

**PERMIT APPLICATION REVIEW
COVERED SOURCE PERMIT NO. 0082-01-C
Application for Modification No. 0082-04**

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

Responsible

Official: Dennis Morgan	Contact: Todd E. Osterberg
Title: Terminal Manager	Title: HES Specialist - Logistics
Phone: (808) 527-2755	Phone: (808) 527-2747
Address: 933 North Nimitz Highway Honolulu, Hawaii 96817	Address: 777 North Nimitz Highway Honolulu, Hawaii 96817

1. Background.

- 1.1 Chevron Products Company has submitted a permit modification for its Honolulu Transportation Terminal to incorporate control requirements from Option 2 of Table 2 in 40 Code of Federal Regulations (CFR) Part 63, Subpart BBBB. The modification was submitted based on additional clarification in the Federal Register (Tuesday, December 15, 2009) for determining gasoline throughput. The permit renewal issued in 2008 incorporated the most stringent requirements from 40 CFR Part 63, subpart BBBB based on the terminal's permitted throughput. Additional clarification indicates gasoline throughput for control options specified in the federal standard is an average of the actual yearly amount of gasoline loaded into cargo tanks.
- 1.2 The Honolulu Transportation Terminal distributes three grades of motor gasoline and two grades of diesel fuel from its load rack. Product is supplied to the transportation terminal via pipeline from Chevron Product Company's marine terminal. The load rack for the transportation terminal is equipped with a vapor recovery system to control volatile organic compounds (VOCs). There are no permitted tanks at the transportation terminal. Tanks that supply product for the transportation terminal are located at the marine terminal. Property for the marine terminal and transportation terminal is not contiguous or adjacent; therefore, these terminals do not need to be permitted as one stationary source. The existing permit for the transportation terminal restricts load rack throughput to 474,500,000 gallons per year. There are no changes proposed for the transportation terminal's permit renewal. The standard industrial classification code for this facility is 5171 (Petroleum Bulk Stations and Terminals).
- 1.3 Monitoring records indicate the average daily throughput for this terminal is below the 250,000 gallon per day gasoline throughput threshold that would subject the load rack to the most stringent standards specified in 40 CFR Part 63, Subpart BBBB from Option 1

of Table 2. Maximum gasoline throughput at this terminal was 194,637 gallons per day for 2009 and 191,053 gallons per day for 2008 based on a twelve (12) month rolling average loading of unleaded gasoline, aviation gasoline, naphtha, and ethanol.

- 1.4 Tote tanks that can be transported by truck are loaded with aviation gasoline at the refinery and temporarily stored at the transportation terminal prior to being shipped by barge to outer islands. The aviation gasoline was included in the transportation terminal's total throughput. Aviation gasoline; however, does not need to be included in the transportation terminal's total throughput because this product was not loaded into cargo tanks at the facility's load rack.

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 Honolulu Transportation Terminal based on 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 emits hazardous air pollutants (HAPs) from an area source bulk gasoline terminal. The facility is designated a bulk gasoline terminal because the gasoline throughput is greater than 20,000 gallons per day based on the permit limit on gasoline throughput. Option 2 from Table 2 of 40 CFR Part 63, Subpart BBBB applies to the load rack because records indicate the actual gasoline throughput has been less than 250,000 gallons per day. See Paragraph 1.3.

- 2.4 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

- 2.5 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.
- 2.6 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.
- 2.7 Prevention of significant deterioration (PSD) does not apply because emissions from the terminal are less than major source thresholds.
- 2.8 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 recovery unit (2,522,880,000 gallons/year).

3. Insignificant Activities

- 3.1 information from the previous permit application review and an August 5, 2008 site inspection disclosed the following insignificant activities:
 - a. A diesel fuel dispenser for filling motor vehicle fuel tanks at the load rack is considered an insignificant activity pursuant to HAR §11-60.1-82(f)(7).
 - b. A portable 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 are insignificant activities 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 aviation gasoline tote tanks are considered insignificant activities in accordance with HAR §11-60.1-82(f)(7). These cargo tanks temporarily store gasoline for transport by barge to outer islands.

4. Alternate Operating Scenarios

4.1 No alternate operating scenarios were proposed by the applicant for the permit modification.

5. Project Emissions

5.1 Potential emissions from the bottom loading load rack with vapor recovery unit 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 motor gasoline into cargo tanks 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);
- d. A VOC emission factor of 11 mg/liter from cargo tank leakage when loading gasoline into tank trucks based on EPA guidance document from 40 CFR Part 63, Subpart R;
- e. Vapor mass fractions of components 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:
 $(35 \text{ mg/liter})(474,500,000 \text{ gal/yr})(\text{liter}/0.264 \text{ gal})(10^{-3} \text{ g/mg})(\text{kg}/1,000 \text{ g})(2.2046 \text{ lb/kg})(\text{ton}/2,000 \text{ lb}) = 69.3 \text{ TPY}$
- b: VOC emission from cargo tank while loading gasoline:
 $(11 \text{ mg/liter})(474,500,000 \text{ gal/yr})(\text{liter}/0.264 \text{ gal})(10^{-3} \text{ g/mg})(\text{kg}/1,000 \text{ g})(2.2046 \text{ lb/kg})(\text{ton}/2,000 \text{ lb}) = 21.8 \text{ TPY}$

5.2 Emissions from equipment leaks 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 compounds from motor gasoline were multiplied by the total VOC emissions to determine HAP emissions. Emission estimates are 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	0.1
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 load 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 cargo tank loading operations. The carbon adsorption vessels alternate in operation every 15 minutes. Vapors from loading cargo 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.

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 federal standard no later than January 10, 2011.

9. Conclusions and Recommendation

9.1 Actual emissions should be less than those estimated. Maximum potential VOC emissions were based on the 35 mg per liter TOC limit specified in 40 CFR Part 60, Subpart XX for load racks. 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 2008 showed a total organic compound emission of 0.18 mg per liter of gasoline loaded. Recommend issuance of the permit subject to incorporation of the significant permit

PROPOSED

conditions. The 30-day public comment period and 45-day review period by the Environmental Protection Agency will be initiated simultaneously.

Mike Madsen 8-26-2010