

**PERMIT APPLICATION REVIEW
COVERED SOURCE PERMIT NO. 0082-01-C
Renewal Application No. 0082-03**

Applicant: Chevron Products Company
Facility: Honolulu Transportation Terminal
Located At: 933 North Nimitz Highway, Honolulu, Oahu

***Mailing**

Address: 933 North Nimitz Highway
Honolulu, Hawaii 96817

Equipment: 1) Bottom loading load rack with two (2) loading lanes and nine (9) product load arms.
2) John Zink vapor collection system with 4,800 gallon per minute vapor recovery unit, model no. AA-825-8-8.

Responsible

Official: Mr. Denis Morgan	Contact: Ms. Ellen K. Collins
Title: Terminal Manager	Title: Air Specialist, Americas
Phone: (808) 527-2755	Phone: (925) 842-5364
Address: 933 North Nimitz Highway Honolulu, Hawaii 96817	Address: 6001 Bollinger Canyon Road Mailstop L2376 San Ramon, California 94583

1. Background.

1.1 Chevron Products Company has submitted a renewal application for its covered source permit to operate Honolulu Transportation Terminal. The transportation terminal distributes three grades of motor gasoline and two grades of diesel. Product is supplied to the to the transportation terminal via pipeline from Chevron Product Company's marine terminal. The loading rack for the transportation terminal is equipped with a vapor recovery system to control volatile organic compounds (VOCs). The existing permit limits load rack throughput to 474,500,000 gallons per year. There are no changes proposed for the permit renewal. The standard industrial classification code for this facility is 5171 (Petroleum Bulk Stations and Terminals).

1.2 Pictures from an August 5, 2008 site inspection of the facility are shown in Enclosure (1).

2. Applicable Requirements

2.1 Hawaii Administrative Rules (HAR)
Chapter 11-59, Ambient Air Quality Standards
Chapter 11-60.1, Air Pollution Control
Subchapter 1, General Requirements
Subchapter 2, General Prohibitions
§11-60.1-31 Applicability
§11-60.1-31 Storage of Volatile Organic Compounds
§11-60.1-41 Pump and Compressor Requirements
Subchapter 5, Covered Sources
Subchapter 6, Fees for Covered Sources, Noncovered Sources, and

- Agricultural Burning
- §11-60.1-111 Definitions
- §11-60.1-112 General Fee Provisions for Covered Sources
- §11-60.1-113 Application Fees for Covered Sources
- §11-60.1-114 Annual Fees for Covered Sources
- §11-60.1-115 Basis of Annual Fees for Covered Sources
- Subchapter 8, New Source Performance Standards
- §11-60.1-161 New Source Performance Standards

- 2.2 40 CFR Part 60, Subpart XX, Standards of Performance for Bulk Gasoline Terminals is applicable to the terminal based information from the initial covered source permit application for this facility.
- 2.3 40 CFR Part 63, Subpart BBBB – National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Distribution Bulk Terminals, Bulk Plants, and Pipeline Facilities is applicable because the facility’s gasoline throughput is greater than 20,000 gallons per day. The average daily product throughput at the facility, based on the terminal’s throughput limit of 474,500,000 gallons per year is $(474,500,000/365) = 1,300,000$ gallons/day. The facility is designated a bulk gasoline terminal because the gasoline throughput is greater than 20,000 gallons per day.
- 2.4 The facility will be placed into the Compliance Data System (CDS) because the terminal is a covered source.
- 2.5 The Consolidated Emissions Reporting Rule (CERR) is not applicable because emissions from the facility do not exceed reporting levels pursuant to 40 CFR 51 (see table below).

CERR APPLICABILITY			
Pollutant	Emissions (TPY)	CERR Triggering Levels (TPY)	
		1 year cycle (Type A sources)	3 year cycle (Type B sources)
VOC	91.2	≥ 250	≥ 100

- 2.6 A best available control technology analysis (BACT) analysis is required for new sources or modifications to existing sources that would result in a significant emissions increase as defined in HAR, Section 11-60.1. Because there are no modifications to the terminal that increase emissions, BACT is not applicable.
- 2.7 The purpose of Compliance Assurance Monitoring (CAM) is to provide reasonable assurance that compliance is being achieved with large emissions units that rely on air pollution control device equipment to meet an emissions limit or standard. Pursuant to 40 CFR Part 64, for CAM to be applicable, the emissions unit must: (1) be located at a major source; (2) be subject to an emissions limit or standard; (3) use a control device to achieve compliance; (4) have potential pre-control emissions that are greater than the major source level; and (5) not otherwise be exempt from CAM. Although the load rack relies on a vapor recovery unit to achieve compliance with the federal VOC standard required by 40 CFR, Subpart XX and has potential pre-control emissions greater than the major source level for VOCs, CAM is not applicable to the load rack because the terminal is not a major source.

- 2.8 Prevention of significant deterioration (PSD) does not apply because emissions from the terminal are less than major source thresholds.
- 2.9 The facility is not a major source for hazardous air pollutants (HAPs) and is not subject to National Emission Standards for HAPs or maximum achievable control technology standards under 40 CFR, Parts 61 and 63.
- 2.10 The facility is a synthetic minor source because the throughput limitation of 475,500,000 gallons per year restricts emissions below major source thresholds. Maximum capacity of the terminal is 4,800 gallons per minute based on the capacity of the vapor system (2,522,880,000 gallons/year).

3. Insignificant Activities

- 3.1 information from the previous permit application review and the August 5, 2008 site inspection disclosed the following insignificant activities:
 - a. A diesel fuel dispenser for filling the fuel tanks of motor vehicles at the load rack is considered an insignificant activity pursuant to HAR §11-60.1-82(f)(7).
 - b. An ethanol proofer tank (day tank) is considered an insignificant activity pursuant to HAR §11-60.1-82(f)(7). The tank collects ethanol when calibrating meters for blending ethanol with gasoline at the load rack.
 - c. A 10,000 gallon underground process tank for runoff and other fuel waste is an insignificant activity pursuant to HAR §11-60.1-82(f)(1).
 - d. Two (2) 8,000 gallon gasoline additive tanks are insignificant activities in accordance with HAR §11-60.1-82(f)(1).
 - e. Two (2) 250 kW emergency diesel engine generators located at the marine terminal in accordance with HAR §11-60.1-82(f)(5). The diesel engine generators service the transportation and marine terminals when there is a power outage.
 - f. Temporary 6,000 gallon abgas tote tanks are considered insignificant activities in accordance with HAR §11-60.1-82(f)(7).

4. Alternate Operating Scenarios

- 4.1 No alternate operating scenarios were proposed for the permit renewal.

5. Project Emissions

- 5.1 Potential emissions from the bottom loading load rack with vapor recovery were based on the following:
 - a) Maximum permitted throughput of 11,297,619 bbls/yr (474,500,000 gal/yr) based the facility's throughput limit;
 - b) Loading of motor gasoline into tank trucks as worst-case scenario;
 - c) A maximum VOC emission of 35 mg per liter of product loaded based on federal standard for total organic compounds (TOCs) and loading gasoline worst-case;

- d) A VOC emission factor of 11 mg/liter for leakage from tank truck when loading tank trucks based EPA guidance document from MACT standard (40 CFR Part 63, Subpart R);
- e) Vapor mass fractions of pollutants for motor gasoline were multiplied by the total VOC emissions to determine HAP emissions; and
- f) Potential VOC/HAP emissions are summarized as follows:

Bottom Loading Load Rack Emissions		
Pollutant	Vapor Mass Fraction	Emission (TPY)
VOC	-----	91.1 ^{a,b}
Benzene	0.0054	0.003
Ethyl benzene	0.0005	0.046
Hexane	0.0048	0.437
Toluene	0.0064	0.583
Xylenes	0.0019	0.173
Total HAPs----->		1.242

a: VOC emission from vapor recovery unit for loading gasoline:

$$(35 \text{ mg/liter})(474,500,000 \text{ gal/yr})(\text{liter}/0.264 \text{ gal})(10^{-3} \text{ g/mg})(\text{kg}/1,000 \text{ g})(2.2046 \text{ lb/kg})(\text{ton}/2,000 \text{ lb}) = 69.343 \text{ TPY}$$

b: VOC emission from tank truck while loading gasoline:

$$(11 \text{ mg/liter})(474,500,000 \text{ gal/yr})(\text{liter}/0.264 \text{ gal})(10^{-3} \text{ g/mg})(\text{kg}/1,000 \text{ g})(2.2046 \text{ lb/kg})(\text{ton}/2,000 \text{ lb}) = 21.793 \text{ TPY}$$

5.2 Equipment leaks emissions were determined based on New Equipment Leak Emission Factors for Petroleum Refineries, Gasoline Marketing, and Oil & Gas Production, February 1995 [EPA-453/R-95-017], Table 2.3. Emission factors were selected from the light liquid and gas group as applicable for fittings (connectors and flanges), pumps, and valves. The applicant reported 674 fittings, 2 pumps, and 117 valves. Vapor weight fractions of pollutants from data for motor gasoline were multiplied by the total VOC emissions to determine HAP emissions. Emission estimates are summarized below as follows:

Equipment Leak Emissions					
Pollutant	Vapor Mass Fraction	Emission (TPY)			Total Emissions
		^a Pump Seals	^b Valves	^c Connectors	
VOC	-----	0.010	0.049	0.052	0.111
Benzene	0.0054				0.0006
Ethyl benzene	0.0005				0.0001
Hexane	0.0048				0.0005
Toluene	0.0064				0.0007
Xylenes	0.0019				0.0002
Total HAPs----->					0.002

a: (2 pump seals)(5.4E-04 kg/hr – seal)(2.2 lb/kg)(8,760 hr/yr)(ton/2,000 lb) = 0.010 TPY VOC

b: (117 valves)(4.3E-05 kg/hr – valve)(2.2 lb/kg)(8,760 hr/yr)(ton/2,000 lb) = 0.049 TPY VOC

c: (674 connectors)(8.0E-06 kg/hr – connector)(2.2 lb/kg)(8,760 hr/yr)(ton/2,000 lb) = 0.052 TPY VOC

5.3 Worst-case yearly emissions of VOCs and HAPs from the terminal are as follows:

Facility Emissions			
Pollutant	Emissions (TPY)		Total Emissions (TPY)
	Bottom Loading Load Rack	Equipment Leaks	
VOCs	91.1	0.1	91.2
HAPS	1.242	0.002	1.2

6. Air Pollution Controls

6.1 Emissions from the loading rack are controlled by a model no. AA-825-8-8 John Zink vapor recovery unit. The system has two activated carbon vessels that recover hydrocarbon vapors from tank truck loading operations. The carbon adsorption vessels alternate in operation every 15 minutes. Vapors from loading tank trucks are recovered, condensed, and pumped back to the product supply tank.

7. Air Quality Assessment

7.1 An ambient air quality impact assessment is not required for the terminal because air modeling is not required for VOCs.

8. Significant Permit Conditions

8.1 Add conditions that incorporate control measures for equipment leaks and the loading rack’s vapor processing system as required by 40 CFR Part 63, Subpart BBBB.

Reason for 8.1: 40 CFR Part 63, Subpart BBBB was promulgated on January 10, 2008. Chevron must comply with the standards of Subpart BBBB no later than January 10, 2011.

8.2 Subject tank truck vapor tightness documentation to requirements specified in 40 CFR Part 63, Subpart BBBB upon permit issuance.

Reason for 8.2: Tank truck vapor tightness documentation required for 40 CFR Part 63, Subpart BBBB is similar to the requirements specified in 40 CFR Part 60, Subpart XX. The requirements specified in 40CFR Part 63, Subpart BBBB provide additional options for complying with the vapor tightness documentation requirements.

9. Conclusions and Recommendation

9.1 Actual emissions should be less than those estimated. Maximum potential VOC emissions from the vapor recovery unit were based on a 35 mg/l TOC limit specified in 40 CFR Part 60, Subpart XX. Records from previous performance tests indicate actual emissions from the vapor recovery unit to be far below the federal limit. The most recent test conducted in 2006 showed a total organic compound emission of 0.96 mg per liter of gasoline loaded. Requirements from 40 CFR Part 63, Subpart BBBB that will be applicable in 2011 should ensure the vapor processing and collection systems are operating properly to control emissions. Recommend issuance of the permit subject to incorporation of the significant permit conditions. The 30-day public comment period and 45-day review by the Environmental Protection Agency will be initiated simultaneously.

Mike Madsen 8-5-2008

Application No. 0082-03