

**PERMIT APPLICATION REVIEW
COVERED SOURCE PERMIT (CSP) NO. 0078-01-C
Renewal Application No. 0078-03**

Applicant: Chevron Products Company

Facility: Honolulu Terminal Marine

***Location:** 777 North Nimitz Highway, Honolulu, Oahu

****Mailing**

Address: 91-480 Malakole Street
Kapolei, Hawaii 96707

Responsible

Official: Mr. Alan D. Mosser
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Title: Terminal Manager	Title: Terminal Environment Safety Specialist
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1. Background

1.1 Chevron Products Company has submitted an application to renew their covered source permit for Honolulu Terminal Marine (HTM) located at 777 North Nimitz Highway. HTM consists of storage tanks and a marine vessel loading facility. Product is supplied to HTM via single pipeline from the Chevron refinery located in Campbell Industrial Park. Product received by HTM is either piped to Chevron's Honolulu Transportation Terminal (HTT) at 933 North Nimitz Highway for tank truck distribution or loaded onto vessels at HTM Pier 30 for marine distribution. The standard industrial classification code for HTM is 5171 (Petroleum Bulk Stations and Terminals).

1.2 For the renewal, Chevron requested the following changes to their permit:

- a. Add naphtha (whole straight run gasoline) and Dimate to the total combined marine loading throughput allowable for Mogas (motor gasoline) and Avgas (aviation gasoline). Dimate is produced at the refinery's dimersol plant. The Department approved Chevron's request to load about 6,000 barrels of Dimate into a tanker at HTM Pier 30 on September 17, 2003. The Dimate was shipped to France as an ingredient for Chanel No. 5 perfume. The shipment, however, was rejected by the perfume manufacturer.

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- b. Remove the 6,271,619 barrel per year throughput limit for marine loading of Jet A.
 - c. Remove Attachment IIB, Section D, Special Condition No. 3 that requires quarterly liquid and vapor leak inspections for the marine vessel loading facility.
 - d. Remove Tank No. 2 from the permit because the tank's aluminum internal floating roof was taken out since the floating roof did not meet Chevron's specifications which requires a steel construction. The tank will now store Jet A instead of gasoline.
- 1.3 A site inspection of HTM on December 5, 2003 disclosed the following information [see Enclosure (1)]:
- a. Tank No. 27 that stores unleaded gasoline is out of service.
 - b. HTM no longer handles fuel oil No. 6.
 - c. Chevron truck tanks do not have gaps between compartments to separate diesel from gasoline.
 - d. Yamashiro Trucking truck tanks have gaps between compartments to separate diesel from gasoline.
 - e. Contamination of gasoline with diesel is a safety concern because the diesel will lower the gasoline flash point.
 - f. The following insignificant activities were observed at the terminal:
 - 1. Oil water separator in an open concrete pit that handles water from tank water draws (water pumped out of collection sump at bottom of tanks);
 - 2. Three (3) oil water separators in closed concrete pits that handle storm water;
 - 3. Monarch system oil water separator job no. 890, serial no. MSECS 28/75 8901 that is not in use;
 - 4. 256 kW Caterpillar emergency diesel engine generator;
 - 5. Unitek solvent cleaning unit;
 - 6. 760 gallon recovered oil tank that stores petroleum contaminated water collected from aquifer;
 - 7. 1,000 gallon Techron additive storage Tank No. 52;
 - 8. 400 gallon diesel additive tote tank;
 - 9. 25,855 barrel fixed cone roof Tank No. 51 storing high sulfur diesel;
 - 10. 5,849 barrel fixed cone roof Tank No. 32 storing fuel oil No. 5;
 - 11. One compartment sump (open concrete pit 11.3' x 6.3' x 3.9') handling tank water draws; and
 - 12. Two compartment sump (open concrete pit 12' x 9' x 4.7') handling tank water draws and storm water.

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1.4 Mr. Rosen indicated that part of the primary seal for Tank No. 30 can be seen from roof hatches during tank inspections.

2. Applicable Requirements

2.1 See permit application review Nos. 0078-01 and 0078-02 for applicability to Hawaii Administrative Rules (HAR).

2.2 Tank No. 30 is subject to 40 Code of Federal Regulations (CFR), Part 60-New Source Performance Standards, 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.

2.3 The facility will be placed into the Compliance Data System (CDS) because HTM is a covered source.

2.4 The Consolidated Emissions Reporting Rule (CERR) is applicable because emissions from the facility exceed reporting levels pursuant to 40 CFR 51, Subpart A for a Type A source (see table below).

CERR APPLICABILITY			
Pollutant	Potential Emissions (TPY)	CERR Triggering Levels (TPY)	
		1 year cycle (Type A sources)	3 year cycle (Type B sources)
VOC	343.4	≥ 250	100

2.5 A Best Available Control Technology (BACT) analysis is required for new sources or modifications to existing sources that would result in a net emission increase above significant levels as defined in HAR, Section 11-60.1-1. There are no changes to the facility subject to BACT review. The change to load Dimate and naphtha will not increase volatile organic compound (VOC) emissions for total combined throughput limit specified for Avgas, Dimate, Mogas and naphtha because emissions are based on marine loading gasoline worst-case. The change to load Dimate and naphtha is not subject to BACT review because the terminal was capable of accommodating Dimate and naphtha prior to January 6, 1975.

2.6 Although Chevron HTM is a major stationary source for VOCs [the terminal emits more than 100 TPY VOCs], prevention of significant deterioration (PSD) does not apply because there is no modifications proposed that are subject to BACT review.

2.7 The facility is not a major source for hazardous air pollutants (HAPs) and is not subject to any National Emissions Standards for Hazardous Air Pollutants or Maximum Achievable Control Technology standards under 40 CFR Parts 61 or 63. See permit application review Nos. 0078-01 and 0078-02.

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2.8 The purpose of Compliance Assurance Monitoring (CAM) is to provide reasonable assurance that compliance is being achieved with large emission 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 precontrol emissions that are greater than the major source level; and (5) not otherwise be exempt from CAM. Although the terminal is a major source for VOCs, CAM is not applicable because this terminal does not use a control device as defined in 40 CFR, Part 64, to achieve compliance with an applicable limit or standard.

3. Insignificant Activities

3.1 The following is a list of insignificant activities at the terminal. Tanks listed in (a)-(j) are exempt per HAR §11-60.1-82(f)(7-D). Tanks listed at (k)- (m) are exempt per HAR §11-60.1-82(f)(1). The oil water separators and sumps listed at (n)-(r) are exempt per HAR §11-60.1-82(f)(7-D). Emergency diesel engine generator listed at (s) is exempt per HAR §11-60.1-82(f)(5). Marine vessel loading operations for diesel and fuel oil listed at (t) are exempt per HAR §11-60.1-82(f)(7-D).

- a. 16,404 barrel fixed cone roof Tank No. 1;
- b. 9,288 barrel fixed roof Tank No. 2;
- c. 52,442 barrel fixed cone roof Tank No. 5;
- d. 1,454 barrel fixed cone roof Tank No. 7;
- e. 13,283 barrel fixed cone roof Tank No. 14;
- f. 11,521 barrel fixed cone roof Tank No. 26;
- g. 5,849 barrel fixed cone roof Tank No. 32;
- h. 11,205 barrel fixed cone roof Tank No. 48;
- i. 23,502 barrel fixed cone roof Tank No. 50;
- j. 25,855 barrel fixed cone roof Tank No. 51;
- k. 1,000 gallon horizontal fixed roof Tank No. 52;
- l. 400 gallon portable tote tank;
- m. 760 gallon recovered oil tank;
- n. Oil water separator inside open concrete pit;
- o. Three (3) oil water separators inside closed concrete pits;
- p. Monarch System oil water separator, job no. 890, serial no. MSECS 28/75 8901;
- q. Sump (one compartment concrete pit);
- r. Sump (two compartment concrete pit);
- s. 256 kW emergency Caterpillar diesel engine generator, model no. 3406B, serial no. 4RC00344PP04841; and
- t. Marine vessel loading operations for diesel and fuel oil.

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4. Alternative Operating Scenarios

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

5. Air Pollution Controls

5.1 The terminal has twelve (12) tanks equipped with internal floating roofs to control VOC/HAP emissions for storing light liquid products such as motor gasoline.

6. Project Emissions

6.1 Potential emissions from marine vessel loading operations were based on emission factors from AP-42, Section 5.2 (1/95) "Transportation And Marketing Of Petroleum Liquids" with the following assumptions [see Enclosure (2)]:

- a. Maximum permitted loading throughput of 4,137,881 barrels (173,791,002 gal/yr) to determine VOC emissions from total combined loading of Avgas, Dimate, Mogas, and naphtha;
- b. Maximum permitted loading throughput of 6,271,619 barrels (263,407,998 gal/yr) to determine VOC emissions from loading Jet A;
- c. VOC emission factor for gasoline loading for typical overall situation of 3.4 lb/1000 gal based on Section 5.2, Table 5.2-2;
- d. An emission factor for Jet A loading of 0.172 lb/1,000 gal based on Section 5.2 emission factor Equation (1) and assuming a saturation factor (S) for submerged barge loading of 0.5, a true vapor pressure of 0.1139 psia, a molecular weight of 130 lb/lb-mole, and a temperature of 537 °K;
- e. Vapor mass fractions for pollutants from light liquids and jet A were multiplied by the total VOC emissions to determine HAP emissions;
- f. Potential VOC/HAP emissions, shown in Enclosure (2), are summarized as follows:

Marine Vessel Loading Emissions			
Pollutant	Emission (TPY)		
	Light Liquid	Jet A	Total
VOC	295	23	318
HAPs	^a 9.058	0.816	9.874

a: Based on loading naphtha worst-case.

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6.2 Potential emissions from the tank farm were based on storing Mogas worst-case with a Reid vapor pressure of 11.5 and a 648,291,002 barrel per year (27,228,222,084 gal/yr) throughput based on permit limitations for product throughput from air permits for HTM and HTT. Vapor mass fractions of components for naphtha were multiplied by the total VOC emissions to determine HAP emissions worst case. Emissions were not estimated from tanks storing Jet A, diesel, and fuel oil because these tanks are insignificant activities. Potential emissions from the tank farm are shown in Enclosure (3) and summarized below:

Tank Farm Emissions	
Pollutant	Emissions (TPY)
VOC	24.9
HAPs	0.763

6.3 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 group for pump seals, valves, and fittings. Information from the application on the number of pump seals, valves, and connectors was used to determine emissions. Vapor weight fractions of pollutants from data for naphtha were multiplied by the total VOC emissions to determine HAP emissions. Emission estimates are summarized below as follows:

Equipment Leak Emissions				
Pollutant	Emissions (TPY)			Emissions (TPY)
	Valves	Fittings	Pump Seals	
VOC	0.211	0.190	0.135	0.536
HAPs	0.008	0.007	0.006	0.021

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6.4 Worst-case yearly emissions of VOCs and HAPs from operating HTM are shown below:

Facility Emissions				
Pollutant	Emissions (TPY)			Emissions (TPY)
	Marine Vessel Loading	Tank Farm	Equipment Leaks	
VOC	318	24.9	0.5	343.4
HAPs	9.9	0.8	-----	10.7

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 Dimate and naphtha to total combined marine throughput allowable for Mogas and Avgas.
- 8.2 The 6,271,619 barrel per year throughput limit for Jet A will not be removed because VOC emissions are above exemption levels at Jet A limit specified by permit because the marine vessel loading facility has no air pollution controls.
- 8.3 Attachment IIB, Section D, Special Condition No. 3 will not be removed based on information from the Departments response to Chevron's comments on the draft permit under application No. 0078-02.
- 8.4 Tank No. 2 will be removed from the permit because the tank meets exemption criteria since the tank will store Jet A instead of gasoline.
- 8.5 The permit will be updated as applicable, including monitoring requirements to determine HAP emissions on a twelve month (12-month) rolling basis.

9. Conclusion and Recommendation

9.1 Actual emissions from the distribution terminal should be less than those estimated. Actual throughput for calendar year 2003 was 66,987,000 gallons and 22,639,000 gallons for Mogas and Jet fuel, respectively. Actual product throughput for year 2003 is below the 4,137,881 barrel/yr (173,791,002 gallon/yr) total combined light liquid and 6,271,619 barrel/yr (263,407,998 gallon/yr) Jet A throughput limits specified in the permit. Recommend issuance of the permit with changes and updated conditions pending 30-day public comment period and 45-day review by EPA.

Mike Madsen 2-3-2004

Application Renewal No. 0078-03