Enterprises, LLC Martinez Terminal is potentially subject to 40 CFR 60, Subpart J or Ja because A-3 Thermal Oxidizer is a fuel gas combustion device as defined in 40 CFR 60.101(g) or 60.101a. Since A-3 was constructed after May 14, 2007, Subpart Ja is the NSPS that is applicable. The A-3 Thermal Oxidizer is placed in service infrequently. Periodically, when the primary abatement A-2 Carbon System can no longer be regenerated, it has to be taken out of service for carbon bed replacement. This is when A-3 is placed in service. This carbon bed replacement takes about a week, and normally occurs on a 5-year frequency. However, when A-4 is in service, it is subject to the requirement of Subpart Ja. The Emissions Limitations applicable to A-3 is 40 CFR 60.102a(g). 40 CFR 60.102a(g)(1)(ii) limits the H2S content of the gas abated in A-3 to 162 ppmv 3-hour average and 60 ppmv 365-day average. Monitoring requirements are detailed in 40 CFR 60.107a(a)(2).

40 CFR 60 Subpart GGG -- NSPS for Equipment Leaks in Petroleum Refineries
40 CFR 60 Subpart VV -- NSPS SOCM Equipment Leaks

The Equilon Enterprises, LLC Martinez Terminal is potentially subject to 40 CFR 60, Subpart GGG. 60.590(a)(3) defines the affected facility as all equipment within a process unit, and 60.591 specifically includes product transfer racks in the definition of a Process Unit. Even though the Martinez Terminal product transfer racks are physically located separate from the refinery process unit(s) that produce the petroleum products, they are still considered part of the affected unit. S-1, S-2, S-3 and S-4 were originally placed in service in 1979. Therefore, these sources are not subject to Subpart GGG because they were constructed prior to January 4, 1983. However, S-5 was modified in 2000 to load gasoline. Therefore, S-5 is subject to Subpart GGG.

The Standards of 40 CFR 60.592 require compliance with 40 CFR 60 Subpart VV §§ 60.482-1 to 60.482-10. These standards are as follows:

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

The Equilon Enterprises, LLC Martinez Terminal is also subject to 40 CFR 60 Subpart VV indirectly through 40 CFR 63.648 (see Applicability Determination for 40 CFR 63 Subpart CC below).

40 CFR 60 Subpart XX, NSPS for Bulk Gasoline Terminals

The Equilon Enterprises, LLC Martinez Terminal is potentially subject to 40 CFR 60 Subpart XX because the facility receives gasoline by pipeline, ship or barge and has a gasoline throughput which exceeds 75,700 liters/day (19,998 gal/day). Therefore, it is a Bulk Gasoline Terminal as defined in 40 CFR 60.501.

In 1999 Application 100, the applicability of Subpart XX was addressed in the engineering evaluation:

NSPS for Bulk Gasoline Terminals (40 CFR 60, Subpart XX)

This NSPS applies to any facility which receives gasoline by pipeline, ship or barge and has a gasoline throughput which exceeds 75,700 l/day (19,998 gal/day) AND for which construction or modification commenced after December 17, 1980. Modification is not defined in this subpart, so the definition in Subpart A ("General Provisions") is applicable: "...any physical change in, or change in the method of operation of, an existing facility which increases the amount of any air pollutant ... emitted ..." The existing gasoline loading lanes were previously permitted as part of the Shell Martinez distribution facility (Plant 3694, S-1, S-2, S-3), and were originally permitted as part of the Shell Martinez Refinery complex (Plant 11, S-1701, S-1702, S-1703). Plant 11 data forms indicate that these lanes were first operated in 1979 and that they were modified on May 27, 1981. Therefore, these lanes will be considered to be subject to the NSPS. Although Equilon has argued that the new S-5 loading lane does not represent additional emissions because the total number of gasoline loading arms will not increase, because the original arms are subject to the NSPS, the new loading lane will be as well. The NSPS emission standard in section 60.502(b) is 35 mg/l (0.292 lb/1,000 gal). The standard of section 60.502(c) is not applicable because the A-1 adsorber was installed in 1986 (Application 31461). The emission limit in Regulation 8, Rule 33 is lower than this and therefore compliance with the NSPS is assumed.

The potential requirements applicable to S-1, S-2, S-3 and S-5 are the following:

- § 60.502 Standard for Volatile Organic Compound (VOC) emissions from bulk gasoline terminals
- § 60.503 Test methods and procedures
- § 60.505 Reporting and recordkeeping.

The primary emission standard for S-1, S-2, S-3 and S-5 is 35 milligrams of total organic compounds per liter of gasoline (0.29 lb/gallon) loaded pursuant to 60.502(b). The testing requirements for S-1, S-2, S-3 and S-5 are 60.503(c). The reporting and recordkeeping requirements are 60.505(a) through 60.505(f).

However, the Equilon Enterprises, LLC Martinez Terminal is also subject to 40 CFR 63, Subpart CC. 40 CFR 63.640 contains details of the requirements when there is overlap with other regulations. The requirements for the Equilon Enterprises, LLC Martinez Terminal are specified in 63.640(r):

> 63.640(r) Overlap of subpart CC with other regulations for gasoline loading racks. After the compliance dates specified in paragraph (h) of this section, a Group 1 gasoline loading rack that is part of a source subject to subpart CC and also is subject to the provisions of 40 CFR part 60, subpart XX is required to comply only with this subpart.

Therefore, the Equilon Enterprises, LLC Martinez Terminal is not directly subject to 40 CFR 60, Subpart XX. Because the Terminal gasoline loading rack is subject to both 40 CFR 60, Subpart XX and 40 CFR 63, Subpart CC, the Facility must comply with the requirements 40 CFR 63.350, which list specific requirements set forth in 40 CFR 60, Subpart XX, 40 CFR 63, Subpart R, and 40 CFR 63.422 that are applicable to this source. These requirements are detailed in the Applicability Determination for 40 CFR 63, Subpart R below.

40 CFR 60 Subpart QQQ -- NSPS Refinery Wastewater Systems

The Equilon Enterprises, LLC Martinez Terminal wastewater is collected and sent to the Shell Martinez Refinery for treatment. Therefore, the Equilon Enterprises, LLC Martinez Terminal is potentially subject to 40 CFR 60, Subpart QQQ.

The Equilon Enterprises, LLC Martinez Terminal was originally constructed in 1979. S-5 was modified in 2000, but the drain system was not modified. However, the drain system is part of the Shell Martinez Refinery Aggregate Facility as defined in 40 CFR 60.691. According to Note (5) of Table IV-IIII of the Shell Martinez Refinery Title V permit, the Shell Martinez Refinery wastewater system that is subject to 40 CFR 60 Subpart QQQ is the individual drain system installed for the Clean Fuels Units. The Equilon Enterprises, LLC Martinez Terminal wastewater system is not subject to 40 CFR 60 Subpart QQQ because it was not installed as part of the Clean Fuels Units and does not connect into the wastewater system installed for the Clean Fuels Units.

40 CFR 61 Subpart J -- NESHAPS Benzene Equipment Leaks

The Equilon Enterprises, LLC Martinez Terminal is potentially subject to 40 CFR 61 Subpart J because the facility loads products that contain benzene. However, in Benzene Service, as defined in 40 CFR 61.111 is equipment that contains or contacts a fluid that is at least 10% benzene by weight. No product loaded is expected to contain benzene in quantities of 10% or higher, therefore the requirements of 40 CFR 61 Subpart J are not applicable.

40 CFR 61 Subpart V -- NESHAPS Equipment Leaks

The Equilon Enterprises, LLC Martinez Terminal is potentially subject to 40 CFR 61 Subpart V because the facility has equipment in volatile hazardous air pollutant (VHAP) service. In VHAP service, as defined in 40 CFR 61.241, is equipment that contains or contacts a fluid that is at least 10% VHAP by weight. VHAP is defined as in 40 CFR 60.241 as any substance regulated by Part 61. The list of pollutants designed as hazardous air pollutants are listed in 40 CFR 61.01. Gasoline is expected to have a total VHAP content of 24%. Therefore, the Equilon Enterprises, LLC Martinez Terminal is subject to 40 CFR 61 Subpart V. However, the Martinez Terminal is also subject to 40 CFR 63 Subpart CC. Pursuant to 40 CFR 63.640(p)(1), equipment leaks that are subject to the provisions of 40 CFR Parts 60 and 61 (excluding 63.640(p)(2), those that are subject to Part 60 Subpart GGGa) are only required to comply with the provisions of 40 CFR 63 Subpart CC. Therefore, the Equilon Enterprises, LLC Martinez Terminal is not subject to 40 CFR 61 Subpart V.

40 CFR 61 Subpart FF -- NESHAPS Benzene Waste Operations

The Equilon Enterprises, LLC Martinez Terminal is potentially subject to 40 CFR 61 Subpart FF because the facility has equipment that produces a waste stream as defined in 40 CFR 61.341 that contains benzene.

The Equilon Enterprises, LLC Martinez Terminal is subject to the following standards:

§61.342 Standards: General
§61.343 Standards: Tanks
§61.345 Standards: Containers
§61.346 Standards: Individual drain systems
§61.347 Standards: Closed-vent systems and control devices
§61.350 Standards: Delay of repair

The Equilon Enterprises, LLC Martinez Terminal is also subject to 40 CFR 61 Subpart FF indirectly through 40 CFR 63.647 (see Applicability Determination for 40 CFR 63 Subpart CC below).

40 CFR 63 Subpart R, NESHAPs for Gasoline Distribution Facilities (Bulk Gasoline Terminals and Pipeline Breakout Stations)

The Equilon Enterprises, LLC Martinez Terminal is potentially subject to 40 CFR 63 Subpart R because the facility receives gasoline by pipeline, ship or barge and has a gasoline throughput which exceeds 75,700 liters/day (19,998 gal/day). Therefore, it is a Bulk Gasoline Terminal as defined in 40 CFR 63.421.

However, pursuant to 63.420(a)(i), the Equilon Enterprises, LLC Martinez Terminal is not directly subject to Subpart R because the facility has a Standard Industrial Classification code 2911 and is located within a contiguous area and under common control with a refinery complying with subpart CC. The Shell Martinez Refinery does comply with MACT CC. Therefore, the Equilon Enterprises, LLC Martinez Terminal is indirectly subject to Subpart R as specified in 40 CFR 63.650. The requirements are specified in 63.650(a):

> 63.650(a) Except as provided in paragraphs (b) through (c) of this section, each owner or operator of a Group 1 gasoline loading rack classified under Standard Industrial Classification code 2911 located within a contiguous area and under common control with a petroleum refinery shall comply with subpart R, §§ 63.421, 63.422(a) through (c) and (e), 63.425(a) through (c) and (i), 63.425(e) through (h), 63.427(a) and (b), and 63.428(b), (c), (g)(1), (h)(1) through (3), and (k).

The details or the 40 CFR 63, Subpart R requirements follow:

- §63.421 contains definitions.
- §63. 422(a) requires compliance with NSPS Subpart XX §60.502 except (b), (c), and (j). Each applicable NSPS Subpart XX section is addressed below:
    - §60.502(a) - Requires a vapor collection system
    - §60.502(d) - No transfer of vapors between loading racks
    - §60.502(e) - Only load vapor tight tank trucks per following requirements:
    - §60.502(e)(1) - Obtain vapor tightness documentation
    - §60.502(e)(2) - Record truck numbers loaded
    - §60.502(e)(3) - Cross check to ensure only vapor tightness documented trucks loaded
    - §60.502(e)(4) - Notification of loading of non-vapor tight documented truck
    - §60.502(e)(5) - Ensure non-vapor tight documented truck not reloaded until vapor tight documentation obtained
    - §60.502(e)(6) - Alternate procedures allowed – not applicable. Equilon does not use the alternate procedures
    - §60.502(f) - Only load truck with compatible equipment
    - §60.502(g) - Ensure vapor collection hooked up for each load
    - §60.502(h) - System designed and operated to prevent pressure in delivery tank from exceeding 450 mm of water
    - §60.502(i) - No pressure vent opens before 450 mm of water
- §63. 422(b) contains the emissions standard not exceed 10 milligrams of total organic compounds per liter of gasoline loaded (0.08 lb/1000gallons)
- §63. 422(c) requires that steps are taken to ensure non-vapor tight trucks are not reloaded until vapor tight documentation is obtained
- §63. 422(e) provides an alternative method of compliance with 40 CFR Part 60 Subpart XX, §60.502(h) and (i). This section is not applicable Equilon is not currently using this alternative compliance method.
- §63. 425(a), (b), and (c) address the testing required to verify the performance of the vapor control system
- §63. 425(e) through (h) address test methodology applicable to the cargo tanks for vapor tight certification
- §63. 425(i) addresses railcar bubble leak test procedures. This section is not applicable to Equilon's loading rack because it is not capable of loading gasoline into railcars
- §63. 427(a) and (b) address required performance monitoring systems for the vapor control system
- §63. 428(b) requires recordkeeping of cargo tank vapor tightness documentation
- §63. 428(c) addresses required performance monitoring recordkeeping for the vapor control system
- §63. 428(g)(1) requires semiannual reporting of loading into cargo tanks that have not provided vapor tightness documentation prior to loading
- §63. 428(h)(1) requires reporting on vapor control system monitoring exceedances or failure to monitor

- §63. 428(h)(2) requires reporting of instances where a non-vapor tight cargo tank was loaded and the owner or operator failed to take steps to assure that the cargo tank would not be re-loaded until vapor tightness documentation was obtained
- §63. 428(h)(3) requires reporting of instances where a non-vapor tight cargo tank was reloaded prior to obtaining vapor tightness documentation
- §63. 428(k) provides an alternative to keeping records required under Subpart R, §63.428(b). This section is not applicable Equilon is not currently using this alternative recordkeeping method.

40 CFR 63 Subpart CC -- Refinery MACT

The Equilon Enterprises, LLC Martinez Terminal is subject to 40 CFR 63 Subpart CC because the facility is a support facility for, and is, a major source as defined in 40 CFR 63 Subpart A, and it emits one or more hazardous air pollutants that are listed in Table 1 of Subpart CC.

The affected sources subject to Subpart CC are the following emission points listed in 40 CFR 63.640(c):

1. All miscellaneous process vents from petroleum refining process units
2. All storage vessels associated with petroleum refining process units
3. All wastewater streams and treatment operations associated with petroleum refining process units
4. All equipment leaks from petroleum refining process units
5. All gasoline loading racks classified under Standard Industrial Classification code 2911
6. All marine vessel loading operations located at a petroleum refinery
7. All storage vessels and equipment leaks associated with a bulk gasoline terminal or pipeline breakout station
8. All heat exchange systems, as defined in this subpart.

Equilon does not have emission points described in #6 and #8.

Emission points described in #1, #2, #3 and #4 are associated with petroleum refining process units. A Petroleum Refinery Process Unit is defined in 63.641 as follows:

> *Petroleum refining process unit* means a process unit used in an establishment primarily engaged in petroleum refining as defined in the Standard Industrial Classification code for petroleum refining (2911), and used primarily for the following:
> (1) Producing transportation fuels (such as gasoline, diesel fuels, and jet fuels), heating fuels (such as kerosene, fuel gas distillate, and fuel oils), or lubricants;
> (2) Separating petroleum; or
> (3) Separating, cracking, reacting, or reforming intermediate petroleum streams.
> (4) Examples of such units include, but are not limited to, petroleum-based solvent units, alkylation units, catalytic hydrotreating, catalytic hydrorefining, catalytic hydrocracking, catalytic reforming, catalytic cracking, crude distillation, lube oil processing, hydrogen production, isomerization, polymerization, thermal processes, and blending, sweetening, and treating processes. Petroleum refining process units also include sulfur plants.

The Martinez Terminal blends ethanol into gasoline products, which is an example of petroleum refining and thus, the facility is a petroleum refining process unit. Emission points listed in #2, #3 and #4 are at the Martinez Terminal. However, in the case of Emission Point #1, the Miscellaneous Process Vent at the terminal is the same as Emissions Point #5. While the 63.641 definition of Miscellaneous Process Vent does not specifically exclude discharges from gasoline loading racks, it can be logically interpreted that the intention was to apply the Gasoline Loading Rack provisions to this emission point. Therefore, Equilon does not have emissions point #1 either.

Therefore, the standards and monitoring requirements that are potentially applicable to the Equilon Enterprises, LLC Martinez Terminal are the following:

§ 63.642 General standards.
§ 63.646 Storage vessel provisions.
§ 63.647 Wastewater provisions.
§ 63.648 Equipment leak standards.
§ 63.650 Gasoline loading rack provisions

The only storage vessel in the Equilon Enterprises, LLC Martinez Terminal is the 8,000 Gallon Slop Tank. Since the storage capacity of this tank is less than 76 cubic meters (20,077 gallons), S-4 Slop Tank is a Group 2 Storage Vessel as defined in 40 CFR 63.641. There are no standards in 40 CFR 63.646 for Group 2 Storage Vessels.

The Equilon Enterprises, LLC Martinez Terminal contributes wastewater to the Shell Petroleum Refinery wastewater system that has a total benzene loading of 10 Mg/yr or greater, has a flow rate of 0.02 liters per minute or greater, and a benzene concentration of 10 ppm or greater. It is therefore a Group 1 Wastewater Stream as defined in 40 CFR 63.641. Equilon contributes wastewater to this refinery wastewater system, therefore, the standards of 40 CFR 63.647 apply. Although it is unknown if the equipment in the Equilon Enterprises, LLC Martinez Terminal generates wastewater that meets the Group 1 definition alone, this information would not be important because Equilon is located on property adjacent to the refinery, uses the refinery wastewater system, and it is the comingled stream in the wastewater system itself that meets the Group 1 definition. 40 CFR 63.647 requires compliance with 40 CFR 61 Subpart FF §§ 61.340 through 61.355. As discussed previously, the Equilon Enterprises, LLC Martinez Terminal is already subject to the requirements of 40 CFR 61 Subpart FF.

The requirements of 40 CFR 63.648 Equipment Leak Standards require compliance with the provisions of 40 CFR 60 Subpart VV. As discussed previously, the Equilon Enterprises, LLC Martinez Terminal is already subject to the requirements of 40 CFR 60 Subpart VV through 40 CFR 60 Subpart GGG.

The Equilon Enterprises, LLC Martinez Terminal loading racks are Group 1 Gasoline Loading Racks as defined in 40 CFR 63.641. The requirements of 40 CFR 63.650(a) require compliance with the selected provisions of 40 CFR 63 Subpart R. The Equilon Enterprises, LLC Martinez Terminal Subpart R requirements are detailed in the Applicability Determination for 40 CFR 63, Subpart R above.

40 CFR 63 Subpart EEEE -- Organic Liquids Distribution MACT

The Equilon Enterprises, LLC Martinez Terminal loading racks are potentially subject to 40 CFR 63 Subpart EEEE because non-gasoline products are loaded. These products are Diesel, ethanol and transmix, and they have potential to qualify for In Organic Liquid Service. However, 40 CFR 63.2406 defines "In Organic Liquid Service means that an equipment leak component contains or contacts organic liquids having 5 percent by weight or greater of the organic HAP listed in Table 1 to this subpart". Ethanol is not included in Table 1, and Diesel and transmix do not contain organic HAPs in concentrations greater than 5 percent by weight. In addition, 40 CFR 63.2338(c)(1) excludes storage tanks, transfer racks, transport vehicles, containers, and equipment leak components that are part of an affected source under another 40 CFR part 63 NESHAP. This equipment is subject to 40 CFR 63 Subpart CC. Therefore, the Equilon Enterprises, LLC Martinez Terminal is not subject to the provisions of 40 CFR 63, Subpart EEEE.

40 CFR Part 63 Subpart BBBBBB, NESHAPs for Gasoline Distribution Bulk Terminals, Bulk Plants, and Pipeline Facilities.

The Equilon Enterprises, LLC Martinez Terminal loading racks are potentially subject to 40 CFR 63 Subpart BBBBBB because Hazardous Air Pollutants are emitted. However, 63.11081(a) states that the affected source for Subpart BBBBBB is an area source. 40 CFR Part 63 Subpart A §63.2 defines an area source as any stationary source of hazardous air pollutants that is not a major source. The Equilon Enterprises, LLC Martinez Terminal is a major source as defined in 40 CFR Part 63 Subpart A. Therefore, the Equilon Enterprises, LLC Martinez Terminal is not subject to 40 CFR Part 63 Subpart BBBBBB.

40 CFR 64 -- Compliance Assurance Monitoring (CAM)

The Equilon Enterprises, LLC Martinez Terminal loading racks are potentially subject to 40 CFR 64 Compliance Assurance Monitoring. General applicability is detailed in 40 CFR 64.2(a). The loading racks are subject to CAM because of the following:

(1) The loading racks are subject to a POC emission limitation of 0.0182 lb/1000 gallons in Permit Condition 20973.
(2) The loading racks are abated with A-1 carbon or A-3 thermal oxidizer.
(3) The loading racks have potential pre-control device to emit over 100 tons of POC annually.

Exemptions to 40 CFR 64 that may apply are detailed in 40 CFR 64.2(b). 40 CFR 64.2(b)(1) lists the exempt emission limitations or standards. The NOx emissions limit is not an exempt limitation because:

64.2(b)(1)(i) -- The POC emissions limitation is not a federal requirement proposed by the [EPA] Administrator after November 15, 1990.
64.2(b)(1)(ii) -- The POC emissions limitation is not part of the stratospheric ozone protection requirements of Title VI.
64.2(b)(1)(iii) --The POC emissions limitation is not an Acid Rain Program requirement.

64.2(b)(1)(iv) --The POC emissions limitation is not part of an emissions trading program.
64.2(b)(1)(v) -- The POC emissions limitation is not part of an emissions cap that meets the requirements of 40 CFR 70.4(b)(12) or 71.6(a)(13)(iii).
64.2(b)(1)(vi) -- The POC emissions limitation in which a part 70 or 71 permit specifies a continuous compliance determination method.

Therefore, the Equilon Enterprises, LLC Martinez Terminal is subject to the requirements of 40 CFR 64. However, the Equilon Enterprises, LLC Martinez Terminal is not considered a large pollutant-specific emissions unit because emissions from the loading rack post-control potential-to-emit are below than the major source threshold. Therefore, pursuant to 64.5(b), the information required under §64.4 will be submitted as part of the first Title V permit renewal application when this initial Title V permit is due for renewal.

District permit applications included in this proposed permit

Since Equilon has not submitted any permit applications since submitting the application for a Title V permit, there are no NSR applications included in the proposed permit.

V. Schedule of Compliance

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

"409.10 A schedule of compliance containing the following elements:

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

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

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

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

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. Some conditions may have been deleted because they reiterate an applicable

requirement that is now contained in Section IV, Source-Specific Applicable Requirements. Each permit condition is identified with a unique numerical identifier, up to five digits.

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

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

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

The District has reviewed and, where appropriate, revised or added new annual and daily throughput limits on sources so as to help ensure compliance with District rules addressing preconstruction review. The applicability of preconstruction review depends on whether there is a "modified source" as defined in District Rule 2-1-234. Whether there is a modified source depends in part on whether there has been an "increase" in "emission level." 2-1-234 defines what will be considered an emissions level increase, and takes a somewhat different approach depending on whether a source has previously permitted by the District.

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

Equilon does not have any "grandfathered" sources.

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

Conditions have also been deleted due to the following:

- Redundancy in record-keeping requirements.
- Redundancy in other conditions, regulations and rules.
- The condition has been superseded by other regulations and rules.

- The equipment has been taken out of service or is exempt.
- The event has already occurred (i.e. initial or start-up source tests).

The regulatory basis has been referenced following each condition. The regulatory basis may be a rule or regulation. The District is also using the following codes for regulatory basis:

- BACT: This code 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 code is used for a condition imposed by the APCO which limits a source's operation to the operation described in the permit application pursuant to BAAQMD Regulation 2-1-403.
- Offsets: This code 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 code 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 code is used for a condition imposed by the APCO to ensure compliance with limits that arise from the District's Toxic Risk Management Policy.

Abatement device operating parameter monitoring has been added for each abatement device.

Additional monitoring has been added, where appropriate, to assure compliance with the applicable requirements.

VII. Applicable Limits and Compliance Monitoring Requirements

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

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 when no monitoring is proposed due to the size of a source. In all other cases, the column will have "N/A", meaning "Not applicable".

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

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

A summary of all monitoring is contained in Section VII, Applicable Limits and Compliance Monitoring Requirements, of the permit. The summary includes a citation for each monitoring requirement, frequency, and type. The applicable requirements for monitoring are completely contained in Sections IV, Source-Specific Applicable Requirements, and VI, Permit Conditions, of the permit.

NOX Sources			
S# & Description	**Federally Enforceable Limit Citation**	**Federally Enforceable Limit**	**Monitoring**
S-1, S-2, S-3 and S-5 when abated by A-3 Thermal Oxidizer	BAAQMD Condition #25116, Part 1	50 ppmvd at 15% O2 (0.20 lb/MMBtu)	None

NOx Discussion:

The A-3 Thermal Oxidizer is only used when primary abatement A-2 Carbon Absorption is out of service and thus is a secondary abatement device. The NOx limit is the District's recommended RACT limit for secondary emissions from thermal oxidizers and is required pursuant to District Regulation 2-2-112. The District does not require periodic source testing of A-3. A-3 has a firing capacity of 45MM Btu/hr. For thermal oxidizers over 7.5MM Btu/hr firing capacity, the District requires only an initial source test to verify compliance with RACT limits. (See http://hank.baaqmd.gov/pmt/policies/bact_ract/NOxAndCORACTforTHERMALOXIDIZERS.pdf)

CO Sources			
S# & Description	**Federally Enforceable Limit Citation**	**Federally Enforceable Limit**	**Monitoring**
S-1, S-2, S-3 and S-5 when abated by A-3 Thermal Oxidizer	BAAQMD Condition #25116, Part 2	350 ppmvd at 15% O2 (0.80 lb/MMBtu)	None

CO Discussion:

The A-3 Thermal Oxidizer is only used when primary abatement A-2 Carbon Absorption is out of service. The CO limit is pursuant to District Policy and is a RACT limit for secondary emissions from thermal oxidizers. A-3 has a firing capacity of 45MM Btu/hr. The District Policy for Thermal Oxidizers over 7.5MM Btu/hr firing capacity requires only an initial source test to demonstrate compliance. Periodic source testing is not required.

SO_2 Sources			
S# & Description	**Federally Enforceable Limit Citation**	**Federally Enforceable Limit**	**Monitoring**
Facility	BAAQMD 9-1-301	GLC of 0.5 ppm for 3 min. or 0.25 ppm for 60 min. or 0.05 ppm for 24 hours	Area Monitoring (Note 2)

Note 1: All facility combustion sources are subject to the SO2 emission limitations in District Regulation 9, Rule 1 (ground-level concentration and emission point concentration). Area monitoring to demonstrate compliance with the ground level SO2 concentration requirements of Regulation 9-1-301 has been required by the APCO (per BAAQMD Regulation 9-1-501) for the refinery, but not specifically to Equilon. The APCO has not required monitoring by Equilon because it is located adjacent to the refinery and has a low likelyhood of emitting SO2 since fuel gas is natural gas.

Note 2: All facility combustion sources are subject to the SO2 emission limitations in District Regulation 9, Rule 1 (ground-level concentration and emission point concentration). In EPA's June 24, 1999 agreement with CAPCOA and ARB, "Periodic Monitoring Recommendations for Generally Applicable Requirements in SIP", EPA has agreed that gaseous-fueled combustion sources do not need additional monitoring to verify compliance with Regulation 9, Rule 1, since violations of the regulation are unlikely. Therefore, no monitoring is necessary for this requirement.

PM Sources			
S# & Description	**Federally Enforceable Limit Citation**	**Federally Enforceable Limit**	**Monitoring**
None			

POC Sources			
S# & Description	**Federally Enforceable Limit Citation**	**Federally Enforceable Limit**	**Monitoring**
None			

VIII. Test Methods

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

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

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 that identifies and justifies specific federally enforceable regulations and standards which the APCO has confirmed are not applicable to a source or group of sources, or (2) A provision in a major facility review permit that identifies and justifies specific federally enforceable applicable requirements for monitoring, recordkeeping and/or reporting which 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.

Compliance with the applicable requirement contained in the permit automatically results in compliance with any subsumed (= less stringent) requirement.

No provisions of any rule have been identified or proposed for any source as requirements for which the applicant seeks a permit shield, and no permit shield is included in the proposed permit.

This facility has no permit shields.

D. Alternate Operating Scenarios:

No alternate operating scenario has been requested for this facility.

E. Compliance Status:

As part of the permit application, the owner certified that all equipment was operating in compliance on February 9, 2010, except for two fuel additive containers. Equilon submitted Permit Application 21877 on April 23, 2010 to address the compliance of these containers.

F. Differences between the Application and the Proposed Permit:

Differences related to sources and abatement devices included in the application are explained in Section C.II of this evaluation.

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APPENDICES

Appendix A – Engineering Evaluations

The following Appendix contains the engineering evaluations for the Permit Applications that were submitted by Equilon since the Shell Martinez Refiner Title V Permit was issued December 1, 2003.

Application 12976, A-2 Vapor Recovery System Modification

1.0 BACKGROUND

Equilon Enterprises LLC (Equilon) submitted this application to obtain a Permit to Operate (P/O) for modifications they plan to make to the following abatement device:

A-2 Vapor Recovery System, Carbon Adsorption/Absorption, John Zink AA-825-5-15B, 200 CFM

In addition to the proposed modifications to the vapor recovery system, the District will also make following change to Equilon's permit to operate:

- **Reactivate A-1 (John Zink Portable Vapor Combustor) as it is erroneously archived in the District's databank.**

- **Correct Permit Condition Number 20973 Part 4 to change the POC emission rate from 0.0068 lb/1000 gallons to 0.0182 lb/1000 gallons of product loaded.**

Equilon is proposing to modify the vapor recovery unit to increase the size of the carbon vessels on the existing vapor recovery unit and to add a booster blower, which will enhance the vacuum regeneration cycle of the carbon. Very minimal new piping changes will be required to tie in the booster blower. The piping for the carbon vessels already exists.

It is anticipated that the proposed modifications will increase the control efficiency of the vapor recovery unit (A-2) with the increase in size of the carbon beds and the addition of the booster blower to more thoroughly regenerate the carbon by increasing the carbon's adsorption capacity. Sources S-1, S-2, S-3, S-4 and S-5 abated by A-2, will be unaffected by the modifications proposed for the vapor recovery unit. During this period, the emissions from truck loading operations (S-1, S-2, S-3 and S-5) as well as those from the slop tank (S-4) will be controlled using the John Zink Portable Vapor Combustor (A-1). The John Zink Portable Vapor Combustion unit has been certified by the California Air Resources Board (CARB).

The design throughput for the vapor recovery unit A-2 is 200 cubic feet per minute. This flow rate will remain the same following the implementation of the proposed changes. The CARB certified gasoline throughput limits (Executive Order G-70-126M) of 112,800 gal/hr and 1,967,262 gal/day, will be maintained during this modification process.

Permit Condition No. 20973, Part 4, originated from the District's engineering evaluation of Application No. 8393 (see attached engineering evaluation report). The emission limit in Part 4 of 0.0068 lb/1000 gallons of product loaded was established based on cumulative increase. The cumulative increase POC emissions was calculated in the evaluation report of Application No. 8393 as follows:

POC = (0.0068 - 0.0182 lb/mgal)(1,967.262 mgal/day)(14 day) = -3.14 lb/yr = 0 TPY

Although a source test indicated that the thermal oxidizer was capable of achieving 0.0068 lb/mgal, there was no basis for imposing that as a limit. As long as emissions are less than the baseline level of 0.0182 lb/mgal, the source is not modified and BACT is not triggered. Therefore, the permit condition will be revised to reflect the baseline emission rate. The current District BACT guideline for bulk terminals limits these types of sources to 0.02 lb/mgal.

2.0 EMISSIONS SUMMARY

There is no increase in emissions because all the sources mentioned in the Background Section, will continue to be subject to the same throughput limits contained in the existing BAAQMD permit condition numbers 20973, 16991 and CARB Executive Order No. G-70-126M.

2.1 Toxics

A Toxic Risk Screening Analysis is not required because there are no emission increases for this application.

2.2 Best Available Control Technology

In accordance with Regulation 2, Rule 2, Section 301, a source with the potential to emit 10 pounds or more per highest day of POC, NPOC, NOx, CO, SO_2 or PM_{10} must use BACT. For this application, BACT is not triggered because proposed changes will not result in an increase in any emissions.

2.3 Plant Cumulative Increase

The cumulative emission increase is zero for all the criteria pollutants because annual emissions for this plant are not increasing due to this application.

2.4 Offsets

Offsets must be provided for any new or modified source at a facility that emits more than 10 tons/yr of POC or NOx. The District may provide offsets from the Small Facility Banking Account for a facility with emissions between 10 and 35 tons/yr of POC or NOx, provided that the facility has no available offsets. Since there is no increase in emissions at this plant as mentioned in Section 2 above, offsets are not required for this application.

3.0 STATEMENTS OF COMPLIANCE

The operation of this terminal is subject to the requirements of Regulation 8, Rule 33 ("Gasoline Bulk Terminals and Gasoline Delivery Vehicles"), including the 0.08 lb/1,000 gal emission rate limit (8-33-301) and the bottom fill requirement for trucks (8-33-303). Since the proposed modifications are expected to increase the control efficiency of the vapor recovery system, A-2, continued compliance with this regulation will be assumed pending the next scheduled inspection. Facility source tests are performed twice a year.

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

the application of standard permit conditions and standard emission factors as outlined in the District Permit Handbook Chapter 3.1.

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

PSD, NSPS, and NESHAPS do not apply.

4.0 PERMIT CONDITIONS

COND# 20973 ----------

Application # 8538, Plant # 11956
Conditions for S-1, S-2, S-3, and S-5 and A-1

1) The owner/operator of S-1, S-2, S-3, and S-5 Gasoline Truck/Rail Loading Racks and shall not exceed a gasoline throughput of 82,625,004 gallons totaled over the cumulative operating period of A-1 John Zink Portable Combustor Vapor Recovery Unit during any consecutive 12 month period. The throughput of liquids loaded into tank trucks or railcars that formerly contained gasoline shall be included in this limitation. (Basis: Cumulative Increase)

2) The owner/operator of S-1, S-2, S-3, and S-5 Gasoline Truck/Rail Loading Racks shall not exceed a gasoline throughput 1,967,262 gallons per day when A-1 John Zink Portable Combustor Vapor Recovery Unit is in operation. The throughput of liquids loaded into tank trucks or railcars that formerly contained gasoline shall be included in this limitation. (Basis: Cumulative Increase)

3) The owner/operator shall perform the loading of gasoline or the loading of any liquid into tank trucks or railcars that formerly contained gasoline at S-1, S-2, S-3, and S-5 Gasoline Truck/Rail Loading Racks with abatement by either A-2 Vapor Recovery System or A-1 John Zink Portable Combustor Vapor Recovery Unit. (basis: Cumulative Increase)

4) The owner/operator shall operate S-1, S-2, S-3, and S-5 Gasoline Truck/Rail Loading Racks to have a POC emission rate, after abatement by A-1 John Zink Portable Combustor Vapor Recovery Unit, to not exceed ~~0.0068~~ 0.0182 lb/103 gallons of product loaded. (basis: Cumulative Increase)

5) The owner/operator of S-1, S-2, S-3, and S-5 Gasoline Truck/Rail Loading Racks and A-1 John Zink Portable Combustor Vapor Recovery Unit shall maintain

throughput records of gasoline or any other liquid loaded into tank trucks or railcars that formerly contained gasoline, on a daily basis in a District-approved log, as long as A-1 is being used. (Basis: Cumulative Increase)

6) The owner/operator of S-1, S-2, S-3, and S-5 Gasoline Truck/Rail Loading Racks and A-1 John Zink Portable Combustor Vapor Recovery Unit shall satisfy the following restrictions regarding the use of A-1: (basis: Cumulative Increase)

a. Backpressure shall not exceed 18 inches of water column at any loading lane abated by A-1.
b. A-1 shall be provided with a continuous stack temperature monitor, this monitor shall operate whenever A-1 is required to be in service and stack temperature averaged over any 1-hr period of use shall be at least 1,400 degrees F
c. A-1 shall only be used when a vapor accumulator (bladder tank) is in operation.

7) The owner/operator of S-1, S-2, S-3, and S-5 Gasoline Truck/Rail Loading Racks and A-1 John Zink Portable Combustor Vapor Recovery Unit shall maintain the throughput records required by Part 5 and the temperature records required by Part 6b for at least 2 years. (basis: Cumulative Increase)

5.0 RECOMMENDATION

a) Issue Equilon a P/O to perform modifications at the following equipment:
A-2 Vapor Recovery System, Carbon Adsorption/Absorption, John Zink AA-825-5-15B, 200 CFM

b) Approve the following permit condition changes:

- **Modify Permit Condition Number 20973 Part 4 to change the POC emission rate from 0.0068 lb/1000 gallons to 0.02 lb/1000 gallons of product loaded.**
- **Reactivate A-1 as currently it is archived in the District's databank.**

By:_____
Sanjeev Kamboj
Air Quality Engineer II

Date: _____

Application 14121, S-4 Slop Tank Carbon Adsorption System A-4

1.0 BACKGROUND

Equilon Enterprises LLC (Equilon) submitted this application for an Authority to Construct and Permit to Operate (P/O) the following abatement device:

A-4 Carbon Canister System, Baker Filtration KLEEN.AIR 55; to abate emissions from S-4, Slop Tank

A-4 will abate an existing source S-4, Slop Tank, which is currently being abated by A-2, Vapor Recovery System.

Besides permitting A-4, a modified P/O for S-4 will also be issued to reflect the new abatement device and permit conditions.

The Martinez Terminal and the Martinez Refinery are separate businesses within Shell Oil Products US. However, the Martinez terminal is adjacent to the Martinez Refinery, which is a major source of hazardous air pollutants, and both are under common ownership of the Parent Company. These conditions subject the Martinez Terminal to any applicable NESHAP or MACT. It has been determined by the applicant that the process of operating the underground storage tank at the Martinez Terminal makes it subject to the Benzene Waste NESHAP 40 CFR 61 subpart FF. Under the Martinez Refinery's EPA Consent Decree, a carbon canister used as a control device under the Benzene Waste NESHAP is mandated to be installed and monitored pursuant to specific requirements in the Consent Decree.

The facility VOC emission and throughput limitations established by the existing BAAQMD permit conditions 20973 and 16991, and the CARB Executive Order No. G-70-126M will remain the same with the proposed changes in this application.

S-4 underground slop tank collects small amounts of product on a daily basis when the pressure is exceeded on the pipelines from the Martinez Refinery to the Martinez terminal load rack. The tank on an average does not collect more than 50 gallons per day. This application proposes to switch the vapor control device connected to the underground pipeline overflow tank for the truck loading operations from the facility's vapor recovery unit to a tandem set of carbon canisters connected directly to the tank vent. This proposal to put S-4 on its own control system, A-4, will result in better monitoring of the compliance of the control system on the tank without interference or influence from the truck loading operations.

Currently, the 8,000-gallon slop tank (S-4) is connected to the terminal's carbon adsorption vapor recovery unit (VRU). Equilon is going to disconnect the tank from the VRU (A-2) and install a tandem set of carbon canisters (A-4) connected directly to the tank vent. The outlet of the carbon canister will be monitored for breakthrough using a portable monitoring device such as an OVA-FID Meter or other acceptable device. Continuous monitoring is currently conducted on the outlet of the VRU; however, the results do not provide sufficient indication of compliance for the underground slop tank. Primary and secondary carbon canisters will be installed and

operated in series. Equilon will monitor for breakthrough between the primary and secondary carbon canisters.

Equilon has proposed to use two Baker Tank KLEEN.AIR 55 drum filter units. The two carbon canisters will be connected in series with a connector between the two vessels. This connection will be the point of monitoring for compliance. If breakthrough begins to occur, the primary carbon canister will be replaced and the secondary unit will become the primary control device. It will require minimal changes to the terminal's piping to disconnect the tank from the facility's vapor recovery unit. Appurtenant equipment consisting of a flame arrestor land back flow valve will be installed for safety purposes. The flame arrestor will be mounted between the tank vent and the primary carbon canister. The back flow valve will be on the outlet of the carbon canisters to prevent ambient air from getting into the system.

Control efficiency of the proposed dual carbon canister system, A-4, would be equal or greater than the control efficiency of the VRU, A-2, because the new device would control emissions only from the tank. More importantly, although the Martinez Refinery's EPA Consent Decree defines "breakthrough" as any reading of 50 ppm of volatile organic compounds (VOCs), the District's standard breakthrough at 10 ppmv (as C1), which is more stringent than the federal standard, will be included in the permit conditions. The Consent Decree requires periodic monitoring on the outlet of the primary canister, and will enable Equilon to readily verify the carbon's integrity. This enables the tank emissions to be monitored more closely. The Equilon facility is also subject to the Gasoline Distribution MACT (Subpart R), which dictates that, a hydrocarbon analyzer monitor the outlet of the A-2, VRU. However, this does not specifically indicate product leakage from the underground storage tank. Routine monitoring on a source specific control device would be more accurate and less likely to offer conflicting results than to monitor the outlet of a control device connected to several sources of emissions. Further, since the current control device mode for the underground storage tank is carbon adsorption and the proposed modification is also carbon adsorption, Equilon is actually replacing like-for-like.

5.0 EMISSIONS SUMMARY

There is no increase in emissions because control efficiency of the proposed carbon canister unit, A-4, would be equal or greater than the control efficiency of the VRU as described in the Background section above. Also, Equilon is not requesting any new operational or emission limits for the facility. The facility will continue to be subject to the same throughput limits contained in the existing BAAQMD permit condition numbers 20973, 16991 and CARB Executive Order No. G-70-126M.

Carbon Breakthrough Calculation:

The maximum annual uncontrolled S-4 tank VOC emissions of 668.78 lbs as provided by the applicant were calculated using Tanks 4.0 program (see Attachment A).

Assume 15% carbon adsorption capacity,

(200 lbs carbon/drum) (0.15) / (668.78 lbs POC/yr) = 0.15 years = 54 days to breakthrough.

Therefore, the first absorber drum is expected to have an effective operating life of 54 days, before it should be replaced.

It can be concluded that replacing the first drum in the Carbon Canister System A-4 at least every 54 days will ensure that there are "no detectable emissions", i.e., no more than 10 ppmv of organic compound emissions, at A-4's exhaust. Per the Consent Decree, daily VOC monitoring of the carbon canister system is required.

5.1 Toxics

A Toxic Risk Screening Analysis is not required because there are no emission increases for this application.

5.2 Best Available Control Technology

In accordance with Regulation 2, Rule 2, Section 301, a source with the potential to emit 10 pounds or more per highest day of POC, NPOC, NOx, CO, SO_2 or PM_{10} must use BACT. For this application, BACT is not triggered because proposed changes will not result in an increase in any emissions.

5.3 Plant Cumulative Increase

The cumulative emission increase is zero for all the criteria pollutants because annual emissions for this plant are not increasing due to this application.

5.4 Offsets

Offsets must be provided for any new or modified source at a facility that emits more than 10 tons/yr of POC or NOx. The District may provide offsets from the Small Facility Banking Account for a facility with emissions between 10 and 35 tons/yr of POC or NOx, provided that the facility has no available offsets. Since there is no increase in emissions at this plant as mentioned in Section 2 above, offsets are not required for this application.

6.0 STATEMENTS OF COMPLIANCE

The operation of this terminal is subject to the requirements of Regulation 8, Rule 33 ("Gasoline Bulk Terminals and Gasoline Delivery Vehicles"). Since the control efficiency of the proposed dual carbon canister system, A-4 would be equal or greater than the control efficiency of the VRU, A-2, continued compliance with this regulation would be assumed pending the next scheduled inspection.

Under the Martinez Refinery's EPA Consent Decree and 40 CFR § 61.354(d), the S-4 tank will be monitored daily. The carbon beds will be monitored for "breakthrough" (defined earlier in the Background section) by breaking the connection between the primary and secondary carbon canisters and monitoring the outlet of the primary canister with an OVA-FID, PID or other approved device. If the analyzer reading exceeds the 10 ppmv (as C1) threshold, the primary

carbon canister will be replaced with the secondary carbon canister in series and a new fresh secondary carbon canister will be installed.

S-4, Slop tank, and A-4, Carbon canister system will be subject to the additional monitoring, recordkeeping and reporting requirements to ensure their compliance with the District regulations and Benzene Waste NESHAPS requirements.

The project is considered to be ministerial under the District's CEQA regulation 2-1-311 and therefore is not subject to CEQA review. The engineering review for this project requires only the application of standard permit conditions and standard emission factors as outlined in the District Permit Handbook Chapter 3.1.

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

PSD and NSPS do not apply.

7.0 PERMIT CONDITIONS

S-4, Slop Tank; abated by A-4 Carbon Canister System:

1. The owner/operator of S-4 shall vent this tank, whenever it contains any organic liquid, to the A-4 carbon canister system. [Basis: Cumulative Increase]
2. The owner/operator shall ensure that A-4, carbon canister system, consists of at least two vessels of activated carbon arranged in series (200 pound minimum capacity each). [Basis: Cumulative Increase]
3. The owner/operator shall ensure that carbon in the upstream vessel, first vessel in series, shall be replaced with carbon from the downstream vessel when the non-methane hydrocarbon (NMHC) concentration in the exhaust from the primary vessel exceeds either of the following:
    a. 10% of the inlet stream concentration, or
    b. 10 ppmv (measured as C1)

    [Basis: Cumulative Increase]
4. The owner/operator shall ensure that the concentration of NMHC in the exhaust from the downstream vessel does not exceed 10 ppmv (as C1). The carbon in the downstream vessel shall be replaced with fresh carbon to ensure compliance with this requirement. [Basis: Cumulative Increase]
5. The owner/operator of A-4 shall monitor NMHC concentration of the process exhaust gas with a photo-ionization detector (PID), flame-ionization detector (FID), or other method approved in writing by the District at the following points:
    a. At the inlet to the upstream carbon vessel in series
    b. At the outlet of the upstream carbon vessel in series
    c. At the outlet of the downstream carbon vessel in series

    When using an FID to monitor A-4, readings may be taken with and without a carbon filter tip fitted on the FID probe. Concentrations measured with the carbon filter tip in place shall be considered methane and are not counted as NMHC. [Basis: Cumulative Increase]
6. All measured concentrations required by Part 5 shall be recorded in a District-approved log at the time they are taken. The monitoring results shall be used to estimate the

frequency of carbon change-out necessary to maintain compliance with parts 3 and 4, and shall be conducted on a daily basis. These records shall be kept for at least two years and shall be made available to the District upon request. [Basis: Recordkeeping]

7. The owner/operator of A-4 shall maintain the following records for each month of operation of the source:
    a. The hours and times of operation.
    b. Each monitor reading or analysis for the day of operation they are taken.
    c. The number of carbon beds removed from the service.

    All measurements, records and data required to be maintained shall be kept for at least two years and shall be made available to the District upon request. [Basis: Cumulative Increase, Recordkeeping]

8.0 RECOMMENDATION

a) Waive the A/C and issue a Permit to Operate to Equilon for the following abatement device:

A-4 Carbon Canister System, Baker Filtration KLEEN.AIR 55; to abate emissions from S-4, Slop Tank

b) Issue a modified Permit to Operate for the following source:

S-4 Slop Tank; abated by A-4 Carbon Canister System

By:_____
Sanjeev Kamboj
Air Quality Engineer II

Date: _____

Application 21877, S-6, S-7, S-8 and S-9 Fuel Additive/Dye Containers

ENGINEERING EVALUATION
Equilon Enterprises, LLC, Plant: 11956
Application: 21877

BACKGROUND

Equilon Enterprises, LLC (Equilon) has submitted this permit application to obtain an Authority to Construct (AC) and Permit to Operate (PO) for the following sources:

S-6: Tote[1] storing fuel additive/dye
S-7: Tote storing fuel additive/dye
S-8: Tote storing fuel additive/dye
S-9: Tote storing fuel additive/dye

Equilon is a bulk storage and loading terminal for petroleum products, which is located adjacent to the Shell Martinez Refinery (Shell). The District recently determined Equilon to be a support facility of Shell. As a result, Equilon submitted application (# 21607) to obtain an initial Title V permit from the District on February 17, 2010. Although Equilon and Shell are considered to be the same facility, Equilon will receive a separate Title V permit under Application 21607 in the near future.

For the purposes of this evaluation report, it is assumed that the storage capacity of S-6 through S-9 is 500 gallon/tote; that S-6 & S-7 are two un-permitted existing totes, which have been operating at Equilon for the past five years; and that S-8 & S-9 are two new totes. The new and existing totes will be used to store organic liquids such as red dye (UNISOL® Liquid Red BK-50) and conductivity enhancing fuel additives (Stadis® 425 Conductivity Improver). Because the totes are interchangeable, they are either periodically rotated (~replaced) with other similar-sized containers (with storage capacities over 260 gallons), or are refilled either on site at Equilon, or off-site.

As proposed, the dye and additives stored in the totes would be directly conveyed to the loading arm and blended with diesel fuel prior to being loaded into tanker trucks. Going forward, the totes may store materials that could be added to gasoline or gasoline blends. Though the scope of this evaluation report is to evaluate emissions stemming from refilling the totes on-site at Equilon when storing dye and additives added to diesel fuel, parts 4.a. of permit condition 24738, which is discussed towards the end of this evaluation report will ensure that the cumulative increase in emissions associated with this application is preserved when storing materials in the totes that would be added to gasoline or gasoline blends in the near future. Likewise, part 4.b. of permit condition 24738 would ensure that toxic air contaminant emissions (TAC) resulting from refilling totes with materials added to gasoline or gasoline blends does not exceed the Acute and/or Chronic TAC trigger levels outlined in Table 2-5-1 of Regulation 2 “Permits”, Rule 5 “New Source Review of Toxic Air Contaminants”.

EMISSIONS CALCULATION

The following assumptions were taken into account to estimate POC emissions via US EPA’s TANKS 4.0.9d model when refilling the totes on-site at Equilon:

- The totes were modeled as horizontal tanks.
- Emissions resulting from the refilling operations are unabated.
- The storage capacity of each tote is 500 gallons (2,000 gallons combined limit).
- For a given TANKS run a tote would store either dye or additives added to diesel fuel.
- Ingredients in the dye or additives for which corresponding TACs exist in Table 2-5-1 of Regulation 2, Rule 5 were input for the two TANKS runs i.e. one TANKS run each for the dye and the additives.
- The vapor pressure of materials stored in the totes is 0.5 psia.
- Annual materials throughput/tote/year = 36,000 gallons (144,000 gallons combined)
- Average tank (~tote) turnovers/year = 72 (i.e. 36,000/500, or 144,000/2,000)

[1] Tote – transportable container

- It would take at least 30 minutes to refill a tote (i.e. 2,160 minutes/yr → 72 x 30)

The annual POC emissions estimated by the TANKS model when storing dye and additives were 36.47 lbs/yr/tote and 37.04 lbs/yr, respectively. The calculations that follow conservatively assume the POC emissions to be 37.04 lbs/yr/tote (148.16 lbs/yr from all 4 totes combined). Assuming all totes are refilled on a given day, the daily POC emissions from all 4 totes combined are equal to 2.06 lbs/day i.e. 148.16/72.

TOXIC RISK SCREEN ANALYSIS

Per information furnished in its MSDS, UNISOL® Liquid Red BK-50 contains the following TACs: xylenes (13.4% by wt.) and ethylbenzene (2.6% by wt.). Likewise, Stadis® 425 Conductivity Improver contains toluene (20% by wt.) and benzene (0.02% by wt.). Using the above TAC information for the dye and additives in concert with the annual (of 148.16 lbs/yr) and daily (of 2.06 lbs/day) POC emissions, Table 1 below summarizes the annual, daily, and hourly TAC emissions from the totes.

Table 1

TAC	% by wt.	From 4-totes		
		Annual emissions (lbs/yr)	Daily emissions (lbs/day)	Hourly emissions (lbs/hr)
Benzene	0.02	0.03	4.12E-04	8.23E-04
Ethylbenzene	2.6	3.85	5.35E-02	1.07E-01
Toluene	20	29.63	4.12E-01	8.23E-01
Xylenes (mixed isomers)	13.4	19.85	2.76E-01	5.51E-01

As an example, consider benzene emissions summarized in Table 1.
Annual emissions = (148.16 lbs/yr) x (0.02/100) = 0.0296 (~0.03 lbs/yr)
Daily emissions = (0.03 lbs/yr)/(72 days/yr) = 4.115E-4 (~4.12E-4 lbs/day)
Hourly emissions = (4.12E-4 lbs/day)/(0.50 hrs/day) = 8.23E-4 lbs/hr

Table 2 below compares the TAC emissions summarized in Table 1 above to the corresponding acute and chronic TAC trigger level in Table 2-5-1 to verify whether a Health Risk Screening Analysis (HRSA) is warranted.

Table 2

TAC	Acute TAC Trigger Level (lbs/hr)	Combined tote emissions exceed Acute TTL?	Chronic TAC Trigger Level (lbs/yr)	Combined tote emissions exceed Chronic TTL?
Benzene	2.9	No	3.8	No
Ethylbenzene	NA	No	43	No
Toluene	82	No	12,000	No
Xylenes (mixed isomers)	49	No	27,000	No

Per Regulation 2, Rule 5, a HRSA is only warranted when TAC emissions from either a new and/or modified source(s) exceeds the acute and/or chronic TAC trigger levels outlined in Table 2-5-1 in Regulation 2, Rule 5. Based on information summarized in Table 2 above the installation and subsequent operation of S-6 through S-9 does not warrant an HRSA.

CUMULATIVE INCREASE & OFFSETS

Equilon is an existing facility. Table 3 summarizes the cumulative increase in criteria pollutant emissions at Plant 11956.

Table 3: Cumulative Increase				
Pollutant	**Increase in plant emissions prior to April 5, 1991 (TPY)**	**Increase in plant emissions since April 5, 1991 (TPY)**	**Increase in plant emissions associated with this application (TPY)**	**Cumulative increase in emissions (Post 4/5/91 + Current application increase) (TPY)**
POC	0	0	0.07	0.07
NOx	0	0.508	0	0.508
SO_2	0	0	0	0
PM_{10}	0	0	0	0
CO	0	1.157	0	1.157

Table 4: Offsets					
Pollutant	**"Pre-Project" Permitted plant emissions (TPY) Pre-April 5, 1991 + Post-April 5, 1991**	**Actual plant emissions (TPY)**	**Increase in plant emissions associated with this application (TPY)**	**"Post-Project" Permitted plant emissions ("Pre-Project" Permitted Emissions + Increase in plant emissions associated with this application) (TPY)**	**Regulation 2-2-302 and 2-2-303 Offset Triggers (TPY)**
POC	0	13.28	0.07	0.07	> 35
NOx	0.508	0	0	0	> 35
SO_2	0	0	0	0	> 1
PM_{10}	0	0	0	0	> 1
CO	1.157	0	0	0	NA

POC is the pollutant of interest for the purposes of determining whether offsets are warranted for this application. The requirement to offset POC emission increases from a new/modified source and any pre-existing cumulative increase at a 1.15:1 ratio is triggered when the Actual plant emissions and the "Post-Project" Permitted plant emissions are greater than 35 TPY. In addition, the requirement to offset emissions from a new/modified source and any pre-existing cumulative increase at a 1:1 ratio is triggered when the Actual plant emissions and the "Post-Project" Permitted plant emissions are greater than 10 TPY but less than 35 TPY. It can be seen from the above discussion that offsets are warranted for the 0.07 TPY increase in POC emissions stemming from the installation & subsequent operation of the 4 totes because the Actual plant POC emissions of 13.28 TPY is greater than 10 TPY but less than 35 TPY. As previously discussed under the "Background" section, the District recently determined Equilon to be a support facility of Shell. Because Equilon is a support facility of Shell and given that the combined POC emissions from both facilities is greater than 35 TPY, the proposed 0.07 TPY increase in POC emissions will have to be offset by Equilon at a 1.15:1 ratio per Regulation 2-2-215. Therefore, Equilon will have to provide the District 0.08 tons of POC credits.

Rather than surrender 0.08 tons of POC credits as part of this permit application, Equilon can avail of the option under Regulation 2-2-421 to defer providing the offsets until the time of their annual permit renewal (which occurs in August) as discussed below. Regulation's 2-2-421.1 and 2-2-421.2 state the following:

421.1 The facility demonstrates that they have valid Banking Certificates adequate to cover their offset obligation. Offsets deferred under the provisions of this Section shall be provided by the facility at least 30 days prior to the date of annual permit renewal, and

421.2 The facility does not have a cumulative increase greater than 15 tons per year for the pollutant or pollutants subject to the offset requirement(s).

Per information provided on the District's website, Shell owns 30.637 tons of POC credits as of August 12, 2010. Please visit the following URL: http://hank.baaqmd.gov/pmt/emissions_banking/banking.htm. When considered by itself, it can be seen from Table 3 that the cumulative increase in POC emissions at Equilon is less than 15 TPY. In light of the above, it is reasonable to state that Equilon can meet its obligation to provide the District 0.08 tons of POC credits either prior to and/or at the time of permit renewal.

BACT

Per Regulation 2, Rule 2, Section 301, BACT is only triggered if emissions from a new source or an increase in emissions from a modified source has the potential to emit 10 lbs or more per highest day of emissions. In other words, BACT is a source and pollutant specific requirement. Assuming it takes 30 minutes to refill a tote, and that each tote goes through 72 turnovers in a year, and that no more than one tote is refilled on a given day, it is reasonable to expect the daily POC emissions from a tote refilling operation to be 0.51 lbs/day/tote i.e. (37.04 lbs/yr/tote)/(72 days/yr). Because the above emissions are below the 10 lb/day BACT limit, BACT is not triggered. Stated differently BACT would potentially be triggered if a tote were to be refilled over 19 times on any given day – which is unlikely.

STATEMENT OF COMPLIANCE

Sources S-6 through S-9 are subject to Regulation 8 "Organic Compounds", Rule 5 "Storage of Organic Liquids". However, the totes are exempt from the above rule per Regulation 8-5-117 because the true vapor pressure of the dye and additives stored in them is at/below 0.5 psia.

Sources S-6 through S-9 are potentially subject to 40 CFR 60, Subpart Kb (NSPS Kb) "Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984". NSPS Kb applies to any storage vessel with a capacity greater than or equal to 75 m^3 (~19,803 gallons) that is used to store volatile organic liquids for which construction, reconstruction, or modification is commenced after July 23, 1984. The storage capacity of the 4 totes combined is 2,000 gallons. Therefore, S-6 through S-9 are not subject to the requirements in NSPS Kb.

Sources S-6 through S-9 are potentially subject to 40 CFR 63, Subpart R (MACT R) "National Emission Standards for Gasoline Distribution Facilities (Bulk Gasoline Terminals and Pipeline Breakout Stations)". Sources affected by MACT R Section 63.420 are either bulk gasoline terminals or pipeline breakout stations. "Bulk gasoline terminal" means any gasoline facility that receives gasoline by pipeline, ship or barge. "Pipeline breakout station" means a facility along a pipeline containing storage vessels used to relieve surges or receive and store gasoline from the pipeline for reinjection and continued transportation by pipeline or to other facilities. As previously discussed in the "Background" section, the District recently determined Equilon (a bulk gasoline terminal) to be a support facility of Shell. Therefore, the standards for loading racks outlined in 63.422 of MACT R apply to Equilon. Because the combined storage capacity of the 4 totes is 2,000 gallons, the standards for storage vessels outlined in 63.423 of MACT R don't apply to S-6 through S-9. Specifically, the standards in 63.423 apply to storage vessels storing gasoline with a storage capacity greater than or equal to 75 m3 (~19,803 gallons). The totes will not store gasoline and their combined storage capacity is below 19,803 gallons.

The California Environmental Quality Act (CEQA):

Per Section 2-1-311 of the District Rules and Regulations, a permit application for a proposed new or modified source will be classified as ministerial and will accordingly be exempt from the CEQA requirement of Section 2-1-310 if the District's engineering evaluation and basis for approval of the permit application for the project is limited to the criteria set forth in Section 2-1-428 and to the procedures, fixed standards and objective measurements set forth in the District's Permit Handbook and BACT/TBACT Workbook. The method for determining whether a given permit application will be classified as ministerial is set forth in Section 2-1-427.

Per Section 2-1-427, if the District determines that its evaluation of the permit application is covered by the specific procedures, fixed standards and objective measurements set forth in the District's Permit Handbook and BACT/TBACT Workbook, the District's evaluation of the permit application is classified as ministerial and the engineering evaluation of the permit application by the District will be limited to the use of said specific procedures, fixed standards and objective measurements. For such projects, the District will merely apply the law to the facts as presented in the permit application, and the District's decision regarding whether to issue the permit will be based only on the criteria set forth in Section 2-1-428 and in the District's Permit Handbook and BACT/TBACT Workbook.

Chapter 4 "Organic Liquid Storage Tanks" in the District's Permit Handbook addresses sources such as S-6 through S-9. Therefore, this permit evaluation can be classified as ministerial.

S-6 through S-9 will not be located within 1,000 feet of the outer-boundary of the nearest public school. Therefore, the project to permit the above sources is not subject to the public notification requirements contained in Regulation 2-1-412.

PSD, NSPS (Subpart Kb) and NESHAPS (MACT R) are not applicable to S-6 through S-9.

PERMIT CONDITIONS

(PC 24738)

1. The owner/operator shall ensure that the combined storage capacity of refillable totes S-6 through S-9 used for storing organic liquids such as red dye (UNISOL® Liquid Red BK-50) and conductivity enhancing fuel additives (Stadis® 425 Conductivity Improver), which are blended with fuels prior to being loaded into tanker trucks via loading arms (S-1, S-2, S-3, and S-5), does not exceed 2,000 gallons. (Basis: Cumulative Increase)

2. The owner/operator shall ensure that the combined annual throughput of materials stored in S-6 through S-9 does not exceed 144,000 gallons in any consecutive 12-month period. (Basis: Cumulative Increase, Offsets)

3. The owner/operator shall ensure that the true vapor pressure of materials stored in S-6 through S-9 is at/below 0.5 psia. (Basis: Regulation 8-5-117)

4. The owner/operator may store materials other than UNISOL® Liquid Red BK-50 and Stadis® 425 Conductivity Improver in S-6 through S-9, provided the owner/operator can demonstrate that all of the following requirements are satisfied:

    a. Total POC emissions from refilling the totes with the new materials does not exceed 0.07 tons (148 pounds) in any consecutive twelve month period; and
    b. The emissions associated with tote refilling operations associated with the new materials does not result in Toxic Air Contaminant (TAC) emissions above District established Acute or Chronic TAC Trigger Levels outlined in Table 2-5-1 in Regulation 2, Rule 5 for a given TAC, or a group of TAC's.

    (Basis: Cumulative Increase, Offsets, Toxics)

5. In order to demonstrate compliance with the above conditions, the owner/operator of S-6 through S-9 shall maintain the following records in a District approved log:
    a. The trade names and MSDS's for dyes and additives stored in the totes.
    b. Monthly throughput records indicating the quantities of dyes and additives throughput into the totes from the refilling operations, and dispensed out from the totes into tanker trucks via loading arms (S-1, S-2, S-3, and S-5).
    c. U.S. EPA TANK 4.0.9d modeling results and pertinent calculations when storing materials other than UNISOL® Liquid Red BK-50 and Stadis® 425 Conductivity Improver in S-6 through S-9.

    The owner/operator shall retain all records on-site for at least five years from the date of entry and the records shall be made available for inspection by District staff upon request. The above

record keeping requirements shall not replace the record keeping requirements contained in any applicable District regulations.
(Basis: Regulation 2-1-403)

6. The owner/operator shall ensure that 0.08 tons of POC credits are surrendered to the District as required by Regulation 2-2-302 no later than July 1, 2011 to offset the POC emissions increase associated with Application 21877 per Regulation 2-2-421.1.
(Basis: Regulations 2-2-302, 2-2-421.1)

RECOMMENDATION

Waive the AC and issue Equilon a PO to install the following sources:

S-6: Tote storing fuel additive/dye; Refillable and unabated
S-7: Tote storing fuel additive/dye; Refillable and unabated
S-8: Tote storing fuel additive/dye; Refillable and unabated
S-9: Tote storing fuel additive/dye; Refillable and unabated

_____
K. R. Bhagavan

Application 21922, S-4 Slop Tank Carbon Adsorption System A-4

ENGINEERING EVALUATION
Equilon Enterprises, LLC, Plant: 11956
Application: 21922
(Amended: September 2011)

BACKGROUND

Equilon Enterprises, LLC (Equilon), bulk storage and loading terminal for petroleum products, has submitted this permit application to obtain an Authority to Construct (AC) and Permit to Operate (PO) to perform a source test at the following existing sources:

S-1: Loading Rack;
1 lane consisting of 4 gasoline loading arms, 2 diesel loading arms and 2 vapor recovery arms; loading rate of 600 GPM[2] per gasoline and diesel loading arm; bottom loading

S-2: Loading Rack;
1 lane consisting of 4 gasoline loading arms, 2 diesel loading arms and 2 vapor recovery arms; loading rate of 600 GPM per gasoline and diesel loading arm; bottom loading

S-3: Loading Rack;
1 lane consisting of 4 gasoline loading arms, 2 diesel loading arms, 1 ethanol loading arm and 2 vapor recovery arms; loading rate of 600 GPM per gasoline and diesel loading arm; loading rate of 49 GPM for the ethanol loading arm; bottom loading

S-5: Loading Rack;
1 lane consisting of 3 diesel loading arms and 2 vapor recovery arms; loading rate of 600 GPM per diesel loading arm; bottom loading

Vapors displaced during the gasoline, diesel, and ethanol truck loading operations at S-1, S-2, S-3, and S-5 are abated by A-2 which is described as follows:

A-2: Vapor Recovery System;
Consisting of one vapor bladder tank upstream of two carbon adsorbers in parallel; John Zink Company Model # AA-825-5-15B with booster; 200 CFM capacity; Dimension of vapor bladder tank: 30' diameter x 32' height; Dimension of each carbon adsorber: 4' diameter x 17' height

In the absence of a CARB certification Equilon cannot operate A-2 in direct mode (i.e. bypass the bladder tank and directly vent emissions from the loading racks to the carbon adsorbtion system.) Equilon would also have to shut down all fuel loading operations at the terminal if the bladder is out of service for maintenance, repairs, etc. until such time the bladder is either repaired/replaced. In light of the above and as part of this permit application, Equilon is requesting that the District grant them an AC/PO which would allow them to schedule a source test with the CARB that will be performed by CARB staff in February 2011. The proposed source test would enable CARB to certify A-2 when operating in direct mode so that operations at the terminal are not impeded when the bladder is taken out of service.

EMISSIONS CALCULATION

A-2's existing CARB certification assumes that the bladder tank will not be bypassed and is based on testing that CARB staff performed at Equilon on May 23rd and 24th, 1989. Specifically, Exhibit 1 in Executive Order G-70-126 limits the hourly and daily gasoline throughput at S-1, S-2, and S-3 to not exceed 112,800 gal/hr and 1,967,262 gal/day, respectively. Likewise, POC emissions from A-2 are limited by the above CARB certification to 0.08 lb/1,000 gal of gasoline loaded.

[2] GPM – Gallons per minute

Effective January 10, 2011, emissions of non-methane organic compounds (NMOCs) from vapor recovery systems such as A-2 are limited by Reg. 8-33-301.2[3] to not exceed 0.04 lb/1,000 gal of organic liquid loaded. In addition, switch loading operations[4] abated by A-2 are also subject to the above standard. In light of the above and for the purposes of this evaluation, it is reasonable to assume NMOC emissions from A-2 cannot exceed 0.04 lb/1,000 gal. The above assumption takes into account that limits in permit conditions 16991 and 20973 are no longer valid and will soon be replaced with the Reg. 8-33-301.2 limit.

Equilon does not expect an increase in POC emissions when operating A-2 in direct mode. Their contention may hold true at least during the duration of the CARB testing, which is expected to last no more than 1-day. However, in the absence of CARB testing/certification, the following issues make a compelling case that operating A-2 in direct mode could result/has the potential to result in an emissions increase:

- The bladder tank upstream of A-2 helps smooth out the displaced influent vapor flow from the loading racks and allows the VRU to run in a relatively steady state mode. Therefore, operating A-2 in direct mode could result in flow and face velocity (a critical design parameter) spikes at the VRU, which any abatement equipment, including a carbon system, is less efficient at handling.

- The problem is further compounded during peak loading periods because of the increased rack back pressure and the increased face velocity at A-2. The net effect of the increased rack back pressure and face velocity would reduce the efficacy of the VRU and result in an emissions increase.

In light of the above and further assuming the proposed February 2011 CARB source test confirms NMOC emissions from A-2 would be higher than 0.04 lb/1,000 gal when operating in direct mode, the District would impose additional operational limits (such as limiting the number of active lanes, the number of loading arms that can simultaneously operate, etc.) for direct-mode operation. Because A-2 will only be operated in direct mode during the duration of the CARB test, this evaluation report assumes a “no net increase” in POC emissions. Therefore, Toxics, BACT, Cumulative Increase, and Offsets are not discussed in this report.

STATEMENT OF COMPLIANCE

Sources S-1, S-2, S-3, and S-5 and A-2 are subject to Regulation 8 “Organic Compounds”, Rule 33 “Gasoline Bulk Terminals and Gasoline Cargo Tanks”. As previously discussed under the “Emissions Calculation” section above and effective January 10, 2011, emissions of non-methane organic compounds (NMOCs) from vapor recovery systems such as A-2 are limited by Reg. 8-33-301.2 to not exceed 0.04 lb/1,000 gal of organic liquid loaded. In addition, switch loading operations abated by A-2 are also subject to the above standard. In light of the above and for the purposes of this evaluation it is reasonable to assume NMOC emissions from A-2 cannot exceed 0.04 lb/1,000 gal. The above assumption takes into account that limits in permit conditions 16991 and 20973 are no longer valid and will soon be replaced with the Reg. 8-33-301.2 limit.

Sources S-1, S-2, S-3, and S-5 are also subject to 40 CFR 60, Subpart XX (NSPS XX) “Standards of Performance for Bulk Gasoline Terminals” and 40 CFR 63, Subpart R (MACT R) “National Emission Standards for Gasoline Distribution Facilities (Bulk Gasoline Terminals and Pipeline Breakout Stations)”. Equlion’s loading racks (S-1, S-2, S-3, and S-5) are subject to the standards in Section 60.502 of NSPS XX and to the standards in Section 63.422 of MACT R. Specifically, Section 60.502(c) in NSPS XX limits the emissions to the atmosphere from an existing vapor processing system (such as A-2) to not exceed 80 milligrams of total organic compounds per liter of gasoline loaded. Section 63.422(a) subjects existing loading racks (such as those at Equilon that were constructed/modified after December 17, 1980) to the NSPS XX standard referenced above. The NSPS XX standard of 80 milligrams of total organic compounds (TOC) per liter of gasoline loaded translates to 0.67 pounds of TOC per 1,000 gallons of

[3] April 15, 2009 version of Regulation 8, Rule 33.
[4] The loading of an organic liquid with a Reid vapor pressure of less than 4.0 pounds into a gasoline cargo tank where the previous load was gasoline.

gasoline loaded[5]. The most stringent limit in the above rules is the 10 milligrams of total organic compounds per liter of gasoline loaded for new sources (not applicable to Equilon which is an existing source) in MACT R, which translates to 0.08 pounds of TOC per 1,000 gallons of gasoline.

To recap, S-1, S-2, S-3, and S-5 are subject to three limits:

1. CARB certified limit of 0.08 lb/1,000 gal of gasoline loaded.
2. Regulation 8-33-301.2 limit of 0.04 lb/1,000 gal of organic liquid loaded.
3. NSPS XX limit of 0.67 lb/1,000 gal of gasoline loaded.

It can be seen that the Regulation 8-33-301.2 limit is the most stringent of the above limits. Therefore, compliance with Reg. 8-33-301.2 would assure compliance with the CARB certification and NSPS XX.

The California Environmental Quality Act (CEQA):

Per Section 2-1-311 of the District Rules and Regulations, a permit application for a proposed new or modified source will be classified as ministerial and will accordingly be exempt from the CEQA requirement of Section 2-1-310 if the District's engineering evaluation and basis for approval of the permit application for the project is limited to the criteria set forth in Section 2-1-428 and to the procedures, fixed standards and objective measurements set forth in the District's Permit Handbook and BACT/TBACT Workbook. The method for determining whether a given permit application will be classified as ministerial is set forth in Section 2-1-427.

Per Section 2-1-427, if the District determines that its evaluation of the permit application is covered by the specific procedures, fixed standards and objective measurements set forth in the District's Permit Handbook and BACT/TBACT Workbook, the District's evaluation of the permit application is classified as ministerial and the engineering evaluation of the permit application by the District will be limited to the use of said specific procedures, fixed standards and objective measurements. For such projects, the District will merely apply the law to the facts as presented in the permit application, and the District's decision regarding whether to issue the permit will be based only on the criteria set forth in Section 2-1-428 and in the District's Permit Handbook and BACT/TBACT Workbook.

The District's Permit Handbook Chapter 3.1 "Bulk Loading Facilities" addresses sources such as S-1, S-2, S-3, and S-5. Therefore, this permit evaluation can be classified as ministerial.

S-1, S-2, S-3, and S-5 are not located within 1,000 feet of the outer-boundary of the nearest public school. Therefore, the project to permit the above sources is not subject to the public notification requirements contained in Regulation 2-1-412.

NSPS (Subpart XX) and NESHAPS (MACT R) are applicable to S-1, S-2, S-3, and S-5.

PERMIT CONDITIONS

The text of permit conditions 16991 and 20973 that govern the operation of S-1, S-2, S-3, and S-5 follows:

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          COND#  16991   ------------------------------------

    APPLICATION 100; EQUILON ENTERPRISES; PLANT 11956
    CONDITIONS FOR S-5

    1.   This facility is subject to the requirements of
         Regulation 8, Rule 33, as long as gasoline is received
         only by pipeline (8-33-202).  [Regulation 8, Rule 33]

    2.   Gasoline throughput at S-5 (loading lane 4) shall not
         exceed 200,000 gallons on any single day.
                                        [Cumulative Increase]
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[5] 0.67 lb/Mgal = (80 mg/L) x (3.79 L/gal) x (1,000 gal/Mgal) x (lb/454,000 mg)

3a. S-5 loading emissions shall be abated at the A-2 carbon adsorption system. [Cumulative Increase]

3b. A-2 shall limit emissions from S-5 to no more than 0.05 lb/1,000 gallons of gasoline loaded. [Cumulative Increase]

4. [Delete - offsets provided]

5. Daily records of the gasoline throughput at S-5 shall be kept in a District-approved log for at least 2 years and shall be made available to the District upon request. [Recordkeeping]

COND# 20973 ----------

Application # 12976, Plant # 11956
Conditions for S-1, S-2, S-3, S-5 and A-1

1. The owner/operator of S-1, S-2, S-3, and S-5 Gasoline Truck/Rail Loading Racks and shall not exceed a gasoline throughput of 82,625,004 gallons totaled over the cumulative operating period of A-1 John Zink Portable Combustor Vapor Recovery Unit during any consecutive 12 month period. The throughput of liquids loaded into tank trucks or railcars that formerly contained gasoline shall be included in this limitation. (Basis: Cumulative Increase)

2. The owner/operator of S-1, S-2, S-3, and S-5 Gasoline Truck/Rail Loading Racks shall not exceed a gasoline throughput 1,967,262 gallons per day when A-1 John Zink Portable Combustor Vapor Recovery Unit is in operation. The throughput of liquids loaded into tank trucks or railcars that formerly contained gasoline shall be included in this limitation. (Basis: Cumulative Increase)

3. The owner/operator shall perform the loading of gasoline or the loading of any liquid into tank trucks or railcars that formerly contained gasoline at S-1, S-2, S-3, and S-5 Gasoline Truck/Rail Loading Racks with abatement by either A-2 Vapor Recovery System or A-1 John Zink Portable Combustor Vapor Recovery Unit. (basis: Cumulative Increase)

4. The owner/operator shall operate S-1, S-2, S-3, and S-5 Gasoline Truck/Rail Loading Racks to have a POC emission rate, after abatement by A-1 John Zink Portable Combustor Vapor Recovery Unit, to not exceed 0.0182 lb/103 gallons of product loaded. (basis: Cumulative Increase)

5. The owner/operator of S-1, S-2, S-3, and S-5 Gasoline Truck/Rail Loading Racks and A-1 John Zink Portable Combustor Vapor Recovery Unit shall maintain throughput records of gasoline or any other liquid loaded into tank trucks or railcars that formerly contained gasoline, on a daily basis in a District-approved log, as long as A-1 is being used. (Basis: Cumulative Increase)

6. The owner/operator of S-1, S-2, S-3, and S-5 Gasoline Truck/Rail Loading Racks and A-1 John Zink Portable Combustor Vapor Recovery Unit shall satisfy the following restrictions regarding the use of A-1: (basis: Cumulative Increase)

   a. Backpressure shall not exceed 18 inches of water column at any loading lane abated by A-1.
   b. A-1 shall be provided with a continuous stack temperatur e monitor, this monitor shall operate whenever A-1 is required to be in service and stack temperature averaged over any 1-hr period of use shall be at least 1,400 degrees F
   c. A-1 shall only be used when a vapor accumulator (bladder tank) is in operation.

7. The owner/operator of S-1, S-2, S-3, and S-5 Gasoline Truck/Rail Loading Racks and A-1 John Zink Portable Combustor Vapor Recovery Unit shall maintain the throughput records required by Part 5 and the temperature records required by Part 6b for at least 2 ***years. (basis: Cumulative Increase)***

Following are some ambiguities (such as contradicting emission limits, etc.) in the above permit conditions that should either be deleted/be replaced with an entirely new permit condition:

1. PC 16991 governs the operation of S-5 – loading lane #4 and limits its gasoline throughput to 200,000 gal/day (part 2), and sets an emission limit of 0.05 lb/Mgal (part 3.b.). Because S-5 consists of 3 diesel loading arms, gasoline cannot be loaded at lane #4 unless Equilon modifies the lane. Therefore, it would be reasonable to delete part 2.

   Second, vapors displaced during the loading operations are routed via a common header to A-2 via the bladder tank. Therefore, it is reasonable to expect that the four lanes should demonstrate compliance with only one emission limit (such as the 0.04 lb/Mgal Reg. 8-33-301.2 limit). In light of the above, part 3.b. should be deleted.

2. PC 20973 governs the operation of S-1, S-2, S-3, and S-5 and A-1. It appears A-1 – a portable combustor (thermal oxidizer) is used by Equilon on a temporary basis whenever A-2 is taken out for maintenance, service, or repairs. Part 1 limits the gasoline throughput to 82,625,004 gallons totaled over the cumulative operating period of A-1. Staff review determined that the above limit was established under Application 8538 when Equilon proposed to operate A-1 for 42 days. Specifically, the limit was established using a daily gasoline throughput limit of 1,967,262 gal/day outlined in Exhibit 1 of CARB Executive Order G-70-126. Ideally, the above limit should have been deleted by the staff following notification from Equilon that A-2 was back on-line. In light of the above part 1 should be deleted.

   As was the case with part 3.b. of PC 16991, part 4 establishes a separate emission limit of 0.0182 lb/Mgal when using A-1. The problem is further compounded because the above emission rate is not a CARB “certified” limit. Instead it is an emission rate that was “measured” during a source test to certify A-1 based on testing was conducted by CARB staff on April 11,

2002 at Kinder Morgan Energy Partners in San Jose, CA - a site that is neither owned/operated by Equilon. Rather than have either the facility (Equlion in this case)/a third party vendor (owner of A-1) recertify CARB certified abatement devices (such as A-1) on a site-specific basis, CARB staff[6] confirmed via phone that they found such an exercise to be cumbersome, expensive, and unnecessary to both the affected facilities and their vendors. CARB staff also clarified that A-1's certification at Kinder Morgan Energy Partners in San Jose, CA precluded it from being used during direct mode operation. In other words, Equilon cannot bypass the bladder tank when using A-1. For reasons stated above, part 4 should be deleted.

Equilon would like to retain the flexibility of using the John Zink Portable Combustor Unit (A-1) during those instances when A-2 is taken out for maintenance, service, or repairs and on a temporary basis. A-1 would be used to abate vapors displaced during the gasoline, diesel, and ethanol truck loading operations at S-1, S-2, S-3, and S-5. Assuming the requirement for monitoring the hydrocarbon outlet concentration is targeted at VRUs with carbon absorbers like A-2, the District has advised Equilon to consider using an alternate parametric monitoring approach provided by Regulation 8-33-309.13.2 when using A-1. For the interim, A-1 cannot be used at Equilon until such time they draft a protocol and the District approves the proposed approach. Rather than delay the PO issuance (to enable the Feb'11 CARB source test from being performed) A-1 will be addressed under a separate permitting action.

Rather than amend PC's 16991 and 20973, the District proposes that a new permit condition with the following elements be authored under this permit application:

1. Establish one emission limit (0.04 lb/Mgal) for A-2 per Regulation 8-33-301.2.

2. Codify the existing hourly and daily gasoline throughput limits found in Exhibit 1 of CARB Executive Order G-70-126 when operating A-2 without bypassing the bladder tank.

3. Codify the future hourly and daily gasoline throughput limits based on CARB testing scheduled for February 2011 when operating A-2 in direct mode i.e. bypassing the bladder tank.

4. Assuming the proposed February 2011 CARB source test confirms NMOC emissions from A-2 would be higher than 0.04 lb/1,000 gal when operating in direct mode, impose operational limits (such as limiting the number of active lanes, the number of loading arms that can simultaneously operate, etc.).

Equilon's objective under this permit application (# 21922) is for the District grant them an AC/PO that would allow them to schedule a source test with the CARB. The source test, which will be performed by CARB staff in February 2011, would enable CARB to certify A-2 when operating in direct mode (bypass the bladder tank).

(PC 24846)

1. The owner/operator shall ensure that the combined gasoline throughput at loading racks S-1, S-2, S-3, and S-5 does not exceed 112,800 gallons per hour and 1,967,262 gallons per day. The above throughput limits assume the bladder tank (vapor accumulator) upstream of vapor recovery system (A-2) is not bypassed. (Basis: Exhibit 1, CARB Executive Order G-70-126)

2. Unless stated otherwise in this permit condition, the owner/operator shall ensure that all vapors displaced during the gasoline, diesel, and ethanol truck loading operations at S-1, S-2, S-3, and S-5 are abated at all times by A-2, which shall consist of two carbon adsorber beds operating in parallel and a bladder tank upstream of it. (Basis: Regulation 2-1-403)

3. The owner/operator of the vapor storage tank (bladder tank) upstream of A-2 shall maintain the diaphragms in the bladder tank such that the concentration of total organic compound (TOC) emissions in the airspace above the diaphragm is less than 3,000 ppm expressed as methane, or 6% of the Lower Explosive Limit. The owner/operator shall monitor and record the TOC

[6] January 18, 2011 telephone conversation with Basharat Iqbal (916) 322-7582 at CARB.

concentration in the airspace above the diaphragm with a District approved hydrocarbon analyzer weekly when the bladder tank is in service, during a period when gasoline loading is in progress. (Basis: Regulation 8-33-308)

4. The owner/operator of S-1, S-2, S-3, and S-5 shall ensure that emissions of non-methane organic compounds (NMOCs) from A-2, including emissions associated with switch loading operations, does not exceed 0.04 pounds per 1,000 gallons of organic liquid loaded. The owner/operator shall also ensure that A-2 comply with the gasoline bulk terminal vapor recovery system requirements outlined in Regulation 8-33-309.
(Basis: Regulation 8-33-301.2, Regulation 8-33-309)

5. Starting with the date of issuance of the Authority to Construct pursuant to Application 21877, the owner/operator shall maintain the following records in a District approved log for at least 60 months from the last date of entry:
a. Hourly and daily records of gasoline throughput at loading racks S-1, S-2, S-3, and S-5.

b. Weekly records of TOC concentrations measured via a District approved hydrocarbon analyzer in the airspace above the diaphragm when the bladder tank is in service, during a period when gasoline loading is in progress.

c. NMOC concentrations measured on a continuous basis at the outlet of A-2.

d. Testing and monitoring records required under Regulation 8-33-309 per Regulation 8-33-500.

The owner/operator may choose to maintain the logs in the form of computer-generated data, which is available to District personnel on short notice (rather than actual paper copies).
(Basis: Regulation 2-1-403, Regulation 8-33-500)

6. Within 60-days of receiving a permit from the BAAQMD under Application 21922, the owner/operator of S-1, S-2, S-3, and S-5 shall schedule a source test with the California Air Resources Board (CARB) to certify A-2 when operating in direct mode. Direct mode of operation, for the purposes of this permit condition, shall mean that the bladder tank is bypassed and that vapors displaced during the gasoline, diesel, and ethanol truck loading operations at loading racks S-1, S-2, S-3, and S-5 is routed directly to A-2. The owner/operator shall ensure that A-2 is only operated in direct mode during the duration of the CARB source test.
(Basis: Regulation 2-1-403)

7. On completion of the CARB source test, the owner/operator of S-1, S-2, S-3, and S-5 shall submit the source test results and related CARB certification information to the BAAQMD permit engineer assigned to Plant 11956. The owner/operator shall ensure that A-2 is not operated in direct mode until such time that the BAAQMD permit engineer reviews the submitted information and amends this permit condition accordingly. (Basis: Regulation 2-1-403)

September 2011 amendments to evaluation report:
Following is a recap of operations at the terminal as it relates to the proposed amendments to PC 24846 discussed toward the end of this section:
Equilon operates a petroleum products distribution terminal which consists of four loading racks, S-1 through S-3 & S-5, which house 12 gasoline loading arms, 9 diesel loading arms, 1 ethanol loading arm, and 8 vapor recovery arms. During normal operation gasoline vapors displaced during the loading operations at the loading racks are collected and routed to a bladder holding tank. The collected vapors are then routed to a dual type carbon adsorption vapor-processing unit. In direct or bladder bypass mode, the displaced vapors are routed directly to the vapor processing unit. The vapor processing unit consists of two carbon beds. Hydrocarbon vapors pass through one carbon bed while the other carbon bed is being regenerated. As the vapors pass through the carbon bed, hydrocarbons in the airstream are adsorbed by the carbon and the exhaust is vented to the atmosphere. Each carbon bed is regenerated every 20 minutes.

On February 9th, 2011 Testing & Certification staff with the CARB conducted a vapor certification source test at A-2 when it was operating in direct or bladder bypass mode. The test was performed to determine the compliance status of the vapor recovery unit with respect to CARB certification requirements to certify the unit under Section 41954 of the California Health and Safety Code. To be certified, Section CP-203 of the Certification Procedures (Certification Procedure for Vapor Recovery Systems of Terminals) requires that the vapor recovery system have an emission rate at/below 0.29 pounds of NMOC per 1,000 gallons of gasoline liquid dispensed. Section CP-203 of the Certification Procedures explains that the above emission rate corresponds to a control efficiency of 96.5% by wt. The certification test was started at 0602 hours and lasted until 1211 hours (duration of test was 6 hours and 9 minutes) and a total of 146,291 gallons of gasoline product were loaded at S-1 through S-3. Results from the test revealed that 0.04224 pounds of NMOCs were emitted from A-2 for the total throughput of 146,291 gallons when operating in direct or bladder bypass mode resulting in an emission rate of 0.0003 pounds of NMOC per 1,000 gallons[7]. Refer to CARB Source Test Report for Test # 11-01.

As previously discussed in preceding sections of this evaluation report, effective January 10, 2011, emissions of NMOCs from vapor recovery systems such as A-2 are limited by Reg. 8-33-301.2 to not exceed 0.04 pounds of NMOC per 1,000 gallons of organic liquid loaded. Because CARB's test confirmed the NMOC emission rate when operating in direct or bladder bypass mode is 0.0003 pounds of NMOC per 1,000 gallons, it is reasonable to state that A-2 complies with Reg. 8-33-301.2, i.e., the CARB tested NMOC emission rate is 99.25% below the Reg. 8-33 limit.

Reg. 8-33-309.10 states:
"**8-33-309 Gasoline Bulk Terminal Vapor Recovery System Requirements:**
Vapor recovery systems are subject to the following requirements:
309.10 Effective January 10, 2011, a backpressure monitor shall be installed on the vapor collection piping of each loading rack. The backpressure monitors shall be located on the fixed vapor piping as close to the vapor hose connectors as feasible. Alternate locations may be utilized subject to prior approval by the APCO. Backpressure monitors shall be correlation tested annually, with pressure measured at the loading rack / cargo tank interface. The APCO (Attention: Source Test) shall be notified at least seven (7) days prior to the correlation test."

In accordance with terms and conditions that were part of the PO issued under A# 22832, Equilon installed 8 backpressure monitors (1 BPM/vapor recovery arm; 2 vapor recovery arms/truck lane; 1 truck lane/loading rack; 4 loading racks) and associated fugitive components during the week of December 25th, 2010 and correlation tested the BPMs on February 2nd, 2011 with pressure measured at the loading rack/cargo tank interface to ensure compliance with Reg. 8-33-309.2, which states:

"**8-33-309 Gasoline Bulk Terminal Vapor Recovery System Requirements:**
Vapor recovery systems are subject to the following requirements:
309.2 Vapor recovery systems shall be operated and maintained such that the gauge pressure at the cargo tank / vapor hose interface does not exceed 18.0 inches of water column during product loading operations."

CARB testing conducted on February 9th, 2011 confirmed that Equilon did not exceed the 18 inches of water column backpressure requirement at the loading rack during the certification test. However, CARB staff did observe a maximum backpressure of 17 inches of water column at the farthest arm from A-2 when 1 loading rack was operated with 2 vapor recovery arms and 2 fueling arms in use.

CARB staff recommended the following when operating A-2 in in direct or bladder bypass mode:

1. The maximum backpressure at any lane of the truck loading rack shall not exceed 18 inches of water column.
2. A maximum of 2 fueling arms (with 2 vapor recovery arms) may be used at one time.

In light of all of the above information, PC 24846 is being amended as follows:

[7] 0.0003 lb NMOC/Mgal = (0.04224 lb NMOC ÷ 146,291 gal) x (1,000 gal/Mgal)

1. The owner/operator shall ensure that the combined gasoline throughput at loading racks S-1, S-2, S-3, and S-5 does not exceed 112,800 gallons per hour and 1,967,262 gallons per day. The above throughput limits assume the bladder tank (vapor accumulator) upstream of vapor recovery system (A-2) is not bypassed. (Basis: Exhibit 1, CARB Executive Order G-70-126)

2. Unless stated otherwise in this permit condition, the owner/operator shall ensure that all vapors displaced during the gasoline, diesel, and ethanol truck loading operations at S-1, S-2, S-3, and S-5 are abated at all times by A-2, which shall consist of two carbon adsorber beds operating in parallel and a bladder tank upstream of it. (Basis: Regulation 2-1-403)

3. The owner/operator of the vapor storage tank (bladder tank) upstream of A-2 shall maintain the diaphragms in the bladder tank such that the concentration of total organic compound (TOC) emissions in the airspace above the diaphragm is less than 3,000 ppm expressed as methane, or 6% of the Lower Explosive Limit. The owner/operator shall monitor and record the TOC concentration in the airspace above the diaphragm with a District approved hydrocarbon analyzer weekly when the bladder tank is in service, during a period when gasoline loading is in progress. (Basis: Regulation 8-33-308)

4. The owner/operator of S-1, S-2, S-3, and S-5 shall ensure that emissions of non-methane organic compounds (NMOCs) from A-2, including emissions associated with switch loading operations, does not exceed 0.04 pounds per 1,000 gallons of organic liquid loaded. The owner/operator shall also ensure that A-2 complies~~y~~ with the gasoline bulk terminal vapor recovery system requirements outlined in Regulation 8-33-309.
(Basis: Regulation 8-33-301.2, Regulation 8-33-309)

5. Direct or bladder bypass mode mode of operation, for the purposes of this permit condition, shall mean that the bladder tank is bypassed and that vapors displaced during the gasoline, diesel, and ethanol truck loading operations at loading racks S-1, S-2, S-3, and S-5 is routed directly to A-2. The owner/operator of S-1, S-2, S-3, and S-5 shall ensure that emissions of non-methane organic compounds (NMOCs) from A-2, including emissions associated with switch loading operations, does not exceed 0.04 pounds per 1,000 gallons of organic liquid loaded when operating A-2 in direct mode. The owner/operator shall also ensure that A-2 complies with the gasoline bulk terminal vapor recovery system requirements outlined in Regulation 8-33-309 when operating in direct mode.
(Basis: Regulation 8-33-301.2, Regulation 8-33-309)

6. The owner/operator shall ensure the following requirements are met when operating A-2 in direct mode:
   (a) The combined gasoline throughout at loading racks S-1, S-2, S-3, and S-5 does not exceed 146,291 gallons in any 6-hour period.
   (b) The maximum backpressure at any lane of the truck loading rack shall not exceed 18 inches of water column.
   (c) A maximum of 2 fueling arms (with 2 vapor recovery arms) may be used at one time.
   (Basis: Regulation 2-1-403, Regulation 8-33-309, CARB Source Test Report for Test #11-01)

7. Starting with the date of issuance of the Authority to Construct pursuant to Application ~~21877~~21922, the owner/operator shall maintain the following records in a District approved log for at least 60 months from the last date of entry:
a. Hourly and daily records of gasoline throughput at loading racks S-1, S-2, S-3, and S-5.

b. Hourly and daily records of gasoline throughput at loading racks S-1, S-2, S-3, and S-5 when operating A-2 in direct mode.

c. The date(s) and duration of time(s) that A-2 is operated in direct mode.

~~b~~d. Weekly records of TOC concentrations measured via a District approved hydrocarbon analyzer in the airspace above the diaphragm when the bladder tank is in service, during a period when gasoline

loading is in progress.

~~c~~e. ~~.~~ NMOC concentrations measured on a continuous basis at the outlet of A-2.

~~d.~~ f. Testing and monitoring records required under Regulation 8-33-309 per Regulation 8-33-500.

The owner/operator may choose to maintain the logs in the form of computer-generated data, which is available to District personnel on short notice (rather than actual paper copies).

~~•~~ (Basis: Regulation 2-1-403, Regulation 8-33-500)

~~5. Within 60-days of receiving a permit from the BAAQMD under Application 21922, the owner/operator of S-1, S-2, S-3, and S-5 shall schedule a source test with the California Air Resources Board (CARB) to certify A-2 when operating in direct mode. Direct mode of operation, for the purposes of this permit condition, shall mean that the bladder tank is bypassed and that vapors displaced during the gasoline, diesel, and ethanol truck loading operations at loading racks S-1, S-2, S-3, and S-5 is routed directly to A-2. The owner/operator shall ensure that A-2 is only operated in direct mode during the duration of the CARB source test.~~
~~(Basis: Regulation 2-1-403)~~
~~6. On completion of the CARB source test, the owner/operator of S-1, S-2, S-3, and S-5 shall submit the source test results and related CARB certification information to the BAAQMD permit engineer assigned to Plant 11956. The owner/operator shall ensure that A-2 is not operated in direct mode until such time that the BAAQMD permit engineer reviews the submitted information and amends this permit condition accordingly. (Basis: Regulation 2-1-403)~~

RECOMMENDATION

Issue Equilon a revised PO ~~to~~ with the amended PC 24846~~schedule a source test with the CARB to certify A-2, which abates~~for the following sources~~, when operating in direct mode (bypass the bladder tank)~~:

S-1: Loading Rack;
1 lane consisting of 4 gasoline loading arms, 2 diesel loading arms and 2 vapor recovery arms; loading rate of 600 GPM per gasoline and diesel loading arm; bottom loading

S-2: Loading Rack;
1 lane consisting of 4 gasoline loading arms, 2 diesel loading arms and 2 vapor recovery arms; loading rate of 600 GPM per gasoline and diesel loading arm; bottom loading

S-3: Loading Rack;
1 lane consisting of 4 gasoline loading arms, 2 diesel loading arms, 1 ethanol loading arm and 2 vapor recovery arms; loading rate of 600 GPM per gasoline and diesel loading arm; loading rate of 49 GPM for the ethanol loading arm; bottom loading

S-5: Loading Rack;
1 lane consisting of 3 diesel loading arms and 2 vapor recovery arms; loading rate of 600 GPM per diesel loading arm; bottom loading

_____
K. R. Bhagavan

Application 22832, Back Pressure Monitors on A-2 Vapor Recovery System

ENGINEERING EVALUATION
Equilon Enterprises, LLC, Plant: 11956
Application: 22832

BACKGROUND

Equilon Enterprises, LLC (Equilon), a bulk storage and loading terminal for petroleum products, submitted this permit application to the District in December 2010 to obtain an Authority to Construct (AC) and Permit to Operate (PO) to install back pressure monitors (BPMs) and associated fugitive components on the vapor collection piping at each of their four existing loading racks described below:

S-1: Loading Rack;
1 lane consisting of 4 gasoline loading arms, 2 diesel loading arms and 2 vapor recovery arms; loading rate of 600 GPM[8] per gasoline and diesel loading arm; bottom loading

S-2: Loading Rack;
1 lane consisting of 4 gasoline loading arms, 2 diesel loading arms and 2 vapor recovery arms; loading rate of 600 GPM per gasoline and diesel loading arm; bottom loading

S-3: Loading Rack;
1 lane consisting of 4 gasoline loading arms, 2 diesel loading arms, 1 ethanol loading arm and 2 vapor recovery arms; loading rate of 600 GPM per gasoline and diesel loading arm; loading rate of 49 GPM for the ethanol loading arm; bottom loading

S-5: Loading Rack;
1 lane consisting of 3 diesel loading arms and 2 vapor recovery arms; loading rate of 600 GPM per diesel loading arm; bottom loading

Installing the 8 BPMs (1 BPM/vapor recovery arm; 2 vapor recovery arms/truck lane; 1 truck lane/loading rack; 4 loading racks) and associated fugitive components, 30 valves (needle and ball) and 66 connectors[9], on the vapor collection piping at Equilon's four loading racks were required by the April 2009 amendments to Regulation 8 "Organic Compounds", Rule 33 "Gasoline Bulk Terminals and Gasoline Cargo Tanks". Specifically, the Reg. 8-33 amendments required Equilon (and other bulk terminal operators) to come into compliance with Reg. 8-33-309.10 on/before January 10, 2011 (effective date in the rule), which states:

> **"Gasoline Bulk Terminal Vapor Recovery System Requirements:** Vapor recovery systems are subject to the following requirements:
> 309.10 Effective January 10, 2011, a backpressure monitor shall be installed on the vapor collection piping of each loading rack. The backpressure monitors shall be located on the fixed vapor piping as close to the vapor hose connectors as feasible. Alternate locations may be utilized subject to prior approval by the APCO. Backpressure monitors shall be correlation tested annually, with pressure measured at the loading rack / cargo tank interface. The APCO (Attention: Source Test) shall be notified at least seven (7) days prior to the correlation test."

Each of Equilon's four loading racks consists of 1 truck lane which can accommodate either one semi-truck w/o a trailer or one semi-truck w/ a trailer at any given time (loading event). The semi-trucks and their trailers can either consist of a single large compartment to receive any one product (regular/premium gasoline, diesel, or ethanol), or they can have multiple smaller compartments to receive combinations of the above products. For example, say a semi-truck has a single compartment and its trailer has three compartments (4 total), the semi-truck could receive and store regular gasoline in its

[8] GPM – Gallons per minute
[9] Equilon initially planned to install 8 valves (vs. 30 valves) and 48 connectors (vs. 66 connectors).

single compartment, and its trailer could store regular gasoline, premium gasoline, and diesel in each of its 3 compartments.
Products are loaded into the semi-trucks and their trailers at Equilon's four loading racks via bottom loading and eight 4" flexible vapor hoses (2 vapor hoses per truck lane – 1 for semi-truck and 1 for trailer) convey the vapors displaced during the loading operations to a 12" fixed piping header that routes the vapors to A-2, which is described as follows:

A-2: Vapor Recovery System;
Consisting of one vapor bladder tank upstream of two carbon adsorbers in parallel; John Zink Company Model # AA-825-5-15B with booster; 200 CFM capacity; Dimension of vapor bladder tank: 30' diameter x 32' height; Dimension of each carbon adsorber: 4' diameter x 17' height

EMISSIONS CALCULATION

Equilon requested the District to consider exempting the installation and subsequent operation of the BPMs and fugitive components (hereinafter project) under Reg. 2-1-128.21, which states:

> **"Exemption, Miscellaneous Equipment:** The following equipment is exempt from the requirements of Sections 2-1-301 and 302, provided that the source does not require permitting pursuant to Section 2-1-319.
> 128.21 Modification, replacement, or addition of fugitive components (e.g. valves, flanges, pumps, compressors, relief valves, process drains) at existing permitted process units at petroleum refineries, chemical plants, bulk terminals or bulk plants, provided that the cumulative emissions from all additional components installed at a given process unit during any consecutive twelve month period do not exceed 10 lb/day, and that the components meet applicable requirements of Regulation 8 rules."

Because the probability of any fugitive component (valves or connectors) being a pegged leaker exists, it was likely that the hourly/annual TAC emissions from the leaking component(s) could exceed the acute and/or chronic TAC trigger levels in Table 2-5-1 in Reg. 2-5. Therefore, the District decided against exempting the project under Reg. 2-1-128.21, especially in light of Reg. 2-1-316. Refer to Table 6 of the Attachment.

Instead of granting Equilon an exemption under Reg. 2-1-128.21, the District considered evaluating the project as an alteration, i.e. physical modifications to a source that would not result in an increase in emissions. Total Organic Compound (TOC) emissions from the project to install 30 valves and 66 connectors were estimated via the average emission factor method, the screening value range method, and the correlation method. The correlation method – the most conservative of the above three methods, assumed that 1 valve (out of the 30 valves installed) and 1 connector (out of the 66 connectors installed) would be pegged at 10,000 ppmv, and that the loading operations at Equilon would occur 24 hours/day, 365 days/year, and for 8,760 hours/year. The combined (valve + connector) hourly, daily, and annual TOC emissions estimated via the correlation method were 0.22 pounds/hour, 5.23 pounds/day, and 1,907.96 pounds/year, respectively. Refer to Table 4 of the Attachment.

Whereas it is true that the emissions from the project were estimated very conservatively as discussed above, it is also true that that the project resulted in an emissions increase, therefore, the project would not have been treated as an alteration based on Reg. 2-1-233.

However, Reg. 1-115 states:

> "**Exemption, Modification to Meet Emission Standards:** When permits are necessary for modifying an existing source in order to comply with emission regulations such modifications shall not subject the existing source to emission standards for new or modified plants as set forth in Section 2-2-301 or 2-2-302 or 2-2-303 of Regulation 2, Permits."

As previously discussed, the installation of the BPMs and fugitive components on the vapor collection piping at Equilon's four loading racks were required by the April 2009 amendments to Reg. 8-33.

Therefore, per Reg. 1-115, the changes to S-1, S-2, S-3, and S-5 are not subject to BACT and offsets. Because the project is being treated as an alteration, the cumulative increase in emissions is zero.

TOXIC RISK SCREEN ANALYSIS

It can be seen from Table 6 of the Attachment that the annual benzene emissions of 4.50 pounds/year from the fugitive components (including pegged leakers) exceeds the chronic trigger level of 3.80 pounds/year for benzene when using the correlation equation assuming 8,760 hours/year of operation. As previously discussed, the above emissions (for benzene and other TACs) were conservatively estimated, i.e., the probability of having fugitive components pegged for an entire year is slim at best.

Rather than perform a Health Risk Screening Analysis (HRSA) and impose operational restrictions on the loading operations at the terminal, the District decided to have Equilon (and other bulk terminal operators) monitor the fugitive components installed to come into compliance with Reg. 8-33-309.10 for leaks, i.e., over 100 ppm TOC expressed as methane, on a quarterly basis. In addition to the above, the District imposed a permit condition for the owner/operator of a leaking component(s) to repair it and re-inspect the leak within 60 days of discovering a leak[10].

In sum, an HRSA, though warranted when assuming a fugitive component would be pegged for an entire year, was not performed because the permit conditions, which are discussed toward the end of this report, would require the owner/operator to fix the leaking component within 60 days of leak discovery. Therefore, the TAC emissions (benzene in this case) would be well below their corresponding Table 2-5-1 acute/chronic trigger levels.

STATEMENT OF COMPLIANCE

Exhibit 1 in CARB Executive Order G-70-126 limits the POC emissions from A-2 to 0.08 pounds/1,000 gallons of gasoline loaded.

Sources S-1, S-2, S-3, and S-5 and A-2 are subject to Regulation 8 “Organic Compounds”, Rule 33 “Gasoline Bulk Terminals and Gasoline Cargo Tanks”. As previously discussed under the “Emissions Calculation” section above and effective January 10, 2011, emissions of non-methane organic compounds (NMOCs) from vapor recovery systems such as A-2 are limited by Reg. 8-33-301.2 to not exceed 0.04 pounds/1,000 gallons of organic liquid loaded. In addition, switch loading operations abated by A-2 are also subject to the above standard.

Sources S-1, S-2, S-3, and S-5 are also subject to 40 CFR 60, Subpart XX (NSPS XX) “Standards of Performance for Bulk Gasoline Terminals” and 40 CFR 63, Subpart R (MACT R) “National Emission Standards for Gasoline Distribution Facilities (Bulk Gasoline Terminals and Pipeline Breakout Stations).” Equilon’s loading racks (S-1, S-2, S-3, and S-5) are subject to the standards in Section 60.502 of NSPS XX and to the standards in Section 63.422 of MACT R. Specifically, Section 60.502(c) in NSPS XX limits the emissions to the atmosphere from an existing vapor processing system (such as A-2) to not exceed 80 milligrams of total organic compounds per liter of gasoline loaded. Section 63.422(a) subjects existing loading racks (such as those at Equilon that were constructed/modified after December 17, 1980) to the NSPS XX standard referenced above. The NSPS XX standard of 80 milligrams of total organic compounds (TOC) per liter of gasoline loaded translates to 0.67 pounds of TOC per 1,000 gallons of gasoline loaded[11]. The most stringent limit in the above Federal rules is the 10 milligrams of total organic compounds per liter of gasoline loaded for <u>new</u> sources (not applicable to Equilon which is an <u>existing</u> source) in MACT R, which translates to 0.08 pounds of TOC per 1,000 gallons of gasoline.

To recap, A-2 is subject to three limits:

4. CARB certified POC limit of 0.08 pounds/1,000 gallons of gasoline loaded.
5. Regulation 8-33-301.2 NMOC limit of 0.04 pounds/1,000 gallons of organic liquid loaded.
6. NSPS XX TOC limit of 0.67 pounds/1,000 gallons of gasoline loaded.

[10] Refer to e-mails from NSR section manager dated December 2nd and 8th, 2010.
[11] 0.67 lb/Mgal = (80 mg/L) x (3.79 L/gal) x (1,000 gal/Mgal) x (lb/454,000 mg)

It can be seen that the Regulation 8-33-301.2 limit is the most stringent of the above limits. Therefore, compliance with Reg. 8-33-301.2 would assure compliance with the CARB certification and NSPS XX.

Reg. 8-33-309.10:

The installation of the 8 BPMs (1 BPM/vapor recovery arm; 2 vapor recovery arms/truck lane; 1 truck lane/loading rack; 4 loading racks) and associated fugitive components (30 valves and 66 connectors) on the vapor collection piping at Equilon's four loading racks (S-1, S-2, S-3, and S-5) was required by the April 2009 amendments to Reg. 8-33. Specifically, the Reg. 8-33 amendments required Equilon (and other bulk terminal operators) to come into compliance with Reg. 8-33-309.10 on/before January 10, 2011 (effective date in the rule) by installing BPMs on the fixed vapor piping as close to the vapor hose connectors as feasible.

Equilon installed the BPMs and the associated fugitive components during the week of December 25th, 2010 and correlation tested the BPMs on February 2nd, 2011 with pressure measured at the loading rack/cargo tank interface to ensure compliance with Reg. 8-33-309.2, which states:

> **"8-33-309 Gasoline Bulk Terminal Vapor Recovery System Requirements:** Vapor recovery systems are subject to the following requirements:
> 309.2 Vapor recovery systems shall be operated and maintained such that the gauge pressure at the cargo tank / vapor hose interface does not exceed 18.0 inches of water column during product loading operations."

In light of the above, eight pressure gauges were installed at the vapor hose/cargo tank interface to record the vapor pressure and determine any differential pressure when compared against the eight fixed sense pressure transmitters for the corresponding front (semi-truck) or rear (trailer) 4" vapor hose connections to the 12" fixed piping header that routes the vapors to A-2. The eight pressure transmitters are connected to the 4" fixed lateral piping upstream of the 12" fixed piping header.

The correlation test data was developed with four individual tests to help determine the differential pressure (Δ p across the vapor hose) between the interface pressure and sensor pressure. In tests 1 and 2, two trucks were simultaneously loaded, and three trucks were simultaneously loaded in tests 3 and 4. The tests determined the maximum Δ p across the vapor hose of 6" WC when three trucks were simultaneously loaded with ten loading arms connected, and noted that loading more than 2 compartments per vapor hose at the same time increased the Δ p across the vapor hose.
Refer to the attachment that summarizes the raw test data recorded on February 2nd, 2011.

In sum, the correlation test concluded that a 9" WC reading at the vapor hose/cargo tank interface correlated to a 3" WC reading at the BPMs. In light of the above and in order to demonstrate compliance with Reg. 8-33-309.11.1 and 309.11.2, the alarm settings for the pressure transmitters at Equilon are set at 12" WC for alarm (lower than 16" WC prescribed in Reg. 8-33-309.11.1) and 13.9" WC (lower than 18" WC or more prescribed in Reg. 8-33-309.11.2) for shutdown of products loading. The above alarm and shutdown settings, though conservative, are intended to ensure that the pressure recorded by the BPMs would never exceed 18" WC at the vapor hose/cargo tank interface.

The California Environmental Quality Act (CEQA):

Per Section 2-1-311 of the District Rules and Regulations, a permit application for a proposed new or modified source will be classified as ministerial and will accordingly be exempt from the CEQA requirement of Section 2-1-310 if the District's engineering evaluation and basis for approval of the permit application for the project is limited to the criteria set forth in Section 2-1-428 and to the procedures, fixed standards and objective measurements set forth in the District's Permit Handbook and BACT/TBACT Workbook. The method for determining whether a given permit application will be classified as ministerial is set forth in Section 2-1-427.

Per Section 2-1-427, if the District determines that its evaluation of the permit application is covered by the specific procedures, fixed standards and objective measurements set forth in the District's Permit Handbook and BACT/TBACT Workbook, the District's evaluation of the permit application is classified as ministerial and the engineering evaluation of the permit application by the District will be limited to the use of said specific procedures, fixed standards and objective measurements. For such projects, the District

will merely apply the law to the facts as presented in the permit application, and the District's decision regarding whether to issue the permit will be based only on the criteria set forth in Section 2-1-428 and in the District's Permit Handbook and BACT/TBACT Workbook.

The District's Permit Handbook Chapter 3.1 "Bulk Loading Facilities" addresses sources such as S-1, S-2, S-3, and S-5. Therefore, this permit evaluation can be classified as ministerial.

In addition to the above ministerial exemption, the project is categorically exempt from CEQA per Reg. 2-1-312.3 because it is a project "…undertaken for the sole purpose of bringing an existing facility into compliance with newly adopted regulatory requirements of the District..."

S-1, S-2, S-3, and S-5 are not located within 1,000 feet of the outer-boundary of the nearest public school. Therefore, the project to permit the above sources is not subject to the public notification requirements contained in Regulation 2-1-412.

NSPS (Subpart XX) and NESHAPS (MACT R) are applicable to S-1, S-2, S-3, and S-5.

PERMIT CONDITIONS

As previously discussed, the District decided to evaluate changes required by the Reg. 8-33 amendments as alterations (instead of modifications). Therefore, this application qualified for an accelerated permit under the auspices of Reg. 2-1-106 and was deemed complete on December 8th, 2010. As a result, Equilon was issued a temporary PO to install the 8 BPMs and associated fugitive components (8 valves and 48 connectors) with the following permit conditions, which were e-mailed (and not formally mailed) to Equilon and their consultant:

1. Within 30 days of installing the back pressure monitors on the vapor collection piping of each loading rack abated by A-2 and the related fugitive components, such as but not limited to connectors, flanges, open-ended lines, pump seals, and valves as required by the 2009 amendments to Regulation 8, Rule 33, the owner/operator shall provide the permit engineer in the Bay Area Air Quality Management District's (herein after District) Engineering Division assigned to Plant 11956 a final count of all fugitive components installed, along with each installed component's unique and permanent identification number.
   [Basis: Regulation's 2-1-403 and 8-33-309.10]

2. Until such time a final count of all fugitive components installed is provided to the District's permit engineer assigned to Plant 11956 and for the interim, the owner/operator has proposed to and has been permitted by the District under Application 22832 to install the following fugitive components: 48 connectors; 8 bellow valves
   [Basis: Cumulative Increase, Regulation 2, Rule 5, Regulation 8, Rule 33]

3. On a quarterly basis, the owner/operator shall monitor the fugitive components installed as part of Application 22832 for leaks with a device such as, but not limited to, a flame ionization detector (FID). For the purposes of this permit condition, a leak is defined as the concentration of total organic compounds (TOC) above background, expressed as methane, as measured 1 centimeter or less from a leaking fugitive component using EPA Reference Method 21 (40 CFR 60, Appendix A). [Basis: Regulation 8, Rule 33]

4. Within 60 days of discovering a leak, the owner/operator shall repair and re-inspect all fugitive components installed under Application 22832 that are found to be leaking in excess of 100 ppm of TOC expressed as methane. [Basis: Regulation 2-1-403 and Regulation 2, Rule 5]

5. Each backpressure monitor installed by the owner/operator under Application 22832 shall be correlation tested as follows:

   a. The owner/operator shall conduct a District-approved correlation source test within 60 days of startup and annually thereafter, with pressure measured at the loading rack/cargo tank interface.

b. The owner/operator shall submit a correlation testing protocol for each backpressure monitor installed under Application 22832 to be reviewed and approved by the Source Test Manager at least 15 days prior to conducting testing.
c. The owner/operator shall notify the Manager of Source Test Section (STS) at least 7 days prior to the date the test is to be conducted, and shall submit the final source test reports to the above individual within 60 days of testing.

Protocol, notification and final report submission should be made electronically by the owner/operator to the Manager of Source Test at: sourcetest@baaqmd.gov. [Basis: Regulation 8, Rule 33]

6. The owner/operator shall maintain a District-approved monthly log of monitoring results and leak repairs performed at fugitive components installed as part of Application 22832 for at least 24 months from date of entry (60 months if the facility has been issued a Title V Major Facility Review Permit or a Synthetic Minor Operating Permit). The log may be in the form of computer-generated data, which is available to District personnel on short notice (rather than actual paper copies). [Basis: Regulation 2-1-403]

As previously discussed, Equilon installed the 8 BPMs and the associated fugitive components (30 valves vs. 8 valves they initially proposed and 66 connectors vs. 48 connectors they initially proposed) the week of December 25th, 2010. In light of the above, the following changes have been made to the above permit conditions:

(PC 25008)

~~1. Within 30 days of installing the back pressure monitors on the vapor collection piping of each loading rack abated by A-2 and the related fugitive components, such as but not limited to connectors, flanges, open-ended lines, pump seals, and valves as required by the 2009 amendments to Regulation 8, Rule 33, the owner/operator shall provide the permit engineer in the Bay Area Air Quality Management District's (herein after District) Engineering Division assigned to Plant 11956 a final count of all fugitive components installed, along with each installed component's unique and permanent identification number.~~
~~[Basis: Regulation's 2-1-403 and 8-33-309.10]~~

~~2. Until such time a final count of all fugitive components installed is provided to the District's permit engineer assigned to Plant 11956 and for the interim, the owner/operator has proposed to and has been permitted by the District under Application 22832 to install the following fugitive components: 48 connectors; 8 bellow valves~~
~~[Basis: Cumulative Increase, Regulation 2, Rule 5, Regulation 8, Rule 33]~~

~~3.~~1. On a quarterly basis, the owner/operator shall monitor the fugitive components (30 valves and 66 connectors) installed as part of Application 22832 for leaks with a device such as, but not limited to, a flame ionization detector (FID). For the purposes of this permit condition, a leak is defined as ~~the~~ a concentration of total organic compounds (TOC) of 100 ppm above background, expressed as methane, as measured 1 centimeter or less from a leaking fugitive component using EPA Reference Method 21 (40 CFR 60, Appendix A). [Basis: Regulation 8, Rule 33]

~~4.~~2. Within 60 days of discovering a leak, the owner/operator shall repair and re-inspect all fugitive components installed under Application 22832 that are found to be leaking in excess of 100 ppm of TOC expressed as methane. [Basis: Regulation 2-1-403 and Regulation 2, Rule 5]

~~5.~~3. Each of the eight backpressure monitors installed by the owner/operator under Application 22832 shall be correlation tested as follows:

a. The owner/operator shall conduct a District-approved correlation source test ~~within 60 days of startup and~~ annually ~~thereafter,~~ with pressure measured at the loading rack/cargo tank interface.
b. The owner/operator shall submit a correlation testing protocol for each backpressure monitor installed under Application 22832 to be reviewed and approved by the Source Test Manager at least 15 days prior to conducting testing.

c. The owner/operator shall notify the Manager of Source Test Section (STS) at least 7 days prior to the date the test is to be conducted, and shall submit the final source test reports to the above individual within 60 days of testing.

Protocol, notification and final report submission should be made electronically by the owner/operator to the Manager of Source Test at: sourcetest@baaqmd.gov. [Basis: Regulation 8, Rule 33]

~~6.~~4. The owner/operator shall maintain a District-approved monthly log of monitoring results and leak repairs performed at fugitive components installed as part of Application 22832 for at least 24 months from date of entry (60 months if the facility has been issued a Title V Major Facility Review Permit or a Synthetic Minor Operating Permit). The log may be in the form of computer-generated data, which is available to District personnel on short notice ~~(~~rather than actual paper copies~~)~~. [Basis: Regulation 2-1-403]

RECOMMENDATION

Issue Equilon a PO for alterations involving the installation of back pressure monitors and associated fugitive components on the vapor collection piping at the following sources:

S-1: Loading Rack;
1 lane consisting of 4 gasoline loading arms, 2 diesel loading arms and 2 vapor recovery arms; loading rate of 600 GPM per gasoline and diesel loading arm; bottom loading

S-2: Loading Rack;
1 lane consisting of 4 gasoline loading arms, 2 diesel loading arms and 2 vapor recovery arms; loading rate of 600 GPM per gasoline and diesel loading arm; bottom loading

S-3: Loading Rack;
1 lane consisting of 4 gasoline loading arms, 2 diesel loading arms, 1 ethanol loading arm and 2 vapor recovery arms; loading rate of 600 GPM per gasoline and diesel loading arm; loading rate of 49 GPM for the ethanol loading arm; bottom loading

S-5: Loading Rack;
1 lane consisting of 3 diesel loading arms and 2 vapor recovery arms; loading rate of 600 GPM per diesel loading arm; bottom loading

K. R. Bhagavan

Application 23707, A-3 Portable Thermal Oxidizer
EVALUATION REPORT
Equilon Enterprises LLC
Application #23707- Plant #11956

I. BACKGROUND

Equilon Enterprises LLC, bulk storage and loading terminal for petroleum products, has applied for an Authority to Construct/Permit to Operate for the following equipment:

A-3 Portable Thermal Oxidizer, 45 MMBtu/hr capacity, to abate existing sources S-1, S-2, S-3, and S-5, Loading Racks

This portable trailer mounted combustor is used primarily in gasoline loading facilities and marine loading facilities as an abatement device when the fixed vapor handling unit is out of service, usually for maintenance reasons. In order for A-3 be treated as portable equipment, each pollutant must emit less than 10 ton per year. Therefore, the natural gas input flow rate for A-3 will be limited by the CO emissions, where CO is the highest emission factor. Envent Corporation will be required to install a non-resettable flow meter that measures and records the total fuel input into A-3.

II. EMISSION CALCULATIONS

Emission increase from the process is not expected from the installation of this thermal oxidizer. Combustion emissions from natural gas will be added to the cumulative increase.

Emission increases from combustion of natural gas at thermal oxidizer:

Basis:

* Total fuel throughput (45 MMBtu/hr capacity) = 15,120 MMBtu/yr of natural gas or propane.
* Operation hours = 24 hour/day, 7 day/wk, 2 wk/yr
* Heat capacity = 1,020 MMBtu/10^6 ft^3 natural gas (or 2,570 MMBtu/10^6 ft^3 propane)
* NOx = 0.2 lb/MMBtu (50 ppmv @ 15% O_2), and CO = 0.8 lb/MMBtu (350 ppmv @ 15% O_2) – Memo on RACT levels for thermal oxidizer dated April 13, 1999.
* Other emission factors taken from AP-42, Table 1.4-2 (revised 7/1/98) for small boiler <100 MMBtu/hr
  NOx = 0.2 lb/MMBtu
  CO = 0.8 lb/MMBtu
  SO_2 = (0.6 lb/MMscf)/(1020 MMBtu/10^6 ft^3) = 5.882 x 10^{-4} lb/MMBtu
  PM_{10} = (7.6 lb/MMscf)/(1020 MMBtu/10^6 ft^3) = 0.00745 lb/MMBtu
  POC = (5.5 lb/MMscf)/(1020 MMBtu/10^6 ft^3) = 0.00539 lb/MMBtu
  NPOC = (2.3 lb/MMscf)/(1020 MMBtu/10^6 ft^3) = 0.00225 lb/MMBtu

Combustion Emission Calculations:

NOx = 15,120 MMBtu/yr X 0.2 lb/MMBtu = 3,024 lb/yr, or 1.51 ton/yr
CO = 15,120 MMBtu/yr X 0.8 lb/MMBtu = 12,096 lb/yr, or 6.05 ton/yr
SO2 = 15,120 MMBtu/yr X 0.0005882 lb/MMBtu = 8.89 lb/yr, or 0.0045 ton/yr
PM10 = 15,120 MMBtu/yr X 0.00745 lb/MMBtu = 112.64 lb/yr, or 0.0563 ton/yr
POC = 15,120 MMBtu/yr X 0.00539 lb/MMBtu = 81.5 lb/yr, or 0.0408 ton/yr
NPOC = 15,120 MMBtu/yr X 0.00225 lb/MMBtu = 34.0 lb/yr, or 0.017 ton/yr

III. PLANT CUMULATIVE INCREASE

	Current Ton/yr	New Ton/yr	New Total Lbs/yr	New Total Tons/yr
POC =	0.000	0.041	81.50	0.041
NO_X =	0.508	1.512	3,024	2.020
SO_2 =	0.000	0.005	8.89	0.005
CO =	1.157	6.048	12,096	7.205
NPOC =	0.000	0.017	34.0	0.017
PM_{10} =	0.00	0.056	112.6	0.056

IV. TOXIC SCREENING ANALYSIS

A risk analysis was not required for this application since the toxic emissions did not exceed the respective toxic trigger levels.

V. BEST AVAILABLE CONTROL TECHNOLOGY

Thermal Oxidizer, A-3, triggers BACT for NOx and CO if natural gas is used as fuel. BACT is not required for a secondary pollutant as stated in Regulation 2-2-112; however it must meet RACT. The District determinations of RACT for NOx emissions from A-3 is 0.2 lb NOx/MMBtu, and for CO emissions is 0.8 lb CO/MMBtu as stated in the interoffice memo dated April 13, 1999 for secondary pollutant emissions from thermal oxidizer (in this case combustor's combustion emissions). Thermal Oxidizer A-3 will be conditioned to meet the above requirements.

The liquid transfer & handling process from which A-3 is abating required BACT (2) level of 0.02 lb/1000 gallons of liquid loaded or a destruction efficiency greater than or equal to 98.5%. A-3 will be required to demonstrate the control efficiency to meet the new revised BACT (2) in its permit condition.

VI. OFFSETS

Offsets are not required since the facility's NOx emissions are much less than 15 ton/yr per Regulation 2-2-302.

VII. STATEMENT OF COMPLIANCE

The Combustor, A-3, is subject and expected to be in compliance with Regulation 8-33 – Gasoline Bulk Terminals and Gasoline Delivery Vehicles, Regulation 8-39 – Gasoline Bulk Plants and Gasoline Delivery Vehicle, and Regulation 8-44 – Marine Vessel Loading Terminals. A-3 will meet the emission limits of 0.08 lb/1000 gallons of liquid loaded in Reg. 8-33, 0.5 lb/1000 gallons of liquid loaded in Reg. 8-39, and 2 lb/1000 barrels in Reg. 8-44, because it will meet BACT(2) requirement of 0.02 lb/1000 gallon, which is more stringent than regulations.

This project is considered to be categorically exempt under the District's CEQA Regulation 2-1-312-2 for installation of pollution control or abatement equipment,

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 and therefore is not discretionary as defined by CEQA.

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

A toxic risk screening analysis is not required.

BACT, PSD, NSPS, and NESHAPS are not triggered.

CONDITIONS

COND# 25116 ----------

Permit conditions for A-3, Portable Thermal Oxidizer, Application #23707, Equilon Enterprises, LLC dba Shell Oil Products US, Plant # 11956.

1. Nitrogen oxides (NOx) emissions from the Portable Thermal Oxidizer, A-3, shall not exceed 50 ppmvd at 15% O2 (0.20 lb/MMBtu). [Basis: RACT]

2. Carbon monoxide (CO) emissions from the Portable Thermal Oxidizer, A-3, shall not exceed 350 ppmvd at 15% O2 (0.80 lb/MMBtu). [Basis: RACT]

3. Precursor Organic Compound (POC) emissions from the Portable Thermal Oxidizer, A-3, shall not exceed 0.02 pounds per 1000 gallon of liquid loaded. [Basis: BACT]

4. The total throughput at the source (truck or marine loading facility) that A-3 is abating shall not exceed the lesser of:
   a. 4800 gallons of organic materials per minute, or
   b. The CARB certified gasoline throughput limits, or
   c. The District condition limit.
   [Basis: Cumulative Increase]

5. The owner/operator of Combustor A-3 shall not use more than 151,200 therms (14,823,529 cubic feet) of natural gas during any consecutive 12 month periods in any locations under the jurisdiction of BAAQMD. [Basis: cumulative increase]

6. The owner/operator of Combustor A-3 shall not use more than 5,883,288 cubic feet of propane during any consecutive 12 month periods in any locations under the jurisdiction of BAAQMD. [Basis: cumulative increase]

7. The owner/operator shall install a non-resettable totalizing meter and recorder to demonstrate compliance with Condition No. 6. [Basis: Regulation 2-1-403]

8. The Portable Thermal Oxidizer, A-3, shall be equipped with a temperature measuring device capable of continuously measuring and recording the temperature in A-3. The owner/operator shall install, and maintain the equipment in accordance with manufacturer's recommendations. The minimum furnace temperature of A-3 shall be at least 900 degree F. This minimum temperature may be adjusted by the District if source test data demonstrate that an alternate temperature is necessary for or capable of maintaining compliance with Condition No. 3 above. [Basis: Regulation 2-1-403]

9. Within 30 days after the end of every calendar year, the applicant shall provide to the Air District a year-end summary showing the following information: [Regulation 2-1-220]
   a. The location(s) at which the equipment was operated including the dates operated
   b. The total usage of natural gas in therms during the previous 12 months.
   c. The total usage of propane in cubic feet during the previous 12 months.

IX. RECOMMENDATION

Issue a Permit to Operate to Equilon Enterprises LLC for the following equipment:

A-3 Portable Thermal Oxidizer, 45 MMBtu/hr capacity, to abate existing sources S-1, S-2, S-3, and S-5, Loading Racks

By: _____ Date:_____
Faye Bruno
Air Quality Engineer II

APPENDIX B

GLOSSARY

ACT
Federal Clean Air Act

APCO
Air Pollution Control Officer

API
American Petroleum Institute

ARB
Air Resources Board

BAAQMD
Bay Area Air Quality Management District

BACT
Best Available Control Technology

BARCT
Best Available Retrofit Control Technology

Basis
The underlying authority that allows the District to impose requirements.

C5
An Organic chemical compound with five carbon atoms

C6
An Organic chemical compound with six carbon atoms

CAA
The federal Clean Air Act

CAAQS
California Ambient Air Quality Standards

CAPCOA
California Air Pollution Control Officers Association

CEC
California Energy Commission

CEQA
California Environmental Quality Act

CEM
A "continuous emission monitor" is a monitoring device that provides a continuous direct measurement of some pollutant (e.g. NOx concentration) in an exhaust stream.

CFP
Clean Fuels Project

CFR
The Code of Federal Regulations. 40 CFR contains the implementing regulations for federal environmental statutes such as the Clean Air Act. Parts 50-99 of 40 CFR contain the requirements for air pollution programs.

CO
Carbon Monoxide

CO2
Carbon Dioxide

Cumulative Increase
The sum of permitted emissions from each new or modified source since a specified date pursuant to BAAQMD Rule 2-1-403, Permit Conditions (as amended by the District Board on 7/17/91) and SIP Rule 2-1-403, Permit Conditions (as approved by EPA on 6/23/95). Used to determine whether threshold-based requirements are triggered.

DAF
A "dissolved air flotation" unit is a process vessel where air bubbles injected at the bottom of the vessel are used to carry solids in the liquid into a froth on the liquid surface, where it is removed.

DWT
Dead Weight Ton

District
The Bay Area Air Quality Management District

DNF
Dissolved Nitrogen Flotation (See DAF)

dscf
Dry Standard Cubic Feet

dscm
Dry Standard Cubic Meter

E 6, E 9, E 12
Very large or very small number values are commonly expressed in a form called scientific notation, which consists of a decimal part multiplied by 10 raised to some power. For example, 4.53 E 6 equals (4.53) x (10^6) = (4.53) x (10 x 10 x 10 x 10 x 10 x 10) = 4,530,000. Scientific notation is used to express large or small numbers without writing out long strings of zeros.

EFRT
An "external floating roof tank" minimizes VOC emissions with a roof with floats on the surface of the liquid, thus preventing the formation of a VOC-rich vapor space above the liquid surface as the level in the tank drops. If such a vapor space were allowed to form, it would be expelled when the tank was re-filled. On an EFRT, the floating roof is not enclosed by a second, fixed tank roof, and is thus described as an "external" roof.

EPA
The federal Environmental Protection Agency.

ETP
Effluent Treatment Plant

Excluded
Not subject to any District Regulations.

FCC
Fluid Catalytic Cracker

Federally Enforceable, FE
All limitations and conditions which are enforceable by the Administrator of the EPA including those requirements developed pursuant to 40 CFR Part 51, subpart I (NSR), Part 52.21 (PSD), Part 60 (NSPS), Part 61 (NESHAPs), Part 63 (HAP), and Part 72 (Permits Regulation, Acid Rain), and also including limitations and conditions contained in operating permits issued under an EPA-approved program that has been incorporated into the SIP.

FP
Filterable Particulate as measured by BAAQMD Method ST-15, Particulate.

FR
Federal Register

FRT
Floating Roof Tank (See EFRT and IFRT)

GDF
Gasoline Dispensing Facility

GLM
Ground Level Monitor

grains
1/7000 of a pound

Graphitic
Made of graphite.

HAP
Hazardous Air Pollutant. Any pollutant listed pursuant to Section 112(b) of the Act. Also refers to the program mandated by Title I, Section 112, of the Act and implemented by 40 CFR Part 63.

H2S
Hydrogen Sulfide

H2SO4
Sulfuric Acid

Hg
Mercury

HHV
Higher Heating Value. The quantity of heat evolved as determined by a calorimeter where the combustion products are cooled to 60F and all water vapor is condensed to liquid.

IFRT
An "internal floating roof tank" minimizes VOC emissions with a roof with floats on the surface of the liquid, thus preventing the formation of a VOC-rich vapor space above the liquid surface as the level in the tank drops. If such a vapor space were allowed to form, it would be expelled when the tank was re-filled. On an IFRT, the floating roof is enclosed by a second, fixed tank roof, and thus is described as an "internal" roof.

ISOM
Isomerization plant

LHV
Lower Heating Value. Similar to the higher heating value (see HHV) except that the water produced by the combustion is not condensed but retained as vapor at 60F.

Lighter
"Lightering" is a transfer operation during which liquid is pumped from an ocean-going tanker vessel to a smaller vessel such as a barge. Like any liquid transfer operation, lightering of organic liquids produces organic vapor emissions.

Long ton
2200 pounds

Major Facility
A facility with potential emissions of: (1) at least 100 tons per year of regulated air pollutants, (2) at least 10 tons per year of any single hazardous air pollutant, and/or (3) at least 25 tons per year of any combination of hazardous air pollutants, or such lesser quantity of hazardous air pollutants as determined by the EPA administrator.

MDEA
Methyl Diethanolamine

MFR
Major Facility Review. The District's term for the federal operating permit program mandated by Title V of the Act and implemented by District Regulation 2, Rule 6.

Mo Gas
Motor gasoline

MOP
The District's Manual of Procedures

MOSC
Mobil Oil Sludge Conversion (licensed technology)

MSDS
Material Safety Data Sheet

MTBE
methyl tertiary-butyl ether

NA
Not Applicable

NAAQS
National Ambient Air Quality Standards

NESHAPs
National Emission Standards for Hazardous Air Pollutants. See in 40 CFR Parts 61 and 63.

NMHC
Non-methane Hydrocarbons

NMOC
Non-methane Organic Compounds (Same as NMHC)

NOx
Oxides of nitrogen.

NSPS
Standards of Performance for New Stationary Sources. Federal standards for emissions from new stationary sources. Mandated by Title I, Section 111 of the Act, and implemented by 40 CFR Part 60 and District Regulation 10.

NSR
New Source Review. A federal program for pre-construction review and permitting of new and modified sources of air pollutants for which the District is classified "non-attainment". Mandated by Title I of the Clean Air Act and implemented by 40 CFR Parts 51 and 52 as well as District Regulation 2, Rule 2. (Note: There are additional NSR requirements mandated by the California Clean Air Act.)

O2
The chemical name for naturally-occurring oxygen gas.

Offset Requirement
A New Source Review requirement to provide federally enforceable emission offsets at a specified ratio for the emissions from a new or modified source and any pre-existing cumulative increase minus any onsite contemporaneous emission reduction credits. Applies to emissions of POC, NOx, PM10, and SO2.

Phase II Acid Rain Facility
A facility that generates electricity for sale through fossil-fuel combustion and is not exempted by 40 CFR 72 from Titles IV and V of the Clean Air Act.

POC
Precursor Organic Compounds

PM
Total Particulate Matter

PM10
Particulate matter with aerodynamic equivalent diameter of less than or equal to 10 microns

PSD
Prevention of Significant Deterioration. A federal program for permitting new and modified sources of air pollutants for which the District is classified "attainment" of the National Air Ambient Quality Standards. Mandated by Title I of the Act and implemented by both 40 CFR Part 52 and District Regulation 2, Rule 2.

Regulated Organic Liquid
"Regulated organic liquids" are those liquids which require permits, or which are subject to some regulation, when processed at a liquid-handling operation. For example, for refinery marine terminals, regulated organic liquids are defined as "organic liquids" in Regulation 8, Rule 44.

RFG
Refinery Fuel Gas

RMG
Refinery Make Gas

SCR
A "selective catalytic reduction" unit is an abatement device that reduces NOx concentrations in the exhaust stream of a combustion device. SCRs utilize a catalyst, which operates at a specific temperature range, and injected ammonia to promote the conversion of NOx compounds to nitrogen gas.

SIP
State Implementation Plan. State and District programs and regulations approved by EPA and developed in order to attain the National Air Ambient Quality Standards. Mandated by Title I of the Act.

SO2
Sulfur dioxide

SO2 Bubble
An SO2 bubble is an overall cap on the SO2 emissions from a defined group of sources, or from an entire facility. SO2 bubbles are sometimes used at refineries because combustion sources are typically fired entirely or in part by "refinery fuel gas" (RFG), a waste gas product from refining operations. Thus, total SO2 emissions may be conveniently quantified by monitoring the total amount of RFG that is consumed, and the concentration of H2S and other sulfur compounds in the RFG.

SO3
Sulfur trioxide

THC
Total Hydrocarbons (NMHC + Methane)

therm
100,000 British Thermal Unit

Title V
Title V of the federal Clean Air Act. Requires a federally enforceable operating permit program for major and certain other facilities.

TOC
Total Organic Compounds (NMOC + Methane, Same as THC)

TPH
Total Petroleum Hydrocarbons

TRMP
Toxic Risk Management Plan

TRS
"Total reduced sulfur" is a measure of the amount of sulfur-containing compounds in a gas stream, typically a fuel gas stream, including, but not limited to, hydrogen sulfide. The TRS content of a fuel gas determines the concentration of SO2 that will be present in the combusted fuel gas, since sulfur compounds are converted to SO2 by the combustion process.

TSP
Total Suspended Particulate

TVP
True Vapor Pressure

VOC
Volatile Organic Compounds

Units of Measure:

bbl	=	barrel of liquid (42 gallons)
bhp	=	brake-horsepower
btu	=	British Thermal Unit
C	=	degrees Celcius
F	=	degrees Farenheight
f^3	=	cubic feet
g	=	grams
gal	=	gallon
gpm	=	gallons per minute
hp	=	horsepower
hr	=	hour
lb	=	pound
in	=	inches
max	=	maximum
m^2	=	square meter
min	=	minute
M	=	thousand
Mg	=	mega-gram, one thousand grams
µg	=	micro-gram, one millionth of a gram
MM	=	million
mm	=	millimeter
MMbtu	=	million btu
mm Hg	=	millimeters of Mercury (pressure)
MW	=	megawatts
ppmv	=	parts per million, by volume
ppmw	=	parts per million, by weight
psia	=	pounds per square inch, absolute
psig	=	pounds per square inch, gauge
scfm	=	standard cubic feet per minute
yr	=	year

Symbols:

<	=	less than
>	=	greater than
≤	=	less than or equal to
≥	=	greater than or equal to